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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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ATOMIC SAFETY AND LICENSING BOARD PANEL

+ + + + +

HEARING

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In the Matter of: :
SOUTHERN NUCLEAR : Docket No. 52-011-ESP
OPERATING COMPANY : ASLBP No.
(Early Site Permit for : 07-850-01-ESP-BD01
Vogtle ESP Site :

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Wednesday, March 18, 2009

Doubletree Hotel Augusta &
Convention Center
2651 Perimeter Parkway
Augusta, Georgia

BEFORE:
G. PAUL BOLLWERK, Chair, Administrative Judge
NICHOLAS G. TRIKOUROS, Administrative Judge
DR. JAMES F. JACKSON, Administrative Judge

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P R O C E E D I N G S

(9:00 a.m.)

1
2
3 JUDGE BOLLWERK: Let's go ahead and go on
4 the record, please.

5 Good morning, everyone. We are back for
6 the third day of our hearing on the Vogtle ESP
7 contested proceeding. This morning we are scheduled
8 to continue our consideration of Contention EC,
9 Environmental Contention, 1.3, and yesterday the Board
10 finished the questioning of the Joint Intervenors'
11 witnesses with respect to that contention with one
12 caveat, and that caveat we are going to deal with this
13 morning, which is we have asked the parties to prepare
14 and to please provide us with an opportunity to have
15 several of the witnesses on at the same time so that
16 we can question them in that mode.

17 I should mention, by the way, as an
18 administrative matter if anyone found a BlackBerry
19 last night that doesn't have very interesting E-mail
20 messages on it that they're not interested in reading,
21 someone here probably left, I think. So if anybody
22 did find one, just let the Board know, and we'll pass
23 it along to the individual involved. They're not your
24 E-mails. So you probably don't care anyway.

25 All right. Let's go ahead then and begin

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1 with our panel for this morning. And who has the
2 Applicant decided they wish to make their
3 presentations or be part of the presentation?

4 MR. LeJEUNE: Jim Cuchens and Mr. Pierce,
5 Mr. Chuck Pierce.

6 JUDGE BOLLWERK: All right. If they would
7 then like to come up and have a seat at the table, and
8 then for the Intervenor, I think we have Mr. Powers.

9 MR. SANDERS: I believe Mr. Powers is in
10 the restroom.

11 JUDGE BOLLWERK: Oh, all right.

12 MR. SANDERS: He should be here in a
13 moment. There he is. That will work.

14 JUDGE BOLLWERK: Just in time. Mr.
15 Powers, you can go ahead and take a seat. It is kind
16 of open seating. So wherever you are comfortable.

17 All right. I think I made reference to
18 this yesterday, but there's just a couple of ground
19 rules here that I would like to make sure everybody is
20 aware of. In these, as I've done them in the past,
21 there is a tendency among the witnesses. You're
22 thinking about something and it's important to you,
23 and we understand that, and when the question is asked
24 -- and you're thinking -- to another witness, you're
25 thinking of your response, and your instinct is to

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1 want to hop in and sort of make an immediate response.

2 I would suggest that you don't do that. Wait for the
3 Board to ask for a response.

4 If you need to, take some notes, and if
5 anybody needs to go get a piece of paper and a pencil,
6 you can certainly do that right now, but wait until we
7 request a response or reply from you. That makes
8 things go much more smoothly.

9 I also mentioned yesterday, I think I may
10 have used the term "discussion," and to a degree this
11 is a discussion, but I think we need to clarify also
12 in the end what you are doing is testifying before the
13 Board. So all of your responses need to be directed
14 back to us. This is not an opportunity for the
15 parties, the witnesses at the table to kind of have a
16 discussion among themselves, but you should be
17 responding to Board questions and directing your
18 responses to us.

19 And I think if we follow those two rules
20 we will have no problems. Again, this is an
21 opportunity for you all to listen to what each of you
22 has to say, to respond. We will certainly try, as
23 long as we feel it's useful, to go back and forth
24 between the representatives of the different parties,
25 getting information.

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1 There may come a point where we decide
2 that we're kind of reaching the rule of the law of
3 diminishing returns is beginning to apply, and we may
4 just cut things off, but if you have something you
5 want to say, certainly, and if we haven't gone to you,
6 make sure that we know you're available, but again,
7 please wait generally for a request from the Board for
8 a response. That's the easiest way to handle this.

9 Any questions by anyone, including
10 counsel, about what we're going to do?

11 (No response.)

12 JUDGE BOLLWERK: All right, okay. I think
13 Judge Trikouros is going to start off the questioning
14 then.

15 JUDGE TRIKOUROS: Just arbitrarily I will
16 start with Mr. Powers, but again, arbitrarily.

17 Would a high backpressure turbine be an
18 option or a necessity, given the conditions at the
19 Vogtle site?

20 MR. POWERS: I think it is probably the
21 most likely scenario. It wouldn't be a necessity, but
22 the most likely scenario in this case.

23 JUDGE TRIKOUROS: All right. Same
24 question for Mr. Cuchens.

25 MR. CUCHENS: We believe it to be more of

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1 a necessity because of the reasons I alluded to
2 earlier. That being said, because we had designed an
3 ACC for 4.5, which is in our opinion too close to
4 operate as a norm to the alarm points or set points on
5 a turbine, it's a general practice of the industry to
6 stay away with sufficient margins in your cooling
7 systems, to stay away from those alarms as much as
8 possible.

9 And as you alluded to earlier, Judge
10 Trikouros, that obviously for 95 degrees we're going
11 to be as much as 105 degrees at the site on occasions,
12 and so I recognize that there has been supposition
13 that 4.5 is acceptable and doable, but we still
14 propose that 4.5, when you have considerations of the
15 other factors, that then is 4.5 plus some degree of
16 variance for windage and associated site effects, as
17 well as the other factors that would be considered if
18 you went forward with real marginated condensers
19 because this is not a marginated condenser for those
20 considerations; that we would be then at five degrees
21 -- five inches -- excuse me -- five inches or higher.

22 So for those reasons, I believe it becomes
23 a necessity.

24 JUDGE BOLLWERK: If I could interrupt you
25 for one second, one thing I forgot to mention is an

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1 administrative matter, although I think it was
2 obvious. You all are and have been, have been and are
3 under oath. So obviously that still applies. I
4 apologize, but I need to remind you of that.

5 Go ahead.

6 JUDGE TRIKOUROS: Mr. Powers, does that
7 rationale make sense to you?

8 MR. POWERS: I think there's logic to that
9 rationale, and we talked about that yesterday. I do
10 not know what the margin is that the NRC and Southern
11 Company are alluding to as far as getting close to the
12 alarm point or the trip point on the turbine, but I
13 want to reiterate that SNC has done a revised report
14 where they identify the normal range of operation as
15 one inch to five inches on that standard turbine, and
16 the ACC at 35 degrees ITD throughout its operating
17 range stays within that normal operating range.

18 JUDGE TRIKOUROS: Okay. I think that's
19 fine. I think we can go on to the next question.

20 Excuse me.

21 The next question, Mr. Powers. What is
22 the largest turbine in your experience that has been
23 converted from low backpressure to high backpressure?

24 MR. POWERS: That's a good question. I'm
25 not sure how many turbines have been converted that

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1 were originally specked as standard turbines and then
2 had their last stage bucket removed. That is a very
3 straightforward process. I'm not sure how many times
4 it has been done. It is typically done taking a
5 standard turbine design and prior to shipping the
6 turbine to the job site if it's for an ACC, the last
7 stage bucket is not added to the turbine. So it is
8 not a technically complex issue.

9 And the high backpressure turbine is not a
10 different animal. It is the same standard turbine
11 with the last stage bucket removed.

12 JUDGE TRIKOUROS: When you make that
13 conversion to the last stage, would there be an impact
14 on turbine performance as a result of that conversion?

15 MR. POWERS: There would be, and the point
16 of that is to prevent condensation of steam between
17 the second to last stage bucket and the last stage
18 bucket, and so the point is to prevent aerosol bullets
19 from hitting that last stage set of blades, and so it
20 is done to assure the reliability of the performance
21 of the turbine, and yes, as a result of removing that
22 last stage and not having the opportunity to get
23 additional power out of the steam driving that last
24 stage, there is a slight impact on performance.

25 JUDGE TRIKOUROS: Would there be an impact

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1 on performance in terms of efficiency?

2 MR. POWERS: At the higher end, yes, and
3 that's reflected in these curves that we looked at
4 yesterday as well, the curves for the air cooled, air
5 cooled alternative compared to a standard alternative
6 or standard design.

7 JUDGE TRIKOUROS: All right. The same
8 question for Mr. Cuchens.

9 MR. CUCHENS: Well, with regard to the
10 experience of the modifications to existing units, we
11 know of none that are modified for a high backpressure
12 turbine from a low pressure to a backpressure for a
13 triple exhaust turbine configuration.

14 We also obviously recognize that it has
15 never been done for a unit the size of AP-1000 ever
16 before.

17 In regard to the physics itself of the
18 modification, by removing rows of blades, stages if
19 you will, in the back end of the turbine, those blades
20 are the largest blades in the turbine, and they form
21 an integrated part of the working turbine itself. So
22 by removing those blades or stages, if you will, you
23 are removing a portion of the working turbine.

24 So, in essence, you would expect
25 performance degradation because you've just pulled two

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1 of the spark plugs out of an eight cylinder engine
2 away from it in the perspective of things.

3 So basically what I'm suggesting is that
4 you would expect by virtue of you have I won't say
5 gutted the back end, but you have obviously removed a
6 portion of the working blades of three low pressure
7 turbines now, and the consequence, the nameplate of
8 the turbine will be reduced. So now not only are you
9 reducing the net generation from the parasitic load.
10 You are also reducing the nameplate of the turbine
11 because that turbine will no longer be able to provide
12 you the same gross output as a turbine that was not
13 modified.

14 Second to that, which I wanted to point
15 out, a real important thing is the industry trends is
16 basically to currently modify their low backpressure
17 turbines to get more megawatts out of them. They
18 actually have added rows of blades, as well as
19 modified the architecture of those blades in the back
20 end of the existing turbines to kind of squeeze the
21 turnip to get more efficiency.

22 And so basically this is somewhat
23 diaposing (phonetic) to the philosophy of making
24 turbines more efficient as headed the other way.

25 JUDGE TRIKOUROS: Back to Mr. Powers, do

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1 you agree that removing those rows of blades would
2 likely have an impact on the efficiency of the turbine
3 or the nameplate rating of the turbine?

4 MR. POWERS: At the very high end -- by
5 "high end" I mean high ambient temperature range --
6 you will not get as much power out of that turbine as
7 the nameplate rating indicates, and we've looked,
8 again, at curves of the performance of this unit, the
9 peak end, yesterday.

10 I would like to say that it is an
11 exaggeration to say that if you take off the last
12 stage you are removing two cylinders of an eight
13 cylinder engine. The reason the last stage is so
14 large is because the energy in the steam at that point
15 is so low you need a very large blade diameter to
16 extract some additional energy from it. It is not
17 large because it is the primary driver on that
18 turbine.

19 But the bottom line is all of the
20 performance curves that we've looked at are assuming
21 use of high backpressure turbines, and the high
22 backpressure turbine is not some additional factor
23 that we haven't considered on the performance of this
24 unit equipped with an air cooled condenser.

25 JUDGE TRIKOUROS: And I will ask one more

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1 question in association with the question I just
2 asked. There's no experience with everything we've
3 been discussing right now; is this correct?
4 Everything we're discussing right now is purely
5 theoretical, has never been done, and there are no
6 examples we can draw upon to affirm or disaffirm what
7 we're saying?

8 MR. POWERS: No, I would disagree with
9 that. We're not talking about a field modification of
10 a turbine that's operational at this time. I think
11 this discussion is theoretical in the sense that we're
12 talking as if Vogtle 3 is operational with a standard
13 turbine, and we're going to take the last stage bucket
14 off. The high backpressure turbine would be designed
15 as a part of the original project. There are many,
16 many examples of power plants equipped with air cooled
17 condensers that are using high backpressure turbines
18 that are modifications of a standard turbine by the
19 removal of the last stage bucket.

20 JUDGE TRIKOUROS: What's the largest size
21 of the examples you're giving?

22 MR. POWERS: The largest size I'm aware of
23 are those that Mr. Cuchens was describing yesterday,
24 the Matimba unit in South Africa at just under 700
25 megawatts.

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1 JUDGE TRIKOUROS: All right. Mr. Cuchens,
2 the same basic question. Do you think there's enough
3 real world experience associated with what we're
4 discussing to have value, to have value?

5 MR. CUCHENS: No, sir, I do not agree with
6 that position that there is real world experience
7 because, number one, that turbine is a different
8 turbine. It is not a triple flow, triple exhaust, six
9 flow turbine.

10 Secondly, it is obviously not nowhere near
11 the size of a 1,200 megawatt turbine as well.

12 Second to that or I should say thirdly to
13 that, the exhaust pressure correction curves that
14 basically we have here that is being referred to would
15 not be the same for that turbine, for that modified
16 turbine as it is for the unmodified turbine. So
17 making a correlation off of that curve is if it
18 represents. The modified turbine is not, in my
19 opinion, an accurate reflection.

20 JUDGE TRIKOUROS: All right. I think I'm
21 going to go on to the next question because I'm not
22 sure we're going to extract anymore out of this
23 discussion at this point.

24 This is for Mr. Powers. Are you aware of
25 any high backpressure turbines capable of handling the

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1 8.4 million pounds per hour steam produced by the AP-
2 1000?

3 MR. POWERS: I am, and I would refer to
4 the design control document that was prepared for the
5 GE advanced nuclear plant in the context that GE is
6 saying we will provide for North Anna in the context,
7 Judge, of your comment yesterday that Dominion is no
8 longer pursuing this type of union, but we have a
9 design control document where they are saying that we
10 will provide or at least I'm not sure it's in the
11 design control document. It's definitely in the final
12 environmental impact statement, that we will provide a
13 turbine capable of of operating completely dry under
14 certain conditions and for Unit 4, we will provide an
15 exclusively dry cooled unit, and that is using a
16 triple exhaust turbine, same design that is being
17 proposed for the AP-1000.

18 And so it does not seem credible to me
19 that Toshiba Westinghouse is conceding the nuclear
20 market wherever there is a water issue to GE and its
21 competitors, that it cannot provide a turbine that can
22 operate with a dry cooling system. That just doesn't
23 seem --

24 JUDGE TRIKOUROS: Well, I want to repeat
25 the question for you because I'm not sure that you

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1 heard the whole question.

2 The question said -- well, I'm sorry. I'm
3 sorry. We're going to get to the issue I was going to
4 raise. It's not in this question.

5 The same question for Mr. Cuchens.

6 MR. CUCHENS: Yes, sir, and that was my
7 point of contention, is that the question as I
8 understood it was are there any turbines in existence
9 that are currently capable of passing the same flow of
10 the AP-1000, that being the 8,400,000 pounds, and
11 there are no current high backpressure turbines that
12 currently designed are capable of passing that much
13 steam. So the answer is no, sir.

14 MR. PIERCE: If I might add something to
15 that.

16 JUDGE TRIKOUROS: Sure.

17 MR. PIERCE: The North Anna turbine, first
18 of all, is a low pressure -- I mean low backpressure
19 turbine, and it's acknowledged in the COL document
20 that corresponds to that that they're going to see
21 performance; that they are going to have to lower the
22 actual generation at times in order to avoid turbine
23 trips and other performance problems in that domain.

24 So I don't think that you -- we're looking
25 here at a situation where you're operating not just a

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1 few hours a year, but you're operating 365 days a
2 year. I don't think that the North Anna situation
3 with their low backpressure turbine is the same as
4 what we're talking about here for this high
5 backpressure turbine.

6 JUDGE TRIKOUROS: All right. Well, that's
7 where I was going. So we're there now. So let me
8 bring it up.

9 Back to Mr. Powers. The high pressure or
10 low pressure turbine, North Anna, under conditions,
11 only under certain favorable conditions would operate
12 under 100 percent dry cooling according to the
13 documentation, and, therefore, would not be able to
14 function under dry cooling for any other conditions.
15 Therefore, the nature of the question that's being
16 asked -- and I perhaps should have added that latter
17 part -- can it handle 8.4 million pounds per hour
18 steam flow under all conditions that would be
19 associated with operation at the Vogtle site, summer,
20 winter, spring and fall.

21 What would you say to that?

22 JUDGE BOLLWERK: For record purposes, we
23 keep referring to documents. Are we talking about
24 the --

25 JUDGE TRIKOUROS: The North Anna early

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1 site permit and I believe the COL also discusses this
2 as well.

3 JUDGE BOLLWERK: Okay. So Exhibits 95 and
4 96 for Southern? Okay. Thank you.

5 MR. POWERS: I have two responses to that.
6 One is I would switch to Unit 4 at North Anna, which
7 proposes a complete dry unit, which would operate all
8 four seasons. I'm almost certain, in fact, it has to
9 be that the Unit 4 dry cooling system would be much
10 more robust than the cooling component of the North
11 Anna 3 project, just as the analysis that was done by
12 SNC at 35 degree ITD is a sufficiently robust air
13 cooled condenser that it could be employed with the
14 standard turbine; also, that the GE unit is a boiling
15 water reactor. It's an indirect air cooling system,
16 whereas this is a pressurized water reactor, which can
17 use a direct air cooled condenser.

18 But I guess my point is I'm not suggesting
19 that North Anna 3's design would be overlaid on Vogtle
20 3 for dry cooling performance. The air cooled
21 condenser we're talking about here is much more robust
22 than North Anna 3 and probably is on the same track as
23 Unit 4 would be, but my point would be if GE says they
24 can build a 1,500-plus megawatt nuclear plant that is
25 going to be completely dry cooled, Westinghouse can do

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1 the same in 1,100 megawatt plant.

2 JUDGE JACKSON: Mr. Powers, can I ask a
3 follow-up question? Has GE built a prototype? Have
4 they ever built this turbine and operated it under
5 these conditions or is this a design they're trying to
6 sell or just what?

7 MR. POWERS: The conditions for GE
8 offering to build a fully dry cooled, 1,500 megawatt
9 nuclear plant, I presume, have to do with water
10 restrictions at the site, but I did not see any
11 indication that GE was indicating there was any
12 technical impediment.

13 JUDGE JACKSON: I'm sorry. I guess I
14 didn't state my question clearly. I asked you if they
15 had built a prototype or built one of these turbines
16 and operated it under these conditions.

17 MR. POWERS: I do not think that they
18 have.

19 JUDGE JACKSON: Thank you.

20 JUDGE TRIKOUROS: Just for clarification
21 I'll ask it of either party. Has North Anna 4 come in
22 with any sort of a licensing request of any sort?

23 MR. PIERCE: No, sir. North Anna 4 has
24 not made a license request of any sort at this time,
25 and to my knowledge, the unit has not really been --

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1 there hasn't been any real design done on it either.

2 JUDGE TRIKOUROS: So, Mr. Powers, your
3 reference to North Anna 4 was basically anecdotal?

4 MR. POWERS: No, Judge. There is a
5 commitment in the final environmental impact statement
6 for the North Anna project where one of the
7 requirements of the project is that Unit 4 would be
8 built as a dry cooled unit.

9 JUDGE TRIKOUROS: Okay, but that doesn't -
10 - I understand what you're saying, but that doesn't
11 constitute an actual submittal for licensing of a unit
12 at North Anna 4. That's just probably associated with
13 cumulative issues or something along those lines?

14 MR. POWERS: No, Judge. It's more
15 significant than that. This is an NRC document that
16 is stating that as a condition of licensing North Anna
17 3, North Anna 4 must be built as a completely dry
18 cooled unit.

19 JUDGE TRIKOUROS: Oh, I understand that.
20 I understand that requirement, but there has been no -
21 - the option is you either build a dry cooling or you
22 don't build it at all, correct?

23 MR. POWERS: That's my understanding.

24 JUDGE TRIKOUROS: So right now that's
25 where we are. There has been no licensing application

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1 for North Anna 4. So I can assume that the decision
2 hasn't been finally made by Dominion to proceed with
3 North Anna 4 as a dry cooling plant.

4 MR. POWERS: Is that a question, Judge?

5 JUDGE TRIKOUROS: Yes, it is a question.

6 MR. POWERS: I do not know. I will trust
7 your judgment on that. I do not know.

8 JUDGE TRIKOUROS: All right. Let's move
9 on.

10 All right. The next question is for Mr.
11 Powers. Are you aware of a high backpressure turbine
12 in use in a commercial nuclear power plant regardless
13 of the specific cooling system applied at the plant?

14 MR. POWERS: No.

15 JUDGE TRIKOUROS: Mr. Cuchens?

16 MR. CUCHENS: No.

17 JUDGE TRIKOUROS: Next question for Mr.
18 Powers. Referring to SNC000096, can you bring that
19 up? Page 2-193, 2-193.

20 The question is -- I'll read the question
21 first and then we can refer to it, the exhibit. Did
22 you make the statement on -- did you take the
23 statement on page 2-193 and 2-194 of this exhibit,
24 that dry cooling could function in cold weather and
25 for relatively short duration into account in reaching

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1 your conclusions regarding the relevance of the North
2 Anna 3 system in your testimony?

3 MR. POWERS: Yes.

4 JUDGE TRIKOUROS: That question was
5 directed to Mr. Powers. If you have a comment on
6 that, Mr. Cuchens, you could proceed.

7 MR. CUCHENS: Yes, thank you.

8 With regard to the North Anna 3 versus
9 comparison to Vogtle, obviously the North Anna 3 is
10 one-third dry and two-thirds wet, and they fully
11 intend a state that will operate wet as a function of
12 water availability, and they will only operate dry
13 when and if it's possible to do so and then only when
14 under favorable conditions which they so stipulate to
15 be very short in duration and not to be construed as a
16 norm.

17 So the inferral (phonetic) is because you
18 can operate on a partial dry system for a very short
19 duration of time, that it would be possible to operate
20 all dry at Vogtle all the time is our contention that
21 that is not a relative comparison.

22 JUDGE TRIKOUROS: Mr. Powers, do you have
23 any comment on that?

24 MR. POWERS: I do, but my point was not to
25 say, again, that you would take the North Anna 3

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1 design and simply attach it to the design of the
2 Vogtle 3 power plant. The point was that the
3 contention by SNC is that using dry cooling -- and
4 they make no -- there are no caveats associated with
5 their statement that use of dry cooling on this
6 facility would be, as you stated yesterday, Judge,
7 impossible, and that's simply not true.

8 And so the point of bringing up North Anna
9 3 was not to say that that design should be used at
10 Vogtle 3. It was to make the point that a larger
11 turbine -- excuse me -- larger reactor would require a
12 larger system is already being proposed, at times can
13 operate on dry cooling, and again, Unit 4 is committed
14 to being completely air cooled.

15 And so the point is that technologically
16 there's no impediment to employment dry cooling at
17 Vogtle 3.

18 JUDGE TRIKOUROS: Okay. I'd like to
19 correct the record. I did not say that it was
20 impossible. That was in testimony that others had
21 made.

22 MR. POWERS: Thank you, Judge.

23 JUDGE TRIKOUROS: The next question, if
24 the North Anna 3 system could only be operated as a
25 dry only system infrequently or during cold weather,

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1 how would that affect your opinion regarding the
2 viability of a totally dry system at plant Vogtle?

3 MR. POWERS: Judge, I think I will go with
4 the answer that I just gave.

5 JUDGE TRIKOUROS: Yeah. Is there any need
6 to discuss? Mr. Cuchens, do you have anything more
7 you want to say about that?

8 MR. CUCHENS: Yes, I would, Your Honor.
9 In regard to the supposition of a completely dry
10 system, which is inferred on Unit 4, there is no
11 information at all regarding the specific designs of
12 that unit. So we're in a totally presumptuous venue
13 here without knowing what ITDs, without knowing the
14 implication of performance, and so we are basically on
15 a presumptuous venue that they will do, that they can
16 do it, and they will design accordingly to circumvent
17 or to mitigate or whatever they need to do to address
18 all of the issues associated with dry cooling.

19 So I have a hard time presuming, if you
20 will, just because that North Anna says they're going
21 to that it can be done somewhere else.

22 JUDGE TRIKOUROS: All right. Let's move
23 on to the next question. Mr. Powers, what would be
24 the approximate value of the following parasitic
25 operating load and efficiency impacts?

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1 And I'm trying to break them up. (a) The
2 air condenser-cooling fan loads versus wet cooling
3 system circulating and makeup pump loads, and (b) the
4 impact on the plant heat rate or the plant energy
5 efficiency related to turbine performance.

6 MR. POWERS: Judge, this question is for
7 Vogtle 3?

8 JUDGE TRIKOUROS: I'm sorry?

9 MR. POWERS: This is for Vogtle 3?

10 JUDGE TRIKOUROS: This is for Vogtle 3 and
11 4 using a dry cooling system.

12 MR. POWERS: I'll just use one of those
13 for the example. Since we did walk through this
14 example yesterday, my estimate -- and would you like
15 me to go through that example?

16 JUDGE TRIKOUROS: Yes, absolutely, and
17 elaborate on it if you can.

18 MR. POWERS: Good. Well, one introductory
19 comment is responding to Mr. Cuchens on the complete
20 lack of design for the Unit 4 at North Anna. We do
21 not need an all dry cooled design for North Anna 4
22 because we have an excellent state-of-the-art design
23 for Vogtle 3, which is in this revised report that SNC
24 did.

25 I have no complaint with the design that

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1 they put in, and I'll go right to it because going to
2 the report, which I think is SNCR00024, page 22, we
3 start --

4 JUDGE TRIKOUROS: Let's get it up on the
5 screen. Twenty-two, page 22.

6 MR. POWERS: And on this page, this is
7 fine. As you go through that table, halfway down the
8 line items is total ACC fan power, and that is shown
9 as 28,915 kilowatts. So we just round that off to 29,
10 29 megawatts, and go to page -- go to page 6 of this
11 document, and it looks like at page 7, right there.

12 Okay. Last line item, total tower fan
13 power, and again, this is for the tech says a
14 mechanical draft tower, and it indicates that the fans
15 for these 48 cells require a little over seven. It's
16 rounded off to seven megawatts, and also the first
17 line item shows that the cooling tower flow is 600,000
18 gallons per minute.

19 And so this information, and then let's go
20 to one of the Joint Intervenor's exhibits, which is my
21 2005 paper. That is -- that's a good question. I
22 believe it's 33, and on this I think page 2 or 3, page
23 3. Okay, page 3, top of page 3.

24 The cooling tower consisting of 12 cells
25 and a cooling water circulation rate of 250,000

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1 gallons per minute. So this is the 250,000 gallons
2 per minute, and then go to page 10. Okay. Page 10,
3 right there, what this is is a comparison of the
4 parasitic loads of this 530 megawatt coal plant with
5 that wet tower that we just looked at, and a 40 degree
6 F. ITD ACC, and it just indicates what the different
7 parasitic loads are.

8 In this case, if you go down about midway
9 through on the wet tower base case column, you see the
10 load for the condenser circulating pump is a little
11 over five megawatts. Okay, and that five megawatt
12 load is two things. It is the circulating water pumps
13 have to move 250,000 gallons a minute through the
14 surface condenser. Typically a surface condenser
15 would have -- it's a bundle of many, many small
16 diameter tubes, typically has a pressure drop or
17 pressure loss of 20 to 25 head of hydraulic head. In
18 using a wet cooling tower, you send it through the
19 surface condenser, and then you've got to run it up
20 the cooling tower, which is going to add another 20 to
21 25 feet of hydraulic head.

22 So you've got to move 250,000 gallons a
23 minute over 50 feet of hydraulic head, and that's
24 where the five megawatts of parasitic load comes from.

25 Just to keep it simple, 600,000 gallons per minute,

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1 which is the Vogtle 3 cooling tower circulation rate,
2 over this circulation rate of 250,000 gallons a minute
3 is about 2.4, and 2.4 times five is 12. So we're at
4 12 megawatts approximately. Our circulating pump,
5 parasitic load, about 12 megawatts for Vogtle 3.
6 Twelve plus seven, 19 megawatts from these two
7 parasitic loads for a wet cooled or wet tower
8 mechanical draft Vogtle 3 versus 28.9, 29 megawatts
9 for a 35 degree ITD air cooled condenser at Vogtle 3.

10 So there we've got a delta of ten
11 megawatts in parasitic load. If we were using a 40
12 degree F. ITD, as I used in this paper, we would have
13 a smaller delta because we wouldn't have as many fans
14 operating on that air cooled condenser. We wouldn't
15 have as many cells. That's the logic.

16 JUDGE JACKSON: Mr. Powers, is this a
17 natural draft wet tower in this example you're showing
18 us?

19 MR. POWERS: No, this is a mechanical
20 draft.

21 JUDGE JACKSON: This is a mechanical
22 draft. Thank you.

23 JUDGE TRIKOUROS: Tripling the volumetric
24 flow rate would result in tripling the pump motor
25 horsepower?

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1 MR. POWERS: Correct. You're talking
2 about the liquid running the -- three times as much
3 liquid through the same hydraulic head would increase
4 the pump horsepower by a factor of three, correct.

5 JUDGE TRIKOUROS: Is there anything more
6 that you want to?

7 MR. POWERS: I do want to make one point.
8 Judge, you brought up the point of I'm comparing a
9 mechanical cooling tower to a mechanical air cooled
10 condenser. If we were going to compare a natural
11 draft wet tower, I would want to compare it to a
12 natural draft air cooled condenser. I wouldn't want
13 in a comparison to give the advantage of natural draft
14 to the wet cooled system and not give that same
15 advantage to the air cooled system because the natural
16 draft air cooled system is just as viable as the
17 forced draft or mechanical draft.

18 JUDGE JACKSON: Mr. Powers, does the AP-
19 1000 standard design have a natural draft cooling
20 tower associated with it? Is that what's being
21 proposed for Units 3 and 4?

22 MR. POWERS: The AP-1000 design does not
23 specify the type of cooling tower.

24 JUDGE JACKSON: I'll rephrase. To your
25 understanding are they proposing to use natural draft

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1 cooling towers for Units 3 and 4?

2 MR. POWERS: In a very tentative way. The
3 revised report indicates that it shows a natural draft
4 tower, but it makes clear that it could be either
5 tower, either type of wet cooled configuration.

6 JUDGE TRIKOUROS: All right. The same
7 question for Mr. Cuchens.

8 MR. CUCHENS: Yes, sir. Thank you.

9 I would like to do the summer -- follow
10 through with regard to the analysis, if I may. First
11 off, starting with I think it's Exhibit No. -- I think
12 it was the same one that Mr. Powers alluded to --
13 SNC000024, page 14.

14 JUDGE TRIKOUROS: Did you say page 4?

15 MR. CUCHENS: Fourteen.

16 JUDGE TRIKOUROS: Oh, 14. Sorry.

17 MR. CUCHENS: I'm sorry, Your Honor. That
18 is not the page 14 of my SNC000024.

19 First off, I would like to express that
20 the version of Mr. Powers' copy of my feasibility
21 study is not -- that was not in his report as an
22 exhibit is not the current version that is on file,
23 and if you're pulling up his version of it, it won't
24 be the same page as mine. So let's see if I can
25 figure out.

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1 JUDGE TRIKOUROS: Take your time. Take
2 your time.

3 MR. PIERCE: If you can go to the next
4 page, I think the next page is what we're talking
5 about right there.

6 MR. CUCHENS: There it is. Maybe the
7 title page, but the numbered page 14. Okay. If you
8 could scroll further to that diagram, please, sir,
9 thank you.

10 Basically what I'm showing here is a
11 representation of Westinghouse's characteristic curve
12 for the turbine. This is kind of basically what we
13 call an exhaust pressure correction curve from which
14 they guarantee their performance off of, and basically
15 what I've depicted is two things. I've depicted the
16 backpressure for the proposed standard AP-1000 with
17 the surface condenser, that being 2.92 inches of
18 backpressure at 1193 megawatts approximately, and then
19 I'm showing the comparison to the 4.5 inches air
20 cooled condenser backpressure of 1139, which honestly
21 translates to a difference in megawatts of roughly 20
22 -- excuse me -- 55 megawatts. Excuse me. That's
23 correct, and I'm rounding off obviously, but that
24 basically -- my whole point of this FRR is to
25 basically show you that this is not a guess. This is

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1 not a model thing. This is based on manufactured
2 data, that if I actually go from 2.92 to 4.5, that my
3 turbine degradation according to the manufacturer is
4 going to be roughly 50 megawatts.

5 And if you would continue on to the very
6 last page of that, and this, Your Honor, is basically
7 where we do a comprehensive comparison of all the
8 systems basically in a comparison to what we are
9 proposing, that being in our perspective we are
10 proposing to utilize a wet natural draft cooling
11 tower.

12 And I see no reason why if you were
13 considering alternative technologies, why it would not
14 be fair to compare any one of these, that being, you
15 know, if you compare a natural draft to a mechanical
16 draft, to an air cooled 2.92, which obviously is
17 outside the realm of ITDs, to what Mr. Powers
18 considered as a prudent design for the 4.5 with an ITD
19 of 35.

20 So we basically are presenting a
21 comparison of the technologies and alternatives that
22 would be compared for the potential for the Vogtle
23 site and doing the parametrics here. In doing so we
24 are capturing two things, one of which I've already
25 showed you, is that we're going from 2.92 to 3.5.

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1 That translates to 55 megawatts, and the other thing
2 we're showing you is the parasitics on this thing for
3 all of these alternatives, and Mr. Powers is comparing
4 mechanical drafts, which we don't believe to be a
5 viable consideration because we're obviously
6 advocating the use of a natural draft.

7 So I'm going to predominantly stay with
8 the natural draft comparison for that reason. So then
9 going back to the natural draft line time, which is
10 the very left-most column, and I'm probably going to
11 get -- is this a pointer?

12 Basically Mr. Powers related to the pump
13 parasitic load. The pumps that we have on here are
14 basically pumping 600,000 gallons per minute through
15 the natural draft tower, and we have sized these pumps
16 to be inclusive of all the pump heads, that being the
17 static head, the pipe in friction losses as well as
18 the condenser pressure losses. So we have included a
19 very comprehensive hydraulic modeling consideration
20 for coming up with a fairly realistic pump head, and
21 it's something around 100 feet, 95 or 100 feet of pump
22 head, which is -- and for a 600,000 gallons per
23 minute, it's fairly easy to calculate the amount of
24 horsepower that you would need to do so and transfer
25 that and to translate that to kilowatts or megawatts,

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1 which we've shown here to be 13.4 megawatts for the
2 natural draft tower.

3 And I believe yesterday that Mr. Power had
4 mentioned that we had not included a consideration for
5 the makeup pump flows, makeup pump of station service
6 for parasitic power. The makeup pumps would be
7 approximately 15,000 gpm, which obviously in
8 comparison to 600,000 that's very, very small.

9 And also using the presumptuous static or
10 a total head of only 100 feet, that translates to 400
11 kilowatts. So if I add 400 kilowatts to that 13.4, I
12 end up with 13.8 as the megawatts total for the
13 natural draft tower. So now I'm moving over to and
14 comparison with our natural draft system to that of
15 the air cooled condenser, which is the most farthest
16 right column, and I've got my pointer working now,
17 right?

18 So basically on the far right column, if
19 you will, is the air cooled condenser option that's
20 designed for the 4.5, and it basically shows there,
21 again, the same thing that Mr. Powers showed
22 momentarily ago, 29 megawatts for the parasitic load,
23 that air cooled condenser. So whenever I add my 29
24 megawatts to the 55 megawatts of turbine degradation,
25 I end up with the 84 megawatts of total impact.

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1 And this basically re-addresses the
2 question Judge Jackson asked yesterday in regard to
3 you had been informed of the 70 to 80 megawatts of
4 performance implications associated with a wet versus
5 dry system. This is not a guess. Again, as I said,
6 turbine degradation was based on the manufacturer's
7 curves. Parasitic is based on this air cooled
8 condenser.

9 So now I have roughly 84 megawatts in
10 comparison to the 13.8 inclusive for the natural draft
11 towers.

12 JUDGE TRIKOUROS: If you were to impose a
13 high backpressure turbine on this, would it be closer
14 to the 28 megawatts or the 45 megawatts or 46
15 megawatts?

16 MR. CUCHENS: If I were to -- number one,
17 I don't have a high backpressure turbine that I can
18 pull a --

19 JUDGE BOLLWERK: Just one second. Hold
20 on.

21 Okay. Go ahead. Sorry.

22 MR. CUCHENS: First off, since I don't
23 have an exhaust pressure correction curve for that
24 turbine, I can't actually give you an accurate answer
25 about what that performance would be for it, but I can

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1 say, based on my previous statement, that that curve
2 would be different and I would have an additional
3 performance line I needed to add to this table if I
4 were to have a high backpressure curve because, as you
5 recall, I basically said that the nameplate would be
6 less now so that the growth is going to be less; the
7 net is going to be less.

8 So I have an additional performance
9 consideration by going to the high backpressure
10 turbine.

11 JUDGE TRIKOUROS: So what you're saying is
12 that with the high backpressure turbine, the total
13 number would increase.

14 MR. CUCHENS: That's correct, the total,
15 the total performance.

16 JUDGE TRIKOUROS: Are you done?

17 MR. CUCHENS: Yes, sir. Thank you.

18 MR. POWERS: Could I ask?

19 JUDGE TRIKOUROS: Mr. Powers, do you want
20 to comment on all of this?

21 MR. POWERS: I do, Judge. First of all, I
22 think this is a completely unfair comparison when the
23 SNC says they want to build a natural draft tower.
24 the only thing we're missing from this chart is a
25 natural draft air cooled unit. SNC spends a lot of

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1 time evaluating the dozen or so natural draft air
2 cooled units around the world and identifies the
3 largest is 700 megawatts, the same size as the largest
4 air cooled condenser.

5 But we're missing a column here, and what
6 if we add that column? If we add that column, the
7 parasitic load advantage goes to the air cooled
8 condenser. Why? Because this 29 megawatts of fan
9 load is gone because the natural draft has taken care
10 of that. So instead of there being a disadvantage,
11 what you're showing here to an air cooled condenser
12 with a natural draft air cooled system, the
13 disadvantages now with the wet natural draft system
14 because you've got 13 megawatts of pump power that you
15 don't need with the air cooled system.

16 Another point is that this is a design
17 point calculation. When SNC is showing a 54 megawatt
18 impact on generation, that is at 95 degrees
19 Fahrenheit. That's the design point. We take that 54
20 megawatts and we subtract 13 because we don't have a
21 pump load on our natural draft air cooled system. At
22 our peak load 95 degree set point, natural draft air
23 cooled system, we get a four percent penalty on
24 performance at the peak design point.

25 I agree with that. It would be about four

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1 percent. You average it out over the course of a
2 year, and it might be two percent. The quibble I have
3 with this, and I disagree with the idea that at peak
4 load with a high backpressure turbine we're going to
5 see some indeterminate but significant performance
6 loss. This performance output that is shown here is
7 consistent with my experience on air cooled condenser
8 performance.

9 And so with a complete table, you would
10 have a complete picture. We don't have a complete
11 table.

12 JUDGE TRIKOUROS: But the biggest impact
13 would be about what, 28 megawatts? Would that be sort
14 of a bounding way to approach it, to just take away
15 that 28 megawatts?

16 MR. POWERS: Yes.

17 JUDGE JACKSON: Can I ask Mr. Cuchens a
18 question? I had the impression that what was being
19 proposed in this ESP was a natural draft cooling tower
20 system. To your understanding, has that been the
21 intent for the proposed Units 3 and 4?

22 MR. CUCHENS: Yes, sir.

23 JUDGE JACKSON: If these units were
24 proposing a natural draft system, I would have thought
25 that since that's the departure point at trying to

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1 look at alternatives, that, Mr. Powers, you would have
2 used that as your comparison basis. I guess my
3 question is why did you use the mechanical draft.

4 MR. POWERS: I used the same approach that
5 -- I'm responding to SNC. SNC identifies, and I'd
6 like to go to the same exhibit, that on page -- this
7 is 00024. I guess it's the same one we're on now. If
8 you go to page 4 of this exhibit, page 4 of the
9 exhibit, last paragraph, Figure 1 shows a schematic of
10 the turbine and steam surface condenser configuration
11 for a standard AP-1000 unit. The unit is depicted
12 with a natural draft cooling tower, though the
13 standard design per -- allows either a natural draft
14 or mechanical draft wet tower.

15 Then SNC launches into a detailed
16 evaluation of two mechanical systems, and so --

17 JUDGE JACKSON: Mr. Power, was this, to
18 your knowledge, a study of alternatives, this
19 particular document that you're referring to, or is
20 this the base document that defined what SNC was
21 submitting in the ESP that we are adjudicating here?

22 MR. POWERS: Judge, could you repeat the
23 question?

24 JUDGE JACKSON: My question is this was a
25 study you're referring to of alternatives; isn't it?

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1 MR. POWERS: This is a study, yes, that
2 SNC proposed or prepared.

3 JUDGE JACKSON: But we're here because of
4 an early site permit application for a system, and did
5 that system propose a natural draft cooling approach?

6 MR. POWERS: My understanding is that
7 their tentative approach is a natural draft. That
8 particular system may have proposed that, Judge. I
9 can't --

10 JUDGE JACKSON: I would be interested to
11 see in their application where it was tentative about
12 the natural draft.

13 MR. POWERS: I apologize, Judge. I can't
14 say with certainty if that application says that or
15 not.

16 JUDGE JACKSON: Okay. So you are really
17 looking then at this tradeoff study and because they
18 had a mechanical draft, then you went that direction.

19 Is that your testimony?

20 MR. POWERS: Judge, I had to respond to
21 their detailed analysis of that air cooled condenser
22 system.

23 JUDGE JACKSON: But they also had a
24 natural draft. I saw a column there that had natural
25 draft information, but what you were testifying about

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1 yesterday was the mechanical draft.

2 MR. POWERS: In my original testimony I
3 did provide information on the utilization of a
4 natural draft air cooled system, and ultimately in
5 their most recent evaluation, SNC does do some
6 investigation of that. The evaluation of the
7 performance of the natural draft versus the mechanical
8 draft is at least in its most basic relatively
9 straightforward in that the reason for the natural
10 draft is to eliminate the fans.

11 In this case what I'm saying is all we
12 really need here is another column. There's no
13 extensive evaluation necessary. In fact, I think I
14 just provided in my statements all the information
15 needed to provide that column.

16 JUDGE JACKSON: Yesterday you testified
17 about maintenance issues, and I was asking about
18 maintenance. Did you testify that you would have a
19 lot of fans in the system that would be in a wet,
20 corrosive environment and, therefore, going to this
21 type of system would involve some extra maintenance?
22 Do you recall that testimony yesterday?

23 MR. POWERS: I do, Judge.

24 JUDGE JACKSON: If this is a natural draft
25 system, is it going to have a lot of large fans in a

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1 moist environment where it is corrosive and lead to
2 maintenance issues?

3 MR. POWERS: No.

4 JUDGE JACKSON: If you add a lot of fan
5 units in an air cooled system, these units all have
6 electric motors; is that right?

7 MR. POWERS: That is correct.

8 JUDGE JACKSON: Do they have gear trains?

9 MR. POWERS: Yes.

10 JUDGE JACKSON: Do these gear trains need
11 to be lubricated?

12 MR. POWERS: Periodically.

13 JUDGE JACKSON: Do they have seals and
14 bearings, these systems?

15 MR. POWERS: Yes.

16 JUDGE JACKSON: Do these bearings and
17 seals ever fail?

18 MR. POWERS: On occasion.

19 JUDGE JACKSON: Do you need a maintenance
20 program to go along with installing and operating such
21 a system as this?

22 MR. POWERS: It does require a preventive
23 maintenance program.

24 JUDGE JACKSON: Okay. Thank you very
25 much.

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1 JUDGE TRIKOUROS: So you're adding a
2 column for an indirect air cooled system basically.

3 MR. POWERS: Yes.

4 JUDGE TRIKOUROS: Mr. Cuchens, how would
5 you respond to that?

6 MR. CUCHENS: Your Honor, I could not so
7 easily conclude that the extra column with the
8 information that Mr. Powers has provided is all
9 encompassing of an equitable comparison.

10 Second to that, it was my understanding
11 that Westinghouse and GE all are advocating the
12 standard concepts of their plants allowing the end
13 user and the site specific to determine the viability,
14 feasibility of what type of cooling system to pursue
15 according to their individual site specific.

16 And I draw to that that North Anna
17 obviously has opted to consider a wet-dry or hybrid
18 type cooling system encompassing both. So if they are
19 allowed to consider the wet-dry system without
20 consideration of the remaining systems, if you will, I
21 would think that obviously any other site applicant,
22 not just Southern Nuclear, would also have the
23 options of looking at the feasibility of technologies,
24 and that's basically what we're doing.

25 But as far as adding another column and

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1 answering that specific, first off, that particular
2 system would be a much higher capital cost than that
3 of a natural draft tower. So just comparing it from
4 the standpoint of earning a parasitic cost is not,
5 there again, a relative comparison. You have to have
6 half those dollars as well.

7 So during that parametrics is not in the
8 realm of the study obviously, and I could not conclude
9 from Mr. Powers' information that it would still be
10 the best alternative, feasible alternative.

11 JUDGE TRIKOUROS: Mr. Powers, do you want
12 to comment on that?

13 MR. POWERS: My only comment, Judge, is to
14 reiterate that if the Applicant is leaning or
15 committed to a natural draft system, they should have
16 done an evaluation of a natural draft air cooled
17 system.

18 JUDGE TRIKOUROS: I mean, one could argue
19 that that's apples and oranges, but let me ask you.
20 But I do think the data is valuable to have.

21 What is the experience with indirect air
22 cooled systems? All the plants you've been discussing
23 in this testimony that you've given, I believe, have
24 been direct.

25 MR. POWERS: Yes, Judge. The SNC did

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1 prepare a pretty exhaustive review of the world's
2 natural draft indirect air cooled systems, and it is
3 in -- let me see if I can find the number -- and I
4 commend SNC on this. This is the best evaluation I've
5 seen to date on natural draft indirect air cooled
6 systems, and it is SNC000057. It lists 22 units
7 around the world that are equipped with natural draft
8 indirect air cooled systems.

9 JUDGE TRIKOUROS: Mr. Cuchens, did you
10 want to comment on that?

11 MR. CUCHENS: Yes, sir. And we recognize
12 this technology, but in visiting the site with the
13 largest -- and I'm going to digress and, first off,
14 answer your question. The question was what is the
15 largest indirect air cooled system that we know of,
16 and that, I believe, is the Kendal station, and there,
17 again, in South Africa, there, again, close to 660 or
18 700 megawatts, something of that nature, the point
19 being that there is no 1100 or 1500 megawatts indirect
20 cooled system to compare in existence again.

21 In addition to that, the modifications
22 associated with the indirect system, as I basically
23 testified yesterday, that system is using a glycol
24 recirculating cooling media within the indirect
25 cooling systems. So it in itself is a completely

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1 different technology, and it still has the same ITD
2 issues, if you will, as that of an ACC since it is dry
3 obviously.

4 JUDGE TRIKOUROS: By the way, the reason
5 that I said there was an apples and oranges is that it
6 doesn't -- you can comment on this, Mr. Powers -- it
7 doesn't follow that if you were to decide to put a wet
8 cooling system in a plant, that if you went to an air
9 cooled system, that that would guarantee that you
10 would put, you know, a natural draft cooling tower
11 air cooled system. I don't think that would follow.
12 There wouldn't be any direct link there. It would be
13 a totally different evaluation, I would imagine, but
14 again, I'm not an expert in balance of plant system
15 design.

16 MR. POWERS: The issue that I have with
17 this approach is if in your analysis you say we're
18 going to go with a natural draft wet system, you
19 eliminate the fan load on your wet system. Then you
20 compare to a mechanically -- a force draft mechanical
21 air cooled condenser. The only parasitic load is the
22 fans. You've just done -- you've extended to the
23 maximum the parasitic load delta between those
24 systems, and so that to me is if you say you're
25 committed to going with a natural draft system, that's

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1 fine. Run your comparison.

2 In fact, make it a complete one. Do
3 mechanical draft wet, natural draft wet, mechanical
4 draft dry, natural draft dry. I have no problem with
5 that. I have a problem with exaggerating that
6 parasitic load delta by going with natural draft for
7 the system you want and mechanical for the system you
8 don't want.

9 JUDGE TRIKOUROS: Good, and that
10 information is now in the record.

11 MR. POWERS: Judge, one final comment.
12 But there is no written record of the performance of
13 that natural draft air cooled system in the record,
14 other than the comments that we've made during this
15 debate.

16 JUDGE TRIKOUROS: Right, and that's in the
17 transcript. It is on the record.

18 MR. POWERS: Yes.

19 MR. PIERCE: Your Honor, one final comment
20 on SNC24. It looks at the cooling system exclusively,
21 and what I mean by that is if you start looking at a
22 dry cooling system, high backpressure turbine, you
23 really need to start looking at the cost of the
24 backpressure turbine and what the impact is on cost
25 with that design, the cost of the schedule impact with

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1 NRC review, the redesign of the plant.

2 I mean, there's a number of things that if
3 you start looking beyond the cooling system that could
4 be impacted as well in terms of overall cost.

5 JUDGE TRIKOUROS: We understand that
6 issue.

7 The next question, Mr. Powers, again: are
8 you aware of any other operating and maintenance cost
9 differences between dry and wet cooling systems?

10 We've talked about parasitic fan loads.
11 We've talked about heat rate effects. Are there any
12 others that you know of?

13 MR. POWERS: The special operations and
14 maintenance issues related to either technology?

15 JUDGE TRIKOUROS: I'm referring now to
16 cost issues.

17 MR. POWERS: A cost issue in -- normally
18 for an air or -- excuse me -- a mechanical wet cooling
19 tower, on a regulatively routine basis there is a
20 requirement to get in and do cleaning and do fan
21 maintenance. I mean, a classic example of this is
22 what happened at Vermont Yankee in 2007 when part of
23 the cooling tower collapsed due to lack of maintenance
24 right at the summer peak.

25 And so I am aware that one of the issues

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1 that does not come into play with an air cooled
2 condenser is getting in there and doing regular
3 routine maintenance on the cooling tower, which if you
4 don't do it can result in a catastrophic reliability
5 issue.

6 JUDGE TRIKOUROS: All right, but
7 fundamentally the costs we've discussed and the
8 testimony, in the last question's testimony are the
9 major cost factor differences between the two
10 technologies. Would you agree with that?

11 MR. POWERS: This is in the operations and
12 maintenance realm?

13 JUDGE TRIKOUROS: No. What I'm saying is
14 if I were looking -- we're trying to get testimony to
15 evaluate the cost differences between two
16 technologies. We focused in the last question on
17 parasitic fan loads and heat rate penalties, and I'm
18 asking is there anything else we should be focusing on
19 or is it that we by addressing those two we've
20 addressed the major cost factors?

21 And again, I'm not talking about capital
22 cost right now.

23 MR. POWERS: I see. Your question is
24 about operating impacts.

25 JUDGE TRIKOUROS: Right.

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1 MR. POWERS: The two major categories are
2 the efficiency penalty associated with incremental
3 increases in backpressure and parasitic load. I would
4 agree that those are the two categories.

5 JUDGE TRIKOUROS: Mr. Cuchens?

6 MR. CUCHENS: Your Honor, I basically
7 alluded to yesterday and in previous testimonies as
8 well that there would be considerable maintenance
9 costs associated with mechanicals, motors and the
10 like. This has been our experience for mechanical
11 draft towers. These cooling towers have similar
12 fans, motors, gear boxes.

13 Different environments, yes, but
14 mechanicals, they're similar, very similar in nature,
15 and as such, we have a very high maintenance record
16 incidence associated with our cooling towers. We have
17 hundreds and hundreds of fans and motors and gear
18 boxes that are basically a paramount issue with regard
19 to our maintenance cost on the Southern Electric
20 system. So we're basing our conclusion that the
21 hundreds of motors and fans and gear boxes on an ACC
22 would also be significant, I think, as a relative
23 comparison since the mechanical components themselves
24 are relatively comparable.

25 Secondly to that, we know from experience

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1 of the existing ACCs that they have to spend a
2 considerable amount of time, energies and monies
3 trying to keep them clean from filing because of the
4 dust and associated particularly in the atmosphere
5 because there are no air filters on these things the
6 way there are on our air conditioners.

7 So, you know, if you take off your air
8 filter on your air conditioner, it goes south in a
9 hand basket because obviously it follows the thin
10 tubes. The same applies in the real world. So they
11 spend a lot of maintenance dollars maintaining these.

12 Secondly to that, there are other issues,
13 such as air in leakage. You are all the time chasing
14 leaks from preventing -- now we have hundreds and
15 hundreds of tubes, if not thousands of feet of length
16 of pipe, and so basically trying to keep from leaking
17 and then when everyone happens, you have to chase it
18 down and hunt it because it then very accurately
19 impedes performance if you don't.

20 So you have to keep air in leakage and any
21 other leakages to a minimum for all this big, big,
22 massive system. The hope on that epilogue is to say
23 that we anticipate maintenance costs and associated
24 manpower to be increasing with an ACC system in
25 comparison to the natural draft system.

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1 JUDGE JACKSON: Could you address some of
2 the maintenance issues in a natural draft system then?

3 MR. CUCHENS: Yes.

4 JUDGE JACKSON: What are you faced with
5 there?

6 MR. CUCHENS: Yes, sir. Since we have
7 natural draft towers, we are very familiar with, and
8 our philosophies there again are with a natural draft
9 tower we are designing obviously a concrete natural
10 draft tower, and our cost basically with regard to the
11 maintenance and, well, I say operations and
12 maintenance because your question was both operations
13 and maintenance related. We have chemical related
14 costs, but we basically here are including biosize for
15 control of our filing and the likeness of that in both
16 the cooling towers.

17 But as far as actual manpower and
18 mechanicals, the only particular components that we
19 basically contend with in that regard are the circling
20 water pumps in which we perform periodic PMs for
21 maintaining bearings and seals and associated things.

22 Those are very rarely minimal and they're only
23 performed on a time tenured periodic basis. So those
24 are not consistently day in and day out type of
25 maintenance, and they are very minimal at that.

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1 JUDGE JACKSON: Are there cleaning issues
2 with the tower?

3 MR. CUCHENS: No, sir, there are not
4 cleaning issues. As far as the actual tower and as
5 far as the heat transfer media, no, sir, there are
6 not. There are not cleaning issues.

7 As regards to the removal of silt and
8 siltation that accumulates in the basin, that again is
9 done on a periodic basis because outages are obviously
10 -- it's a function on nuclear plants. They're a
11 function of refueling outages.

12 JUDGE TRIKOUROS: All right. So what
13 you're saying is that with the clear understanding
14 that there's significant maintenance and operating
15 costs associated with both of these, that in your
16 opinion the dry cooling system would cost more in
17 terms of operations maintenance than the wet cooling
18 system.

19 MR. CUCHENS: Yes, sir.

20 JUDGE TRIKOUROS: I'd like to let Mr.
21 Powers have a chance at that as well.

22 MR. POWERS: Thank you, Judge.

23 What I heard Mr. Cuchens said, it does
24 sound like a good reason to move away from wet,
25 mechanical cooling towers. It sounds like Southern

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1 Company has a lot of operations and maintenance issues
2 with wet cooling tower fans. I'm not aware of
3 Southern Company operating any air cooled condensers,
4 and what I hear about tube leaks and air cooled
5 condensers and rapid fouling of air cooled condensers
6 is complete hearsay, unless Mr. Cuchens can provide
7 documentation of Southern Company's direct experience
8 with air cooled condensers, complete hearsay that does
9 not gibe at all with my experience with air cooled
10 condensers.

11 And the other issue is -- and this is an
12 important one -- air cooled condenser fans are
13 operating in clean, ambient air. They are not
14 operating in high total dissolved solids, high
15 humidity, carryover environments that wet cooling
16 towers are operated in. Operations and maintenance
17 issues and experience at Southern Company has with wet
18 cooling tower fans is not at all transferable and
19 should not be used as a strawman for the performance
20 or operations and maintenance expectations of air
21 cooled condenser fans.

22 JUDGE TRIKOUROS: Mr. Cuchens, I'll let
23 you respond to that before we move on if you wish.

24 MR. CUCHENS: Yes, sir. With regard to
25 experience, obviously two things. First off is when I

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1 say our experience, our experience basically includes
2 our associations with our fellow utilities within the
3 United States that do have operating experience. I'm
4 referring to that.

5 But not only that, I'm also referring to a
6 particulars of our what I would say our Apex Project
7 which was at that time SEI, which is now obviously
8 divested from the Southern Company, but the Southern
9 Company Engineering, that being my group, basically
10 conceptualized that entire dry cooling system as well
11 as others that we have looked at at South Africa and
12 other ones, but the point is that the Apex Project in
13 Arizona, yeah, basically was one that my particular
14 group basically conceptualized and has a high
15 backpressure turbine, and it has a high ITD, and
16 basically we have operating experience with that as
17 well. It basically is complementary with the rest of
18 the United States.

19 JUDGE TRIKOUROS: All right. Thank you.

20 The next question for Mr. Powers. Are you
21 aware of any interface problems with the AP-1000
22 primary system that may be introduced by the use of a
23 dry cooling system?

24 MR. POWERS: The steam turbine is part of
25 the secondary system, and I am not aware of any ripple

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1 effect that would -- I say I'm not aware of it. I
2 haven't studied it -- I'm not aware of any route or
3 ripple effect that could impact that primary loop.

4 JUDGE TRIKOUROS: But you would appreciate
5 that when you're connecting a secondary system to a
6 large nuclear reactor that that is an important
7 consideration, that it should not in any way impact
8 the operation of the primary side of the plant in an
9 adverse manner.

10 MR. POWERS: I can see no way that it
11 would adversely impact the primary use of air cooling
12 on this system.

13 JUDGE TRIKOUROS: All right. Mr. Cuchens,
14 do you want to comment on that at all?

15 MR. CUCHENS: If I could beg Your Honor to
16 repeat the question since it's --

17 JUDGE TRIKOUROS: I'll read it directly.
18 Are you aware of any interface problems with the AP-
19 1000 primary system that may be introduced by the use
20 of a dry cooling system?

21 MR. CUCHENS: We've kind of alluded to
22 interface issues associated with that, and Mr. Powers
23 did state that I had also in my testimony that we
24 could interface with the turbine itself. Immediately
25 below the turbine if you removed the steam surface

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1 condensers, then we could physically junction large
2 steam ducts.

3 However, that interface and the
4 complications with the other interfaces go away from
5 that point because I am contradicting the position
6 that there are not problems associated with connecting
7 the secondary system from there on.

8 Yes, we could relocate feedwater heaters
9 as implied, but the feedwater heater's location -- and
10 there's actually more detail than what I depicted in
11 my artist pictorial because there's a lot more detail
12 than done on the PA-1000 than maybe is perceived, and
13 for that reason and having that awareness in details
14 that all of the feedwater heaters are there for the
15 specific reasons and all the other associated
16 equipment, and so the interface, the answer is yes,
17 there are problems that would have to be dealt with
18 with the secondary interface.

19 MR. PIERCE: If I might add something to
20 that, I know that you are primarily talking about the
21 primary side systems, and you know, the bottom line is
22 it would have to be analyzed. There are some
23 interface issues on the primary side dealing with, a
24 gain, we talked about yesterday some of the turbine
25 trips and transients in Chapter 15, full load reject,

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1 missiles issues that would have be looked at. So
2 there are some things that would need to be looked at
3 that could affect the primary side if we went to a dry
4 cooling system.

5 JUDGE TRIKOUROS: And I will go back to
6 Mr. Powers, as well. Do you see the introduction of
7 any new transients or accidents associated with a dry
8 cooling system?

9 MR. POWERS: No.

10 JUDGE TRIKOUROS: Are there any problems
11 with licenseability associated with a dry cooling
12 system?

13 And I understand there would have to be a
14 licensing review done, but do you see anything
15 glaring?

16 MR. POWERS: I presume given that the NRC
17 has already permitted at least conceptually a unit
18 that would be completely dry cooled, that there is no
19 impediment to that.

20 JUDGE TRIKOUROS: All right. Mr. Pierce
21 or Mr. Cuchens?

22 MR. PIERCE: Just as a couple of
23 responses, first of all, for North Anna the early site
24 permit doesn't indicate NRC's approval of the
25 viability of that design. It's the site suitability

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1 permit. So it doesn't really address the viability of
2 the dry cooling system.

3 With regard to the introduction of new
4 transients and accidents, conceptually, you know, off
5 the top of my head I can't really think of any new
6 accidents. Of course, some of the transients that are
7 there would have to be evaluated. There might be
8 something that I'm missing. So, again, this is
9 something that I hadn't really thought of till you
10 just mentioned it.

11 So from a licenseability point of view,
12 again, I think there would be an extensive licensing
13 review of this with the NRC, something novel and new,
14 and anything novel and new takes time to go through
15 the licensing process to address all of the issues and
16 make sure they're all addressed completely.

17 So it would take quite a bit of time to go
18 through that process.

19 JUDGE TRIKOUROS: So you would think the
20 biggest impact in licenseability on in the licensing
21 arena would be schedule?

22 MR. PIERCE: It would be schedule, both
23 looking at the environmental impacts and the --
24 because you can't forget the environmental impacts on
25 the environmental side. So it would be the

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1 environmental impacts and the safety side as well
2 issues.

3 JUDGE TRIKOUROS: Mr. Powers, do you have
4 any additional comments before we move on?

5 MR. POWERS: No, Judge.

6 JUDGE TRIKOUROS: The next question, what
7 impact do you think the dry cooling system would have
8 on the AP-1000 capacity factor?

9 Nuclear plants operate typically today in
10 the 95 percent capacity range. Do you think dry
11 cooling would have any impact on that?

12 MR. POWERS: It would have no impact on
13 the ability to maintain that capacity factor.

14 JUDGE TRIKOUROS: This is the same
15 question related to that. Can a dry cooling system's
16 maintenance be performed while the plant is on line
17 without compromising plant safety and operation?

18 MR. CUCHENS: Your Honor, it would be some
19 of this maintenance that would be available.

20 JUDGE TRIKOUROS: I'm sorry. I was asking
21 Mr. Powers at this point. I was going to come back to
22 you on the entire question in a minute.

23 MR. CUCHENS: Thank you, sir.

24 MR. POWERS: The answer is yes.
25 Individual fans can be taken off line for maintenance

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1 if necessary or for routine preventative maintenance.

2 There's no impediment for doing that with, for
3 instance, in this case it was a 204 fan, 35 degree F.
4 ITD system. Yes, taking a fan off or two fans off for
5 maintenance is completely viable.

6 JUDGE TRIKOUROS: I want to make sure you
7 understand the nature of the question. All of the
8 plants in the world we've been talking about are
9 fossil plants, and the way the nuclear plants are
10 operated in this country is there might be a two-year
11 period in which the plant is continuously on line.
12 Therefore, any problems that occur, any maintenance
13 requirements that occur on that secondary side have
14 got to be done when the plant is on line. They cannot
15 be done -- you would not take a nuclear plant off line
16 to want to do such maintenance. You could, but you
17 would not want to do that.

18 And so I want to make sure you understand
19 the circumstances that surround my question, and my
20 understanding of capacity factors for these other
21 plants are that they're significantly lower capacity
22 factors and they're smaller plants that might more
23 easily be taken off line if needed for a short time
24 and brought back on.

25 The other problem with a nuclear plant is

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1 bringing it down and bringing it back up is not an
2 easy thing to do. It takes quite a bit of time, and
3 puts quite a bit of stress on the fuel. So this is a
4 very important issue with respect to a brand new
5 technology like dry cooling when you merge it with a
6 nuclear power plant.

7 So I just wanted to make sure you
8 understood the background of my question. So do you
9 think that would be an issue there?

10 MR. POWERS: No, I do not. I would like
11 to point out that these large units, both the 700
12 megawatt South African air cooled condenser units and
13 the natural draft indirect units, have been operating
14 between 15 and 20 years. So I would not call it brand
15 new technology.

16 And all of the maintenance can be done
17 external. There are no internal moving parts. There
18 are external fans. The issue of cleaning if it does
19 come up, it's external as well. So this piece of
20 equipment would be one of the most reliable pieces of
21 equipment in the plant.

22 JUDGE JACKSON: Mr. Powers, do you know
23 the capacity factor of those plants on an average
24 year?

25 MR. POWERS: I do not, Judge.

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1 JUDGE JACKSON: You showed us a picture of
2 I believe --

3 MR. POWERS: Matimba.

4 JUDGE JACKSON: Okay, and it showed the
5 large blocks of cooling units that looked like they
6 had plumbing over them. Do you recall that from your
7 testimony yesterday?

8 And when this plant is operating, let's
9 say you had a system like this, and you were under
10 operation. Can maintenance crews, say, go into the
11 middle of one of those blocks while the rest of them
12 are all operating and do hands on maintenance?

13 MR. POWERS: Yes.

14 JUDGE JACKSON: Okay, and that's a common
15 way of maintaining them then?

16 MR. POWERS: Yes. Individual fans can be
17 shut down. They're 30 feet across. They're low speed
18 fans. It's completely routine to shut down a fan in
19 an operational block and do whatever is necessary on
20 that fan.

21 JUDGE JACKSON: Thank you.

22 JUDGE TRIKOUROS: Would there be an impact
23 of fan shutdowns on the backpressure?

24 MR. POWERS: Incrementally, but if you've
25 got a 200-plus fan system and you shut down one fan,

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1 that one fan being off line would have an almost
2 indistinguishable impact on performance.

3 JUDGE TRIKOUROS: Mr. Cuchens or Mr.
4 Pierce?

5 MR. CUCHENS: First off, you asked a
6 number of questions. I'm going to try to remember
7 these.

8 JUDGE TRIKOUROS: Should I repeat the
9 question?

10 MR. CUCHENS: No, I'm going to. If you
11 would, if I don't answer your question, Your Honor,
12 I'll ask you to repeat it, but I think I can remember
13 the questions.

14 First off, with regard to addressing the
15 issue with regard to maintenance on line, yes, I
16 concur with Mr. Powers that you would have to address
17 maintenance on line. Because of the two-year tenure
18 of refueling and because of the high probability that
19 failures of fans, motors and/or gear boxes are going
20 to occur, and obviously if left unattended then become
21 quite significant to maintaining low stability; so you
22 basically have to pursue an on line maintenance
23 program where you can, that being where you can
24 possibly attend to.

25 Obviously if you have steam leaks or any

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1 other thing, but that's a different thing, but with
2 regard to mechanicals, yes, you can isolate individual
3 fans and gear boxes and do maintenance on line. It
4 gets back to my relative question that there is a
5 considerable cost for doing that.

6 As far as the number that are off, I've
7 heard him say, well you can cycle one off or, you
8 know, it's not just a matter of planned planning.
9 It's also associated with the forced incidences of
10 failures of gear boxes when you have that many fans
11 and gear boxes. The incidences of failure in
12 association with having to do incremental fan-out as
13 well as the planned incremental outages are something
14 that's somewhat unpredictable, and there is an
15 incremental impact on performance.

16 JUDGE TRIKOUROS: Okay. Judge Jackson, do
17 you want to pursue this any further or should we move
18 on?

19 JUDGE JACKSON: I think I understand. The
20 maintenance could be performed while the system is
21 operational, and that that would not be an unusual
22 thing to do in these systems. Right.

23 JUDGE TRIKOUROS: Mr. Powers, did you want
24 to say anything more about this before we go on?

25 MR. POWERS: No, Judge.

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1 JUDGE BOLLWERK: All right. It's about
2 10:30. We've been going about an hour and a half. So
3 I think it's probably a good time to take a break at
4 this point. We do have some additional questions, and
5 why don't we take a 15-minute break.

6 Actually it's about 10:35. Have I got the
7 right time here? So why don't we come back at about
8 ten till 11?

9 (Whereupon, the foregoing matter went off the record
10 at 10:34 a.m. and went back on the record
11 at 10:52 a.m.)

12 JUDGE BOLLWERK: If we could go back on
13 the record, please. All right. We're back from our
14 break.

15 One thing I should mention is we will
16 offer the parties an opportunity, given the discussion
17 that's gone on here, if there's any other questions
18 they want us to ask, we will ask you that again when
19 we are done with what we have here at least in the
20 immediate near term. So just so you're aware of that.

21 All right. Judge Trikouros.

22 JUDGE TRIKOUROS: All right. The next
23 question starting with Mr. Powers, what is the extent
24 of modifications that would be required to the AP-1000
25 standard design to implement a dry cooling system?

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1 MR. POWERS: the major component changes
2 would be removal of the surface condenser under the
3 steam turbine and I think we did discuss this just a
4 moment ago, removal of the surface condenser,
5 relocation of the boiler feedwater heaters, obviously
6 penetrations in the turbine building wall to get
7 outside to the air cooled condenser. Those are the
8 substantive changes that I can think of.

9 JUDGE TRIKOUROS: And implied in my
10 question is are there any major structural
11 modifications that have to be made to the turbine
12 building itself to accommodate this change?

13 MR. POWERS: No, Judge. In my opinion,
14 the inclusion of openings in the turbine building wall
15 to allow those ducts access to the outside to me does
16 not constitute a major change.

17 JUDGE TRIKOUROS: All right. Is there
18 anything else you want to say about it?

19 MR. POWERS: No.

20 JUDGE TRIKOUROS: Mr. Cuchens?

21 MR. CUCHENS: Your Honor, it's my opinion
22 that we will have building structural modifications
23 just for the sole fact that the large duct size that's
24 necessary to interface underneath the turbines don't
25 coincide with the current opening spacing of the

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1 building structure, and like I say, I think that's in
2 details, somewhat in details, but I think that the
3 presumption that we can interface a 30 foot diameter
4 or 20 foot diameter or any large duct without hitting
5 any structural steel of a building is not relevant.

6 MR. PIERCE: Just one other comment as
7 well. We've already talked about some of the design
8 changes that relate to the analyses, and I think you
9 were just talking about the physical changes to the
10 plant; is that correct?

11 JUDGE TRIKOUROS: Yes.

12 MR. PIERCE: And in that regard I'll just
13 mention as well that the turbine building for the AP-
14 1000 is fairly what I'd call -- I guess the best way
15 to say it would be finely tuned, and so you're making
16 a rather dramatic change to the building that's
17 probably going to mean moving some systems and
18 components to other buildings and maybe even creating
19 an expansion of the turbine building itself.

20 So there could be some fairly substantial
21 modifications to the turbine building to accommodate
22 such a dry cooling system.

23 JUDGE TRIKOUROS: Are there any safety
24 grade switch gear in the turbine building? There are
25 in some plants, but I suspect there aren't in the AP-

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1 1000, but are you aware of any?

2 MR. PIERCE: The turbine building does not
3 have any safety related equipment now. Well, no, it
4 does not.

5 JUDGE TRIKOUROS: I'll give Mr. Powers an
6 opportunity in a moment, but high energy line breaks
7 in the turbine building, I assume they're analyzed in
8 the AP-1000 DCD. I haven't looked at it, but would
9 there be any type of a new analysis associated with a
10 break of high energy line break associated with this
11 new dry cooling arrangement?

12 And if the answer is you don't know,
13 that's fine.

14 MR. PIERCE: Well, the answer is I don't
15 know really. I'd have to give that some thought and
16 look at the DCD a little bit before I answer that.

17 JUDGE TRIKOUROS: Right. All right. Mr.
18 Powers, do you have any other comment on this, on any
19 of this question?

20 MR. POWERS: No, Judge.

21 JUDGE TRIKOUROS: All right. I'm going to
22 ask a question that I've basically asked before and
23 maybe the answer is that we're done. What would be
24 required to license the system with the NRC?

25 And I'm asking it again in light of the

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1 structural question. Has anything changed with regard
2 to testimony regarding that or can we say we've
3 covered that adequately?

4 MR. PIERCE: Well, we can say I think I
5 covered it adequately yesterday, just to again broadly
6 speak about what we talked about yesterday, there
7 would be a change to the ITAACs in Tier 1 which would
8 require an exemption. There would be some of the
9 analyses in the safety related side would need to be
10 looked at, and there would be physical changes to the
11 plant itself as a result of that this isn't a DCD, as
12 a result of the addition of an ACC system with a high
13 backpressure turbine.

14 JUDGE TRIKOUROS: All right. Mr. Powers,
15 anything more?

16 MR. POWERS: I would repeat the comment I
17 made yesterday that when it comes to this issue of
18 structural steel and the location of the structural
19 steel, there is a lot of design flexibility in how
20 those ducts would move out of the building, and so I
21 don't think that at this point we should presume that
22 structural steel has to be moved to accommodate these
23 ducts. The ducts can be designed to accommodate the
24 structural steel if that's necessary.

25 JUDGE TRIKOUROS: Okay. Thank you very

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1 much.

2 JUDGE BOLLWERK: Okay. At this point
3 let's take a brief break, maybe ten minutes, for the
4 parties to look and see if there's anything else they
5 want us to ask, and then we'll be back at that point
6 and take any questions you have and try to finish up
7 with this panel.

8 (Whereupon, the foregoing matter went off the record
9 at 10:59 a.m. and went back on the record
10 at 11:10 a.m.)

11 JUDGE BOLLWERK: All right. Let me go
12 back on the record.

13 Let's see if anybody -- we didn't receive
14 anything? Nobody has any additional?

15 All right. We still have a few questions,
16 I think that Judge Trikouros after looking over
17 additionally wants to go through a couple of
18 questions.

19 JUDGE TRIKOUROS: Yeah. We received these
20 questions. However, they didn't fit into the format
21 that we had just went through and, therefore, I'd like
22 to just ask them separately now.

23 This is to Mr. Cuchens. In your prefiled
24 direct testimony, A-18, you talk about the -- you
25 describe abrupt daily fluctuations of the air cooled

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1 condenser to demonstrate its impracticality. Does the
2 example you give of a hot Georgia day, a 98 degree,
3 hot Georgia day combined with a sudden breeze,
4 recirculating hot air presume a standard turbine?

5 MR. CUCHENS: Yes, sir, it does. It does
6 assume a standard turbine, but it could also be, I
7 assume, a high backpressure turbine, and what I mean
8 by that, Your Honor, is that I was on both committees,
9 both the ASME committee as well as the cooling
10 technology committee that wrote the test does for this
11 particular equipment. The test codes require very
12 calm wind conditions coincident with the axis of the
13 condenser that give us the best performance so that
14 you can test this thing the way the manufacturers
15 wanted it.

16 If it's high wind conditions, the
17 manufacturers recommend that that's going to degrade
18 their performance. So they disallow you to test it
19 outside the boundaries of those test parameters. So
20 that's recognized in the industry that wind effects
21 are detrimental to the performance.

22 JUDGE TRIKOUROS: Okay. I'm just going to
23 read this. Do you have any documentation supporting
24 your statement that an air cooled condenser, assuming
25 such air cooled condenser has properly designed wind

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1 skirts, if subject to a breeze would experience such
2 severe recirculation that the air cooled condenser
3 steam condensation temperature would instantly rise
4 five degrees Fahrenheit?

5 MR. CUCHENS: I have the documentation
6 based on the trip reports to South Africa, and
7 basically it translate that their experiences before
8 any wind skirts and also based on a smaller AC
9 application, that being it has an ITD of over 40, and
10 it's not as mammoth in size, and even with that
11 installation, they experienced substantial swings and
12 lows initially as well as low trips associated with
13 sudden changes, storms approaching, sudden changes in
14 climate conditions that basically were paramount in
15 maintaining stability of the unit.

16 JUDGE TRIKOUROS: All right. If a high
17 backpressure turbine is used, would that breeze cause
18 the air cooled condensers to operate above its alarm
19 set point whether or not it had properly designed wind
20 skirts?

21 MR. CUCHENS: The first off is that
22 designing the high backpressure turbine I alluded to
23 in my previous testimony if I'm going to start with
24 designing a high backpressure turbine, I would design
25 margins into it to stay away from those alarm and trip

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1 points.

2 Secondly, I would translate the
3 modifications that South Africa has done to try to
4 mitigate the wind effects. However, the problem that
5 I'm also associating that I would basically also
6 testify to previously is because an installation of
7 this size has never been done before and no experience
8 is based on it, then we are in an era of where we've
9 not gone before with regard to the mammoth size of
10 this nature.

11 So I can't just presume that just because
12 it has been done on smaller installations that now
13 we're going to have 400-and something units translates
14 to a comparable mitigation at the Vogtle site.

15 JUDGE TRIKOUROS: The last part of this
16 first question, again, this is all referring to your
17 testimony, A-18. You say it would be virtually
18 impossible to control and/or modulate a large air
19 cooled condenser system with approximately 300 fans to
20 react to fluctuating weather influences without
21 impacting unit performance. The 4,000 megawatt
22 Matimba plant in South Africa has far more than 300
23 fans.

24 Does this impossibility conclusion rest on
25 current data or is it based on information on initial

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1 operating experience with the large South African air
2 cooled plants gathered during your trip to South
3 Africa a decade ago?

4 MR. CUCHENS: South Africa initially had
5 an automated control system that would basically
6 program to try to follow the trend or follow a trend
7 or tracking in regard to operating the fans as needed
8 to follow the weather, if you will. That was
9 unsuccessful.

10 We have experienced similar things within
11 the United States where we basically have automated
12 control systems that we think are sophisticated enough
13 to allow us to respond quickly enough and have found
14 out that they don't. And so we've done a lot of
15 situations, and this is experience on the other
16 installations that we have talked to, that they've
17 kind of taken it off automated control and put it on
18 just running all the time and by running it all the
19 time that is the safest avenue for accommodating
20 swings or changes in wind directions in current storms
21 and the like.

22 MR. SANDERS: Your Honor, I have to put on
23 the record -- this is Larry Sanders -- I've got to put
24 an objection on the record. Mr. Cuchens keeps
25 referring to details about a trip to South Africa and

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1 trip reports. None of that is in the record, and you
2 know, we haven't had an opportunity to review any of
3 those reports. It's just as Mr. Powers said, total
4 hearsay.

5 JUDGE BOLLWERK: Counsel want to respond
6 in any way?

7 MR. BLANTON: Your Honor, I'll tell you I
8 didn't know that we had documents of those trip
9 reports either, and I'm not sure that we do. So we'll
10 have to check to see what those are.

11 I'd also note that we don't have any
12 documents that the intervenors have produced regarding
13 any of Mr. Powers' experience with air cooled
14 condensers or any other kind of dry cooling that had
15 been disclosed during this hearing and proceeding.

16 So I will commit to go see what paper
17 exists regarding any South African trip, and we'll
18 produce that if we have it.

19 JUDGE BOLLWERK: All right. Anything
20 further you want to say?

21 MR. SANDERS: I think there's a
22 distinction between Mr. Powers talking about his
23 experience in a general way and Mr. Cuchens talking
24 very specifically about a trip to South Africa, trip
25 reports, things that he gleaned from that trip to

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1 South Africa. It's an entirely different situation.

2 JUDGE BOLLWERK: Well, in one sense, I
3 mean, his experience in South Africa is what he
4 experienced, just like Mr. Powers has any experience.

5 Now, to the degree he put that in a trip report and
6 it reflects something different than what he says
7 here, I suppose that's a concern for you obviously.

8 MR. SANDERS: Well, it's a concern that, I
9 think, yesterday he intimated -- I mean, I was under
10 the impression after his testimony that he went to
11 South Africa a few weeks ago or this year. Apparently
12 in his prefiled testimony this trip took place ten
13 years ago and was based on information that wasn't
14 current. So we'd like to know about that.

15 JUDGE BOLLWERK: All right. Well, I heard
16 counsel for the Applicant say that he is committing to
17 try to find that information and provide it to you.
18 Why don't you go ahead if you would, sir, and do that?

19 And if we need to talk about this further, let's do
20 so.

21 MR. SANDERS: Will that occur during this
22 hearing?

23 JUDGE BOLLWERK: I don't know how quickly
24 he can produce the information.

25 MR. BLANTON: I'll do it when I can do it,

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1 Judge. I'm sitting here.

2 MR. SANDERS: That's fine with me.

3 JUDGE BOLLWERK: All right.

4 JUDGE TRIKOUROS: All right. Mr. Powers,
5 did you want to comment at all about this question
6 with the subparts that I just asked Mr. Cuchens about
7 the ability to control under wind conditions?

8 MR. POWERS: Yes, Judge, and I do
9 appreciate what Mr. Cuchens said about this five
10 degree instantaneous shift. I think I heard him say
11 that this was before they started employing wind
12 skirts to mitigate the effect of wind, and it would be
13 good if you can clarify that, if he's talking about
14 early in the experience of these plans before they
15 develop these effective counter measures to deal with
16 this problem.

17 And the other issue about trying to
18 maintain these air cooled condensers in South Africa
19 on automatic control and finding that that was not an
20 advisable approach, and so what they did was operate
21 all of the fans continuously; well, operating all of
22 the fans continuously is a normal, common sense
23 practice. When you're anywhere near your peak loads
24 under ambient conditions it could require that.

25 And so I just want to clarify that there's

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1 no novelty to operating all of the fans on a
2 continuous basis, and that if that's what it takes to
3 avoid the kind of control issues the South Africans
4 ran into running on automatic, that's fine. Just run
5 them on -- run them.

6 JUDGE TRIKOUROS: Any other comment, Mr.
7 Cuchens?

8 MR. CUCHENS: Actually I would concur with
9 the prior statement that, yes, the normal practice is
10 to run the fans all the time. The question as I
11 understood you to basically represent is how does that
12 -- how quickly can ACC respond to swings or changes or
13 transients, and if you are running at cooler ambients,
14 and I think he has even referred to this before, if
15 you are running on cooler ambients, you could run with
16 less fans, and then whenever the ambients change, you
17 basically obviously turn more fans on.

18 The issue is the response time, and if
19 it's really, really sudden or it changes in winds or
20 ambients are sudden, then that was my response. That
21 was my answer.

22 MR. POWERS: Just a clarification, Judge,
23 is that -- but that's not the example. The example is
24 you're at 98 degrees in Augusta. You have a gust that
25 sends you up to 103 degrees. You trip your alarm, and

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1 you've got a problem. That's not a cooler temperature
2 where you're operating fewer fans than you need in an
3 energy conservation mode.

4 So I agree with Mr. Cuchens that when
5 you're in cool ambient temperatures and you don't need
6 all your fans, you want to bring some off line,
7 understandable, but this example is about getting
8 yourself into an emergency condition because you've
9 got that swing. If the swing is being caused because
10 you didn't have all your fans on, and now you're
11 turning some of them on, that's not applicable to the
12 example in the testimony.

13 MR. CUCHENS: I would still further agree
14 with Mr. Powers that if we do have all of the fans on
15 and we're in ambient conditions, that are calm and at
16 95 degrees, we are running all of the fans just to
17 keep below the trip points or alarm points. And then
18 if excursions do occur, it happens exactly as planned.

19 You basically can have a transient that drives you
20 into higher backpressures and drives you into alarm
21 and set points.

22 It is exactly because at that point you
23 have no further control or flexibility or anything.
24 You are wide open. You're cooling as much as you can.

25 So whenever you are that close to your alarms and set

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1 points, then you are vulnerable to excursions that are
2 not conducive to the optimum performance, so the bases
3 say.

4 JUDGE TRIKOUROS: All right. We'll go one
5 more round here and then we're going to end it. Mr.
6 Powers.

7 MR. POWERS: Another clarification. I
8 think, again, Mr. Cuchens is relying on early, early
9 South African experience where they did not have wind
10 skirts. That is what I heard him say, and that these
11 instantaneous five degree shifts were experienced
12 prior to the South Africans putting wind skirts on air
13 cooled condensers, which have mitigated that problem.

14 And so we have to be very careful to
15 translate early experience which we learn from and
16 correct it, and then apply it to Vogtle 3, presuming
17 that we would not use wind skirts when we know we need
18 those wind skirts to avoid exactly this problem, then
19 overlay it on a temperature that is higher than our
20 design temperature to create a scenario that gets us
21 in an alarm trip mode.

22 JUDGE TRIKOUROS: Right. I understand. I
23 don't think we need to keep going back and forth on
24 this.

25 Next question, I'm going to paraphrase

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1 this question. Mr. Powers, do you agree that the
2 standard turbine for the AP-1000 is basically the same
3 as the standard turbine for the ESBWR at North Anna?

4 MR. POWERS: The same basic turbine
5 design, yes.

6 JUDGE TRIKOUROS: Mr. Cuchens?

7 MR. CUCHENS: Yes, it is a six flow,
8 triple exhaust, condensed turbine, yes, sir.

9 JUDGE TRIKOUROS: All right. Last
10 question, and I'm going to paraphrase this as well.
11 The capital cost of the system we're discussing, the
12 dry cooling system we're discussing is on the order of
13 \$200 million or \$190 million, I guess, was in specific
14 testimony. Do you both agree that this is a small
15 fraction of the total capital cost of this plant?

16 MR. POWERS: Yes.

17 JUDGE TRIKOUROS: Mr. Pierce?

18 MR. PIERCE: From my point of view the
19 \$190 million is quite a bit, you know, is quite a bit
20 of money, and the problem you get into is that when
21 you take this 190 million, you're looking at it from a
22 pure AC cooling only issue. You also have the cost of
23 capital that you're going to -- that you need to look
24 at. You have the issues on impact of NRC review
25 schedules, the cost of turbine.

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1 So look at a dry cooling system with a
2 high backpressure turbine. It's probably quite a bit
3 higher than this \$200 million. I'm talking about
4 significantly higher, and now so you're looking at
5 several hundred million dollars at that point. It is
6 becoming a fair amount of the percentage of the cost
7 of the plant.

8 I would also note that Mr. Cushens' -- I
9 mean Mr. Powers' testimony yesterday, he talked about
10 a unit being \$10 million. The units that we are
11 looking at are substantially less than that, than ten
12 million.

13 JUDGE TRIKOUROS: Do you mean ten billion?

14 MR. PIERCE: Ten billion, that's correct.
15 I wish I could get them for ten million.

16 JUDGE TRIKOUROS: Mr. Powers?

17 MR. POWERS: I did see in the newspaper it
18 was reported today that Vogtle 3 and 4 would be 14
19 billion according to, I think, the Georgia PSC, and
20 the 200 million, if we assume that they are split
21 equally, a \$7 billion project, two hundred million
22 over seven billion; that's three percent about the
23 project budget.

24 JUDGE TRIKOUROS: Okay. Anything more?

25 MR. PIERCE: Nothing more.

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1 JUDGE TRIKOUROS: All right. That's the
2 end of the questions.

3 JUDGE BOLLWERK: All right. Let me just
4 check with counsel then. Does anyone need an
5 opportunity generate any further questions based on
6 what you've heard here?

7 MR. BLANTON: I don't think we do, Your
8 Honor.

9 JUDGE BOLLWERK: No?

10 MR. SANDERS: No, thank you.

11 JUDGE BOLLWERK: Nothing from the
12 intervenors?

13 MR. MOULDING: No, sir.

14 JUDGE BOLLWERK: All right. And then
15 nothing else from either of the Board members? Judge
16 Jackson?

17 JUDGE JACKSON: One final question. I
18 think we're agreed in this testimony that a nuclear
19 power plant of this size hasn't been built with the
20 dry cooling system. I'd like to ask you both a
21 question. In your experience in implementing a scaled
22 up technology on a complex system like this, would you
23 expect that there might be complications in doing
24 this?

25 We can start with you.

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1 MR. POWERS: I do not. I don't see this
2 as a scale-up. Again, referring back to Matimba that
3 has hundreds of air cooled condenser cells more than
4 either Vogtle 3 or Vogtle 4 would require, to me the
5 plumbing of a single turbine to an array of ACC cells
6 for an 1117 megawatt plant has not been done, but the
7 construction of a contiguous ACC far larger than would
8 be needed on either of these units has been done, and
9 it has been operating for at least 15 years.

10 JUDGE JACKSON: Okay. Thanks.

11 Is this based on then your personal
12 experience in implementing and constructing something,
13 a complex system like this?

14 MR. POWERS: I'm not sure I understand the
15 question, Judge.

16 JUDGE JACKSON: I'm just trying to
17 understand the perspective that you bring to this
18 answer. Have you implemented large scale technologies
19 that have been new or scale-ups or different than
20 before and, therefore, have an experience base that
21 would tell you whether or not complications tend to
22 arise in large engineering projects that are plowing
23 new ground, in essence?

24 MR. POWERS: I do not have direct personal
25 experience with construction of ACC, large air cooled

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1 condensers, but I think it is legitimate to point out
2 that the air cooled condenser that would be required
3 for Vogtle 3 or Vogtle 4 would not be the largest air
4 cooled condenser in the world. There are bigger air
5 cooled condensers that have been operating for many
6 years, and so that's my point.

7 JUDGE JACKSON: Okay. Thank you.

8 I'd like to ask the same question to Mr.
9 Cuchens.

10 MR. CUCHENS: Yes, sir. I do see a scale-
11 up problem, and I kind of just want to briefly talk
12 about it. Number one, if I put an air cooled
13 condenser at the Matimba site that has a 35 degree ITD
14 on a low backpressure turbine, like we're basically
15 talking about for doing at AP-1000, the ACCs that are
16 there would get much larger. They would get so large,
17 in fact, that you'd have to have a couple more pages
18 to show the width of the additional cells. They are
19 obviously designed for the high ITDs and high
20 backpressure turbines.

21 So to suggest that just because it is
22 being done on a site that has a fewer number cells per
23 unit as opposed to a larger number of cells per unit
24 is not relative.

25 Secondly to that, the configuration of the

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1 ACCs at Matimba, they're juttred up against the turbine
2 building. They can only get -- and they put wind
3 skirts there so that basically they can only get wind
4 into them in one direction, as Mr. Powers says, to
5 mitigate the negative impacts, adverse effects.

6 The configuration for the AP-1000 ACC is
7 well out in the open, and it's not up against
8 anything. So it's basically somewhat subjected to
9 wind directions from -- wind effects from all
10 directions. So we would need to look at mitigations
11 of adverse winds from all directions rather than as is
12 done.

13 So it's not a direct correlation that you
14 can make a relative air influence modeling from. So
15 CFD modeling would be required, and to try to gain
16 from the Matimba experience.

17 JUDGE JACKSON: Okay. Thanks.

18 Have you --

19 MR. CUCHENS: So scaling up is difficult.

20 JUDGE JACKSON: Have you had hands on
21 experience in large construction projects and
22 implementing complex systems --

23 MR. CUCHENS: Yes, sir.

24 JUDGE JACKSON: -- like this?

25 So is your testimony based on experience

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1 of that kind?

2 MR. CUCHENS: We have not gone any larger
3 than the units that basically -- that's the question,
4 is we have not gone any larger than the units on
5 record, and so we do not have any experience with the
6 size of units that we are basically discussing for
7 implementation on the ACC.

8 JUDGE JACKSON: All right. Thanks.

9 MR. CUCHENS: Okay.

10 JUDGE BOLLWERK: All right. Anything
11 further, Judge Trikouros?

12 JUDGE TRIKOUROS: That's it.

13 JUDGE BOLLWERK: Anything the parties want
14 to propose?

15 (No response.)

16 JUDGE BOLLWERK: Hearing nothing, all
17 right. Gentlemen, at this point I think we've
18 finished with this issue and your testimony. I'd like
19 to say that we talked about it a little bit in the
20 hallway during one of the breaks, and I think this was
21 extremely useful to the Board in terms of the
22 information we have obtained by using this method,
23 having you all seated simultaneously. You did a
24 terrific job in sort of keeping to the ground rules,
25 and I appreciate that very much. And on behalf of the

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1 Board I want to thank you all for your testimony and
2 your service to the Board.

3 Thank you.

4 PARTICIPANTS: Thank you, Your Honor.

5 JUDGE BOLLWERK: All right. It's about
6 11:35 or thereabouts. I'm thinking unless the parties
7 have an objection we might go ahead and take our lunch
8 break now and come back and start with 6.0 after lunch
9 unless someone has a different approach.

10 MR. BLANTON: Makes sense to us, Judge.

11 JUDGE BOLLWERK: All right. Why don't we
12 go ahead and do that? And let's say -- shall we start
13 again at one? Will that work for everyone?

14 That's a little bit of additional time
15 than we gave you the other day, but I think it's a
16 nice day out. Maybe some folks would like to go out
17 and have a lunch outside or get off the campus.

18 When we come back at one, I don't know.
19 The expectation is perhaps we will finish with 6.0
20 this afternoon; perhaps we won't. I don't know. I
21 just don't have a good sense of that yet, but we'll
22 certainly start at one o'clock and move forward and
23 then see what we can get done.

24 All right. Thank you very much, everyone.

25 We're adjourned until one o'clock.

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1 (Whereupon, at 11:34 a.m., the hearing was
2 recessed for lunch, to reconvene at 1:00 p.m., the
3 same day.)
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AFTERNOON SESSION

(1:00 p.m.)

1
2
3 JUDGE BOLLWERK: All right. We can go
4 ahead and go on the record, please.

5 We're back after our lunch break today to
6 begin with a new contention, Contention EC 6.0. This
7 has to do with potential dredging of the Savannah
8 River relative to the facility.

9 I believe that we'll go ahead and start
10 with the applicant witnesses. That would be the first
11 order of business.

12 MR. BLANTON: That will be Mr. Neubert,
13 Scott, Smith, and Moorer and Dr. Coutant.

14 JUDGE BOLLWERK: And then I think the plan
15 after that will be to do the panel for the Corps of
16 Engineers and then the staff panel and then the panel
17 for the Joint Intervenors. That would be the order.

18 And at some point interspersed in there,
19 at an appropriate point we'll have the discussion
20 about the question, the hypothetical the Board raised.

21 All right. I see some new faces.

22 MS. ALLEN: Your Honor, I'm Leslie Allen
23 for the Applicant.

24 JUDGE BOLLWERK: Okay.

25 MS. ALLEN: I'd like to introduce our new

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1 witnesses.

2 JUDGE BOLLWERK: All right. If you would,
3 please.

4 MS. ALLEN: Closest to me here is Captain
5 David Scott, who is the president and principal
6 surveyor for Southeastern Marine Surveying Company.

7 Next to him is Mr. Benjamin Smith,
8 operations manager for Steven's Towing Company.

9 Next to him is Mr. Jeff Neubert, the
10 acting manager of logistics for Westinghouse Electric
11 Company.

12 And you've met Tom Moorer, who again is
13 employed by SNC as the project manager for
14 environmental support.

15 And finally, Dr. Coutant, who again you've
16 already met, a scientist with a Ph.D. in biology.

17 JUDGE BOLLWERK: All right. Thank you
18 very much.

19 All right. The gentlemen at this end of
20 the table, we need to swear you in. So if you could
21 raise your right hand, please, and I need an oral
22 affirmative answer from all three of you to the
23 following question:

24 Do you swear or affirm that the testimony
25 you will give in this proceeding is the truth, the

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1 whole truth, and nothing but the truth?

2 PARTICIPANTS: I do.

3 JUDGE BOLLWERK: All right. Each one of
4 them has indicated for the record that they agree. So
5 we can now go ahead and put their testimony in.

6 MS. ALLEN: Okay. If we could pull up the
7 prefiled direct testimony of Messrs. Neubert, Scott
8 and Smith.

9 Mr. Neubert, Mr. Smith and Mr. Scott, was
10 the testimony entitled "Southern Nuclear Operating
11 Company's Testimony of Jeffrey Neubert, Benjamin
12 Smith, and David Scott Concerning EC 6.0" and
13 originally filed on January 9th, 2009, corrected on
14 March 6th, 2009, which has been provided to the court
15 reporter in electronic format under file name
16 "Neubert, Scott, Smith 6.0 Direct Testimony" prepared
17 by you or under supervision and direction, and is it
18 true and correct to the best of your knowledge and
19 believe?

20 PARTICIPANTS: It is.

21 MS. ALLEN: Thank you.

22 Next if we could pull up the prefiled
23 direct testimony of Tom Moorer regarding 6.0, please.

24 JUDGE BOLLWERK: Let's go ahead and put
25 this one in and then we'll move to the next one. I

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1 need a motion.

2 MS. ALLEN: We move that this be entered,
3 please.

4 JUDGE BOLLWERK: All right. There has
5 been a motion made that the testimony be admitted.
6 Any objections?

7 (No response.)

8 JUDGE BOLLWERK: Hearing none, then the
9 prefiled direct testimony of Mr. Neubert, Mr. Smith
10 and Captain Scott is admitted and should be
11 incorporated into the record as if read as DDMS Item
12 ID No. 59819.

13 (Neubert, et al., Direct Testimony (DDMS-
14 59819) to be inserted at this point.)

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**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD**

In the Matter of	)	Docket No. 52-011-ESP
)	
Southern Nuclear Operating Company	)	ASLBP No. 07-850-01-ESP-BD01
)	
(Early Site Permit for Vogtle ESP Site)	)	January 9, 2009

**SOUTHERN NUCLEAR OPERATING COMPANY'S TESTIMONY OF
JEFFREY NEUBERT, BENJAMIN SMITH, AND DAVID SCOTT
CONCERNING EC 6.0**

Q1. Please state your name and address.

A1. My name is Jeffrey L. Neubert ("JLN"). My business address is: 4350 Northern Pike, Monroeville, PA 15146.

My name is Benjamin B. Smith, Jr. ("BBS"). My business address is: 4170 Highway 165, Yorges Island, SC 29449.

My name is Captain H. David Scott ("HDS"). My business address is: 220 Battery Circle, Savannah, GA 31410.

Q2. Please state your employer, position, and current responsibilities.

A2. (JLN) I am currently employed by Westinghouse Electric Company ("WEC") as the Director of Logistics for Nuclear Power. In this capacity, I am responsible for activities related to the delivery of components for Westinghouse's AP1000TM design nuclear power plant being supplied under EPC (Engineering, Procurement and Construction) Contracts, including with respect to the delivery of such components logistics planning, transportation, warehousing and inventory management.

(BBS) I am currently employed by Stevens Towing Company, Inc. ("STC") as the Operations Manager. In this capacity, I am responsible for planning and supervising all operations, both inland and offshore, for a fleet of nine tugs and twenty-five barges.

(HDS) I am currently employed by Southeastern Marine Surveying Company ("SMS") as the Owner, President, and Principal Surveyor. In this capacity, I am the principal surveyor and am responsible for general oversight of the company.

Q3. Please summarize your education and professional qualifications.

A3. (JLN) I earned a Bachelor of Science degree in Engineering Mechanics from Pennsylvania State University and an Executive Masters of Business Administration from University of Pittsburgh. I have over 35 years of experience in all aspects of logistics management. I have extensive experience in transportation management, physical distribution and logistics. Early in my career at Westinghouse Electric Corporation, I was involved in delivery of major components to more than 40 nuclear power plant construction sites, including Plant Vogtle Units 1 & 2. I am knowledgeable about all types of transportation, and have taught transportation management, logistics management, and supply chain management at the university level. My consulting projects include physical distribution networks, distribution center site locations, electronic data interchange (EDI) information exchange networks, dedicated fleet development, contract logistics procurement, and supply chain management strategy development and implementation. See Exhibit SNC000043 (Jeffrey L. Neubert Curriculum Vitae).

(BBS) I earned a Bachelor of Arts degree in History from The University of the South, Sewanee, Tennessee, and a Masters of Business Administration from The Citadel. I have

over 20 years of experience planning and supervising all operations, both inland and offshore, for a midsize barge transportation company that includes a fleet of nine tug boats and 25 barges. I have personally supervised operations on all of the navigable rivers in the Southeast, including the Savannah River, delivering large manufactured pieces, transformers, generators, turbines, and chemical plant vessels. I am extensively versed in shallow water tug and barge operations and the practices and techniques required for successful deliveries of difficult project cargo. *See Exhibit SNC000044 (Benjamin B. Smith, Jr. Curriculum Vitae).*

(HDS) I earned a Bachelor of Science degree in Nautical Science from Maine Maritime Academy. I have over 30 years of experience in the shipping trade and maritime industry. I hold the following licenses and certifications: Master of Vessels, 1600 Gross Tons or Less, Upon Oceans; Third Mate of Vessels, Unlimited Tonnage, Upon Oceans; and First Class Pilot, Unlimited Tonnage, Savannah River. I have spent the past 26 years with, and am the Owner and President of, a marine surveying company that provides comprehensive expert marine surveying services to maritime interests. In this capacity, I am the principal surveyor for the company and am a member of the National Association of Marine Surveyors (NAMS). *See Exhibit SNC000045 (Captain H. David Scott Curriculum Vitae).*

Q4. What is the purpose of your testimony?

A4. (All) This testimony describes the optimal and desired method of delivery of heavy components to the Plant Vogtle Units 3 & 4 construction site via barge and our current estimate of the extent of dredging of the Savannah River that will be required to accomplish barge delivery of the components. The testimony responds to the assertion

made by the Intervenor's witness, Dr. Donald F. Hayes, that an estimated 116 miles of the Federal navigation channel in the Savannah River would need to be dredged and approximately 2 million cubic yards of sediment removed.

In particular, this testimony summarizes the analysis of the dredging and snag removal needs of the Federal navigation channel in the Savannah River based on a survey of the river conducted by Capt. David Scott.

Q5. What conclusion do you reach in this testimony?

A5. (All) We conclude that substantially less than 2 million cubic yards of sediment will need to be removed from the Savannah River. To the contrary, we identified 8 locations along the Savannah River where a total of only approximately 36,500 cubic yards of dredged material would need to be removed.

Q6. What is the preferred method of transporting the heavy components for construction of Plant Vogtle Units 3 & 4?

A6. (JLN) The most efficient and cost-effective method of delivery of heavy components to the Plant Vogtle Units 3 & 4 ("Vogtle 3 & 4") construction site at Vogtle Electric Generating Plant ("VEGP") is to deliver them by barge. The largest and heaviest single component of Vogtle 3 & 4 is the WEC AP1000™ steam generator weighing approximately 730 tons.

Q7. Approximately when would the barge deliveries take place?

A7. (JLN) Although at one time we considered beginning barge deliveries as early as June 2010, the dates that we are currently using for planning purposes at this time are approximately March, 2012 for the earliest barge shipment and approximately November, 2014 for the latest barge shipment.

Q8. How were the components of Plant Vogtle Units 1 & 2 delivered?

A8. (JLN) In the 1970s, the major components of Plant Vogtle Units 1 & 2 were delivered to the VEGP site by barge using the Federal navigation channel on the Savannah River.

Q9. Can construction of Vogtle 3 & 4 proceed without delivery of components by barge?

A9. (JLN) Yes. Although barging on the Savannah River is the preferred method for delivering the components, construction of Vogtle 3 & 4 does not depend on delivery of the components by barge.

Q10. How many barge loads would be required for delivery of the components for construction of Vogtle 3 & 4?

A10. (JLN/BBS) The number of barge loads is dependent on the flow of the Savannah River. A greater number of lighter barge loads would be required for low flow conditions, whereas a fewer number of heavier barge loads could be used in greater flow conditions. The draft of the barge increases as the load on the barge increases. Under the current drought conditions on the Savannah River, however, the minimal dredging discussed below would be needed even if only one barge load was required.

Q11. What size barge would be required for the transport of components to the VEGP site?

A11. (BBS) A barge measuring 220 feet in length and 55 feet in width is the largest barge that could reasonably navigate the Savannah River in its current state and accommodate the weight of the largest single component, the WEC AP1000 steam generator.

Q12. What is the expected operational draft of a barge of this size and load?

A12. (BBS) The expected operational draft of a barge of this size loaded with one steam generator would be 5 1/2 feet.

Q13. **Was a survey of the Savannah River conducted?**

A13. (JLN) Yes. WEC commissioned Capt. David Scott of SMS to conduct an updated survey of the Savannah River. Capt. Scott conducted the survey between the Savannah harbor and the VEGP site in July of 2008.

Q14. **Describe the circumstances that led to the commissioning of an updated survey of the Savannah River between the Savannah harbor and the VEGP site.**

A14. (JLN/BBS) In mid-June 2008, on behalf of WEC, we met with representatives of Southern Nuclear Operating Company ("SNC"), Southern Company, and the Shaw Group at the offices of SNC in Birmingham, Alabama, to discuss issues related to the logistics of transporting the components for construction of Vogtle 3 & 4. The Federal navigation channel on the Savannah River between the Savannah harbor and the VEGP site has not been maintained by the U.S. Army Corps of Engineers since 1979 because of disuse. Accordingly, the meeting participants agreed that a survey of the Savannah River was needed in order to have current information for analyzing the potential need for dredging and snag removal. This led to our commissioning Capt. Scott to conduct the survey.

Q15. **Is the Savannah River between the Savannah harbor and the VEGP site currently considered navigable?**

A15. (BBS/HDS) No. Parts of the Savannah River in this area are not navigable in the river's current state. The navigation channel of the Savannah River between the Savannah harbor and VEGP has not been dredged since 1979. Furthermore, the Savannah River has been in drought condition for the past 6 to 7 years, which puts the flow of the river (calculated in cubic feet per second ("cfs")) at a historical low.

Q16. Please describe the manner by which the survey of the Savannah River was conducted.

A16. (HDS) I conducted a survey in July, 2008 of the Savannah River stretching from the Savannah harbor to the VEGP site, a distance of approximately 110 miles, using vessel-based equipment that utilized differential global positioning system ("GPS") technology. Beginning at mile post 22 (the lower limit of tidal flow in the river system), I took soundings every 1/10 mile in a perpendicular cross-hatch. A baseline or known reference point was established using designated river gauge stations that are tracked by the U.S. Geological Survey. The baseline is necessary in order to determine the depth of the water in the river at varying river levels. My findings were reduced to a survey report, a true, accurate, and complete copy of which is attached to this testimony as Exhibit SNC000046.

Q17. What were the conditions of the river when the survey was conducted?

A17. (HDS) The conditions of the river were optimal for a "worst case scenario" navigation analysis, since the Savannah River has been in a drought condition for 6 to 7 years. The flow of the river at the time the survey was conducted was 3700 cfs.

Q18. Did you analyze the survey to determine whether dredging and/or snag removal was needed?

A18. (All) Yes. We reviewed the entire survey and noted the locations where the depth of the practical navigational channel was less than 6 feet.

(HDS) My survey team also visually observed and noted locations along the river where snag removal was needed. Due to the drought conditions of the Savannah River, snags (principally downed trees) were readily identifiable.

Q19. Describe what assumptions you made in analyzing the data.

A19. (All) We analyzed the data using minimal operational criteria under the current drought conditions. We assumed that the flow of the river would be approximately 3700 cfs. Our analysis assumed the use of a barge 210 feet in length and 55 feet in width, which could accommodate the largest single component, the WEC AP1000 steam generator. We assumed that all barge loads would be held to the cargo weight of the steam generator, approximately 730 tons. The expected operational draft for a barge of this size with 730 tons of cargo weight is 5 1/2 feet. We assumed the use of two smaller tug boats with operational drafts of less than 5 feet. We analyzed the data assuming a practical navigation channel of 90 feet in width. The width of the channel extended to as much as 120 feet in tight bends in the river, due to the length and inflexibility of the barge.

Q20. What were the results of your analysis of the potential need for dredging and snag removal?

A20. (All) We identified eight (8) locations between the Savannah harbor and the site of the proposed barge slip for Vogtle 3 & 4 where the depth of the river was 6 feet or less, indicating a need for dredging at the location. In each location, we estimate that no more than 2 feet of depth would need to be added to the channel. Based on our analysis, we believe that a total of roughly 36,500 cubic yards of dredged material would need to be removed from the entire 110 mile stretch of river and placed in a spoil disposal area. Our findings are set forth in more detail in the following table:

Statutory Mile	Depth	Width	Length	Cu. Yds.
51.3	2'	90'	800'	5,333
66.2	2'	80'	700'	4,148
89.7	2'	120'	800'	7,111
97.7	2'	60'	700'	3,111
111.4	2'	120'	600'	5,333
121.6	2'	90'	500'	3,333
128	2'	50'	400'	1,481
140.7	2'	90'	1000'	<u>6,667</u>
Total				36,517

Snags that interfere with navigation also would need to be removed at various locations throughout the 110 mile stretch of river that was surveyed. A total of 277 trees were identified that need to be removed at 180 different locations along the river.

Q21. Where do you expect the dredged material (spoil) to be disposed of?

A21. (All) Based on our collective experience, we believe that the dredged material would be disposed of in a regulated spoils area.

Q22. Based on your recent navigation of the river in connection with conducting the survey, approximately what percentage of trees will not need to be removed?

A22. (HDS) Approximately 70% of the snags in the river do not need to be removed.

Q23. What is the current flow of the Savannah River?

A23. (JLN) As of January 5, 2009, the flow in the Savannah River was 3790 cfs. I determined this by checking the instantaneous value for the flow of the Savannah River on the "Water Resources of Georgia" section of the U.S. Geological Survey website (<http://ga.water.usgs.gov/>). Specifically, I selected location 02197000, "Savannah River at Augusta, GA," on the "Streamflow Conditions in Georgia" map to reveal the river flow as shown on the Augusta Gauge as of January 5, 2009.

Q24. Would release of water from upstream reservoirs be necessary to transport the components to the VEGP site if the necessary dredging is accomplished?

A24. (JLN/BBS) No. Our dredging estimate is based on the assumption that the U.S. Army Corps of Engineers ("ACE") will maintain a flow rate of at least 3700 cfs during times of navigation for delivery of Vogtle 3 & 4 components. On this basis, navigation of the Federal navigation channel can occur with the noted minimal dredging and no special release of water from upstream reservoirs. Nevertheless, an increase in the flow of the river could minimize (or eliminate) the need for dredging the Federal navigation channel.

Q25. Did you share your survey analysis with the U.S. Army Corps of Engineers and what was its reaction?

A25. (All) Yes. On August 5-6, 2008, we met with ACE to discuss Capt. Scott's survey and our analysis of the dredging and snag removal needs of the Federal navigation channel in the Savannah River. Representatives of ACE indicated that the magnitude of the project was considerably less than they originally contemplated. Representatives of ACE also indicated that our survey and analysis were done in accordance with their expectations and that they were comfortable with the preliminary results reported.

Q26. What are your conclusions and recommendations?

A26. (All) A conservative estimate is that no more than 36,500 cubic yards of dredging material would need to be removed. This opinion is based on our knowledge of the physical characteristics and navigational requirements of the required AP1000 component deliveries to the VEGP site, and Capt. Scott's survey of the river. Although the precise volume of dredged material that may need to be removed in order to navigate the Savannah River to the VEGP site cannot be determined with certainty unless and until

ACE conducts its own analysis, it is our opinion, that far less than 2 million cubic yards of sediment will need to be removed as indicated by the Intervenor's witness, Dr. Hayes. Before any dredging can occur, we would expect the ACE would establish the exact volumes of dredged material that would need to be removed. Further, dredging may not be necessary at all if the flow of the Savannah River increases from its current historical lows. Snag removal, however, is needed regardless of the flow of the river.

(BBS) We can barge the components for Vogtle 3 & 4 using the Federal navigation channel on the Savannah River with the snag removal and minimal dredging discussed herein.

Q27. Does this conclude your testimony?

A27. (All) Yes.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

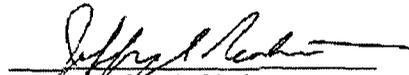
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of) Docket No. 52-011-ESP
)
Southern Nuclear Operating Company) ASLBP No. 07-S50-01-
) ESP-BD01
)
(Early Site Permit for Vogtle ESP Site)) March 6, 2009

Commonwealth of Pennsylvania) ss.
County of Allegheny County)
AFFIDAVIT OF JEFFREY L. NEUBERT IN SUPPORT OF SOUTHERN NUCLEAR'S
REVISED DIRECT TESTIMONY ON ENVIRONMENTAL CONTENTION 6.0

I, Jeffrey L. Neubert, do hereby state as follows:

1. I have read the foregoing prepared testimony regarding environmental matters at the Plant Vogtle Site.
2. I attest to the accuracy of those statements, support them as my own, and endorse their introduction into the record of this proceeding. I declare under penalty of perjury that those statements, and my statements in this affidavit, are true and correct to the best of my knowledge, information and belief.


Jeffrey L. Neubert

Subscribed and sworn to before me
this 6th day of March, 2009.


Notary Public

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Phyllis West, Notary Public
Franklin Twp., Butler County
My Commission Expires Aug. 17, 2012
Member, Pennsylvania Association of Notaries

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	Docket No. 52-011-ESP
)	
Southern Nuclear Operating Company	)	ASLBP No. 07-850-01- ESP-BD01
)	
(Early Site Permit for Vogtle ESP Site)	)	March 6, 2009

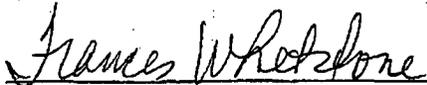
AFFIDAVIT OF BENJAMIN B. SMITH, JR. IN SUPPORT OF SOUTHERN NUCLEAR'S
REVISED DIRECT TESTIMONY ON ENVIRONMENTAL CONTENTION 6.0

I, Benjamin B. Smith, Jr., do hereby state as follows:

1. I have read the foregoing prepared testimony regarding environmental matters at the Plant Vogtle Site.
2. I attest to the accuracy of those statements, support them as my own, and endorse their introduction into the record of this proceeding. I declare under penalty of perjury that those statements, and my statements in this affidavit, are true and correct to the best of my knowledge, information and belief.


Benjamin B. Smith, Jr.

Subscribed and sworn to before me
this 6th day of March, 2009.


Notary Public

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	Docket No. 52-011-ESP
)	
Southern Nuclear Operating Company	)	ASLBP No. 07-850-01- ESP-BD01
)	
(Early Site Permit for Vogtle ESP Site)	)	March 6, 2009

AFFIDAVIT OF CAPTAIN H. DAVID SCOTT IN SUPPORT OF SOUTHERN NUCLEAR'S
REVISED DIRECT TESTIMONY ON ENVIRONMENTAL CONTENTION 6.0

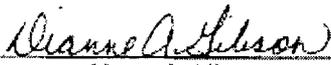
I, Captain H. David Scott, do hereby state as follows:

1. I have read the foregoing prepared testimony regarding environmental matters at the Plant Vogtle Site.
2. I attest to the accuracy of those statements, support them as my own, and endorse their introduction into the record of this proceeding. I declare under penalty of perjury that those statements, and my statements in this affidavit, are true and correct to the best of my knowledge, information and belief.



Captain H. David Scott

Subscribed and sworn to before me
this 6th day of March, 2009.



Notary Public
Commission Expires: 9/1/2009

1 MS. ALLEN: Mr. Moorer, was the testimony
2 entitled "Southern Nuclear Operating Company's
3 Testimony of Thomas C. Moorer Concerning EC 6.0,"
4 which is dated January 9th, 2009, and has been
5 provided to the court reporter in electronic format
6 under file name "Moorer 6.0 Direct Testimony,"
7 prepared by you or under your supervision and
8 direction, and is it true and correct to the best of
9 your knowledge and belief?

10 MR. MOORER: Yes, it is.

11 MS. ALLEN: Your Honor, we move that this
12 testimony be entered.

13 JUDGE BOLLWERK: All right. Any
14 objections?

15 (No response.)

16 JUDGE BOLLWERK: Hearing none, then the
17 direct testimony of Mr. Moorer relating to Contention
18 EC 6.0 is admitted and should be placed into the
19 record at this point as if read as DDMS Item ID 58920.

20 (Moorer Direct Testimony (DDMS-58920) to
21 be inserted at this point.)
22
23
24
25

NEAL R. GROSS

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WASHINGTON, D.C. 20005-3701

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING BOARD**

In the Matter of	)	Docket No. 52-011-ESP
)	
Southern Nuclear Operating Company	)	ASLBP No. 07-850-01- ESP-BD01
)	
(Early Site Permit for Vogtle ESP Site)	)	January 9, 2009

**SOUTHERN NUCLEAR OPERATING COMPANY'S TESTIMONY OF
THOMAS MOORER CONCERNING EC 6.0**

Q1. Please state your name and address.

A1. My name is Thomas Claibourne Moorer. My business address is: 42 Inverness Center Parkway, Birmingham, AL 35242-4809.

Q2. Please state your employer, position, and current responsibilities.

A2. I am currently employed by Southern Nuclear Operating Company ("SNC") as the Project Manager-Environmental. In that capacity, I am responsible for all environmental support activities for new plant and license renewal work for SNC. I was responsible for developing the Environmental Report filed by SNC as part of the Early Site Permit application for Vogtle Units 3 and 4 and all supporting activities. See Exhibit SNC000014 (Thomas C. Moorer Curriculum Vitae).

Q3. Please summarize your education and professional qualifications.

A3. I earned a Bachelor of Science degree in Environmental Science from Auburn University and a Bachelor of Science in Civil/Environmental Engineering from the University of Alabama. I have over 30 years of experience in the environmental field, including 18+ years of experience in environmental engineering, licensing, and regulatory compliance

in nuclear power. I have over 15 years of experience working in NEPA matters, including the development of Environmental Reports for Environmental Impact Statements supporting NRC licensing actions. I am heavily involved in the work of various industry groups, including EPRI, EEI, and NEI, and have both authored and co-authored numerous technical publications in the environmental field.

Since 2005, I have been responsible for all environmental support for new plants and license renewals, including development of the Environmental Reports (“ERs”) for the Vogtle Early Site Permit (“ESP”), Combined Construction and Operating License (“COL”) and License Renewal applications to NRC. I am responsible for interface with NRC for review of the ERs and subsequent EIS development, site audits and public meetings and for coordination with state and Federal agencies regarding ESP, COL, and License Renewal activities. Prior to 2005, I worked as the SNC Environmental Services Supervisor for over 15 years and managed the technical and regulatory support for permitting and environmental compliance in the areas of water, air, solid/hazardous waste, mixed waste, chemistry and hazardous materials for all three SNC plants. I have extensive NEPA experience, including the management of environmental support for the Plant Farley and Plant Hatch license renewals, as well as EPRI and NEI work associated with development of the NEI License Renewal Guideline. I worked with NRC on the development of the Generic Environmental Impact Statement (“GEIS”) for license renewal. I also provided project management for numerous major environmental projects including technical studies to resolve NPDES permitting issues, wetlands and endangered species work, US Army Corps of Engineers permitting, and studies related to license renewal.

Q4. What is the purpose of your testimony?

A4. I will testify regarding my understanding of the transportation of components to the Vogtle site, the possible need to dredge/maintain the Savannah River navigation channel, and Corps reservoir operations. I am providing separate testimony regarding EC 1.2 and EC 1.3.

Q5. Have you been involved in the decision making process which led to the Westinghouse/Shaw Consortium's determination that delivery by barge was the optimal form of delivery of heavy components to the Vogtle 3 and 4 site?

A5. Yes. I am aware of the Consortium's decision and have provided some information to them regarding the delivery by barge of heavy components when Units 1 and 2 were constructed. I coordinated support of NRC consultation with the U.S. Army Corps of Engineers (USACE) on matters involving the NRC Final Environmental Statement. I was also responsible for initiation of discussions with the USACE and Consortium regarding use of the Savannah River navigation channel for delivery of the heavy components for Vogtle 3 and 4.

Q6. What components were delivered by barge for the construction of Vogtle 1 and 2?

A6. Essentially all components the weight or size of which made delivery by road or rail difficult, including the reactor vessels, reactor heads, steam generators, condenser, and turbines. Although VEGP 1 and 2 did not involve the delivery of large construction modules to the site, the shipping program envisioned by the Consortium does not appear to be materially different from that utilized to construct Vogtle Units 1 and 2. The FEIS for Vogtle Units 1 and 2 concluded that impacts would be generally small. *See Exhibit SNC000050 (1985 FEIS for VEGP Units 1 & 2).*

Q7. Are you familiar with the Army Corps of Engineers Environmental Impact Statement regarding the maintenance of the navigation channel for the Savannah River?

A7. Yes.

Q8. Does that EIS provide insight as to the methods that the Corps of Engineers might use to perform necessary maintenance of the navigation channel?

A8. Yes. The Corps EIS focuses on two primary subject areas. *See* Exhibit SNC000047 (Corps 1976 EIS for Savannah River Navigation Project). First, the EIS addresses the environmental impacts associated with construction of certain cutoffs between major river bends. This section addresses the one-time impacts related to the construction activities and the one-time disposal of removed material. The second area is the Channel Maintenance Program developed by the Corps for periodic use in ensuring the authorized channel dimensions and depths are available. This area defines the process for dredging, removal of snags, and disposal of snags and dredge spoil. Dredge spoil material is essentially sand, which has numerous beneficial uses. The Corps used the program for several years until channel maintenance funding became limited. The program defined in the 1976 EIS is very similar to the current programs used by the Corps to maintain navigation channels. The only significant change in current common practices regards the management of dredge spoil. Whereas, the 1976 EIS indicates that “within bank” disposal methods would be used, it is my opinion that the Corps will instead use existing upland disposal areas or move the material to heavily eroded areas to replenish sand lost to hurricane or heavy wave damage. Within bank involves placing the material removed on the channel bank below the high water mark. During the winter and

spring high water events, the material is returned to the channel and transported downstream. This method is no longer used to any great extent by the Corps for river work and likely would not be used as a future disposal method. Based on my experience with South Atlantic Division Corps dredge spoil management practices, it is likely that the Corps would collect the removed material in hopper barges and manage the material in existing upland disposal areas. As an alternative, the material could be transported to sites where significant erosion has occurred and be used to replace eroded material. Either of these options would be available to the small amount of material requiring removal and should meet environmental expectations of the state resource agencies with disposal jurisdiction.

Q9. Do you have personal experience with past Corps of Engineers dredging projects?

A9. Yes.

Q10. Based on that experience, do you have an understanding as to any other practices the Corps of Engineers employs?

A10. Yes. I have over 20 years' experience with channel maintenance and site specific dredging operations. I was involved for a number of years with the Mobile District Corps of Engineers in developing a demonstration project for beneficial use of dredge spoil material removal in the Apalachicola River. This project demonstrated that as an alternative to within bank disposal, dredge spoil could be collected and transported to areas impacted by hurricane-induced erosion to replace lost material. The project demonstrated that this spoil management method could be implemented at an acceptable cost level for use in both ongoing channel maintenance and for restoration of old disposal

areas. It is anticipated that the Corps would rely on a similar approach for disposal of the material removed from the Savannah River.

Q11. Do you have an opinion on how any necessary snag removal would be handled?

A11. Yes. In my experience, the preference of the Corps and affected resource agencies is to relocate removed snags to areas of the river outside the navigation channel. This method preserves any habitat value associated with the snags while removing the hazard to navigation. I have met with Georgia Department of Natural Resources representatives and my understanding from that meeting is that this method of managing snags, in order to maintain aquatic habitat, would be preferred by the State of Georgia.

Q12. Is it possible at this time to provide precise and comprehensive information regarding the extent of dredging that might be performed by the Corps of Engineers on the Savannah River Navigation Channel and the environmental impacts of that dredging?

A12. Not at this time. As an initial matter, SNC has made no formal request to the Corps of Engineers to conduct any dredging. SNC and the Consortium has met with the Corps and based on those meetings, it is my understanding that until the Corps receives a formal request to evaluate the proposed need and until funding is provided within the Corps, the Corps will not conduct any activities related to this project. A preliminary survey was conducted by the Consortium in the summer of 2008 and this information has been discussed with the Corps. *See* Exhibit SNC000046 (Savannah River Survey), and *see* Prefiled Written Testimony of Messrs. Neubert, Smith and Capt. Scott. The Corps indicated that the survey provided a useful preliminary assessment of the maintenance scope and that it could be used by the Corps in their scoping evaluation. They indicated

that additional confirmatory work would be required prior to conducting any dredging. Prior to performing any dredging, the Corps of Engineers would have to conduct additional surveys and analyses to define the final project scope, develop a NEPA assessment of the intended maintenance of the navigation channel, and obtain funding for implementation of the project. Until funding is obtained and the NEPA analysis is complete, we will not know whether any maintenance will be performed at all. In fact, the Corps has indicated it currently does not have funding for this project. *See Exhibit SNC000049 (December 15, 2008 E-mail to Tom Moorer).* Until the Corps of Engineers determines for itself the scope and extent of the intended dredging, the information provided by the testimony of Jeff Neubert, David Scott and Bos Smith, and the analysis by Dr. Coutant, represents the best information available regarding the scope, extent, and impact of dredging.

Q13. Are you familiar with the Army Corps of Engineers Drought Management Plans and Water Control Plans for the Savannah River?

A13. Yes.

Q14. Do these plans provide releases specifically for navigation on the Savannah River?

A14. The Drought Management Plan does not address navigation in any way. *See SNC000018 (FONSI for Drought Contingency Plan Update (August 2006)).* No releases are made for navigation during droughts or during normal flow periods. *See Exhibit SNC000048 at 9 (Thurmond Dam Water Control Plan and Guide Curves).* SNC does not plan to request any extra or special releases from upstream reservoirs to support navigation. Operations in accordance with existing Corps procedures is all that is expected. The Water Control Plan defines a series of reservoir rule curves, and associated releases from dams that are

used to ensure the system is operated in a balanced, equitable fashion to meet the needs of all stakeholders. No changes to releases already made under this plan would be requested to support navigation.

Q15. Are each of the exhibits referenced in this pre-filed written testimony true, accurate and correct copies, and do they accurately portray the facts they purport to portray?

A15. Yes.

Q16. Does this conclude your testimony?

A16. Yes.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

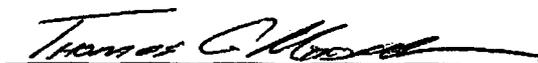
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	Docket No. 52-011-ESP
)	
Southern Nuclear Operating Company	)	ASLBP No. 07-850-01- ESP-BD01
)	
(Early Site Permit for Vogtle ESP Site)	)	January 9, 2009

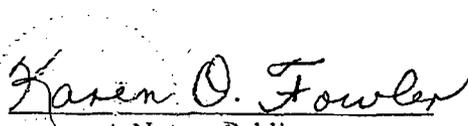
AFFIDAVIT OF THOMAS C. MOORER IN SUPPORT OF SOUTHERN NUCLEAR'S
PRE-FILED TESTIMONY ON ENVIRONMENTAL CONTENTION 6.0

I, Thomas C. Moorer, do hereby state as follows:

1. I am employed by Southern Nuclear Operating Company as the Project Manager for Environmental Support. A statement of my professional qualifications is attached to the SNC pre-filed testimony to be submitted on January 9, 2009, in response to hearing issues identified by the Board.
2. I have read the foregoing prepared testimony regarding environmental matters at the Plant Vogtle Site.
3. I attest to the accuracy of those statements, support them as my own, and endorse their introduction into the record of this proceeding. I declare under penalty of perjury that those statements, and my statements in this affidavit, are true and correct to the best of my knowledge, information and belief.


Thomas C. Moorer

Subscribed and sworn to before me
this 6th day of January, 2009.


Karen O. Fowler
Notary Public
My Commission expires
January 19, 2011

1 MS. ALLEN: Thank you.

2 If we could now pull up the prefiled
3 direct testimony of Dr. Coutant on 6.0, please.

4 Dr. Coutant, was the testimony entitled
5 "Southern Nuclear Operating Company's Testimony of Dr.
6 Charles C. Coutant Concerning EC 6.0" and originally
7 filed on January 9, 2009, corrected on March 11th,
8 2009, which has been provided to the court reporter in
9 electronic format under file name "Coutant 6.0 Direct
10 Testimony," prepared by you or under your supervision
11 and direction, and is it true and correct to the best
12 of your knowledge and belief?

13 DR. COUTANT: Yes, it is.

14 MS. ALLEN: Thank you.

15 Your Honor, we'd move that this be
16 entered.

17 JUDGE BOLLWERK: All right. Any objection?

18 (No response.)

19 JUDGE BOLLWERK: Hearing none, then the
20 testimony of Dr. Coutant, his direct testimony
21 relating to Contention EC 6.0 is admitted and should
22 be at this point placed into the record as if read as
23 DMS Item ID 59382.

24 (Coutant Direct Testimony (DMS-59382) to
25 be inserted at this point.)

NEAL R. GROSS

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WASHINGTON, D.C. 20005-3701

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	Docket No. 52-011-ESP
Southern Nuclear Operating Company	)	ASLBP No. 07-850-01-ESP-BD01
(Early Site Permit for Vogtle ESP Site)	)	January 9, 2009

**SOUTHERN NUCLEAR OPERATING COMPANY'S TESTIMONY OF
DR. CHARLES COUTANT CONCERNING EC 6.0**

Q1: Please state your name, address and current occupation.

A1: My name is Charles Coe Coutant. I am a retired Distinguished Research Staff Member of the Oak Ridge National Laboratory, Oak Ridge, Tennessee. My combined business and home address is 120 Miramar Circle, Oak Ridge, TN 37830-8220. I now serve as a private consultant on matters of aquatic ecology and fisheries biology.

Q2: Please summarize your educational and professional qualifications.

A2: My professional and educational experience is summarized in my curriculum vitae (CV). See SNC000012 (Dr. Charles C. Coutant Curriculum Vitae). I received a Ph. D. in Biology (focus on ecology) from Lehigh University in 1965. I have conducted thermal effects and other cooling water studies since 1959. For 5 years post doctorate, I studied thermal effects on aquatic life of the Columbia River in Washington. At the Oak Ridge National Laboratory, since 1970, I have conducted individual research on thermal effects, entrainment and impingement on aquatic life, led a team of scientists studying these power plant cooling issues (for which I have numerous publications listed in my CV), participated in preparation of NEPA

Environmental Impact Statements for nuclear power plants for the U.S. Atomic Energy Commission, later the Nuclear Regulatory Commission (NRC), in which issues related to impacts of construction (e.g., dredging) and operation (e.g., thermal, entrainment and impingement) were analyzed (Palisades, Shoreham, Indian Point), as well as for several hydropower facilities (for the Federal Energy Regulatory Commission, FERC). I also have participated in the development of national water quality criteria for temperature (National Academies and the Environmental Protection Agency, EPA) and the interagency (NRC & EPA) implementation document for the thermal effects Section 316(a) of the Clean Water Act. I have assisted numerous electricity generators with aquatic environmental licensing issues, including Virginia Power (now Dominion) with its North Anna Nuclear Power Plant. I have served on several task forces to develop biological criteria for environmentally benign siting, design and operation of power station cooling-water facilities. I helped develop the NRC NEPA implementation rules in my role as a participant in preparation of the initial EISs for the Atomic Energy Commission Division of Regulation (predecessor to NRC). This preceded the formal NRC guidelines now in place.

Q3: Please describe your professional activities.

A3: My professional activities have included active participation in the American Fisheries Society, the dominant professional society for fisheries scientists and managers in North America. I served as President of the Society in 1996-1997, after several years of membership on the Governing Board. I was also President of the Water Quality Section, the Tennessee Chapter, and the Southern Division. For many years I was an active participant in the literature review committee of the Water Pollution Control Federation (now Water Environment Federation), producing annual reviews of thermal effects literature. I have served on panels of

the American National Standards Institute and the American Nuclear Society developing environmental standards for cold shock and entrainment, and of the American Society of Testing and Materials for contaminant transport models. I am also a member of the Ecological Society of America, in which I was an officer of the Applied Ecology Section. I have served as an advisor to international agencies with respect to power station cooling-water impacts (Germany, Sweden, Canada, New Zealand, International Atomic Energy Agency (IAEA), and Unesco). The IAEA and Unesco activities resulted in reference manuals for siting, design and operation of steam power stations to minimize detrimental aquatic environmental impacts. As a result, I have considerable familiarity and experience with evaluating and considering impacts on aquatic resources.

Q4: Are you familiar with Environmental Impact Statements (“EIS”) prepared for compliance with the National Environmental Policy Act (“NEPA”)?

A4: Yes; I am familiar with NEPA EISs, both in general and specifically those prepared by the NRC.

Q5: What is the basis of your familiarity with NEPA EISs?

A5: I have participated in the NEPA EIS process since 1971 and in predecessor environmental impact assessments for nuclear power stations since 1967. From 1967-1969, I was the lead aquatic ecologist at Battelle-Northwest (managing contractor for the Atomic Energy Commission’s [AEC] Hanford Laboratories) in evaluations of fisheries and other aquatic impacts of proposed alternative nuclear power station sites in the Pacific Northwest. With the 1971 Calvert Cliffs decision that extended the AEC’s EIS responsibilities to include non-radiological impacts, I worked with AEC’s regulatory staff as a staff member of the AEC’s Oak Ridge National Laboratory to develop implementation guidelines and topics for evaluation, including

thermal, entrainment and impingement impacts of the cooling system. I was lead author of aquatic assessments for AEC's EISs for Palisades and Shoreham nuclear power stations in the early 1970s, which were contracted to Oak Ridge National Laboratory. I also participated at that time in preparing EISs for Indian Point 2 and 3. I participated in peer reviews of EISs prepared for other existing or proposed power plants for the AEC and its successor regulatory agency, the Nuclear Regulatory Commission. Most of my AEC/NRC EIS contributions were accompanied by testimony before Atomic Safety and Licensing Boards. These assessments were a valuable complement to the biological research my team and I were conducting on these topics at Oak Ridge National Laboratory.

In the 1980s and 1990s, I participated in ecological analyses of hydropower plants for EISs by the Federal Energy Regulatory Commission, including the Susitna Project in Alaska, the Skagit River Project in Washington state, and Ohio River hydropower development. These EISs were contracted to the Oak Ridge National Laboratory in a manner similar to that used by the AEC/NRC. I also participated in EIS for Department of Energy facilities. More recently, I participated in resolution of aquatic ecological issues related to another Early Site Permit (North Anna additional units) on behalf of the company, Dominion Nuclear North Anna LLC.

Q6: Are you familiar with Southern Nuclear Company's ("SNC's") ESP application for Vogtle Units 3 & 4?

A6: Yes.

Q7: Have you reviewed the Petition for Intervention and supporting documents filed in this proceeding?

A7: Yes.

Q8: Are you familiar with Contention EC 6.0?

A8: Yes. I reviewed the Motion to Admit EC 6.0, SNC's and the Staff's Responses, and the Board's Order admitting EC 6.0. As admitted, EC 6.0 reads:

FINAL ENVIRONMENTAL IMPACT STATEMENT (FEIS) FAILS TO PROVIDE ADEQUATE DISCUSSION OF IMPACTS ASSOCIATED WITH DREDGING THE SAVANNAH RIVER FEDERAL NAVIGATION CHANNEL. Because Army Corps of Engineers (Corps) dredging of the Savannah River Federal navigation channel has potentially significant impacts on the environment, the NRC staff's conclusion, as set forth in the "Cumulative Impacts" chapter of the FEIS, that such impacts would be moderate is inadequately supported. Additionally, the FEIS fails to address adequately the impacts of the Corps' upstream reservoir operations as they support navigation, an important aspect of the problem.

Q9: Have you reviewed the "Cumulative Impacts" chapter of the EIS prepared for Vogtle Units 3 & 4?

A9: Yes.

Q10: In your opinion, is the conclusion that impacts from potential dredging by the Corps will be moderate adequately supported in the EIS?

A10: Yes. However, at the time the EIS was published, the scope of the Corps' potential dredging project was still undefined. Based on my experience with preparation of EISs, given the Staff's limited information regarding the scope of the Corps' dredging project, the Staff's conclusions are reasonable and adequately supported. The CEQ regulations provide that an agency should make clear when information is incomplete or lacking. See 40 C.F.R. § 1502.22. The Staff did this, including in the EIS a statement that "[a]t the present time the dredging project is incompletely defined, the amount of material to be removed is unknown, and the locations of the dredged material disposal areas have not been identified." FEIS at 7-20.

Q11: What is the purpose of your testimony?

A11: I have prepared a report, "Analysis of Impacts of Navigation Channel Maintenance for Barge Delivery of Materials for Construction of Vogtle Units 3 & 4 on the

Ecology of the Savannah River,” analyzing the environmental impacts of the Corps dredging project, a true, accurate, and complete copy of which is filed as Exhibit SNCR00051 (“Analysis of Impacts of Navigation Channel Maintenance for Barge Delivery of Materials for Construction of Vogtle Units 3 and 4 on the Ecology of the Savannah River.” Charles C. Coutant, Ph.D. (January 2, 2009).)

Q12: Are the scholarly or learned journals, articles or treatises referenced your report of the type commonly relied upon in your profession?

A12: Yes.

Q13: What prompted your preparation of this report?

A13: Since publication of the FEIS, further information defining the expected scope of the potential dredging of the Savannah River has been developed. Southeast Marine has surveyed the river between the VEGP and the Savannah River harbor and has provided detailed depth and width information for the river reaches between VEGP and the Savannah River harbor, identifying the areas most likely to require dredging along with the amount of dredged material. I reviewed this information and based my conclusions on this information. This analysis serves to supplement the FEIS’ analysis of cumulative impacts from dredging, given that the scope of any Corps’ dredging effort is now better understood.

Q14: Does your report address impacts from additional upstream reservoir releases?

A14: No. I understand that no additional releases will be requested or necessary..

Q15: What conclusions do you reach in your report regarding impacts to aquatic species from dredging?

A15: In my opinion, impacts of dredging on aquatic life will be localized, temporary and not biologically significant on a broad scale of geography or animal populations of the 110 miles of the Savannah River.

Q16: Does this conclude your testimony?

A16: Yes.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

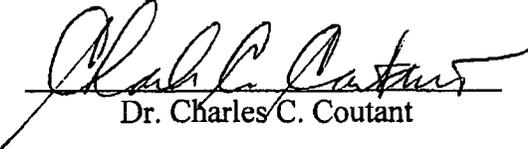
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of) Docket No. 52-011-ESP
)
Southern Nuclear Operating Company) ASLBP No. 07-850-01-
) ESP-BD01
)
(Early Site Permit for Vogtle ESP Site)) March 11, 2009

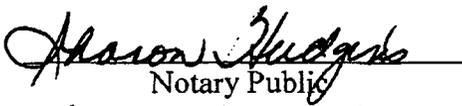
AFFIDAVIT OF DR. CHARLES C. COUTANT IN SUPPORT OF SOUTHERN NUCLEAR'S
REVISED DIRECT TESTIMONY ON ENVIRONMENTAL CONTENTION 6.0

I, Dr. Charles C. Coutant, do hereby state as follows:

1. I have read the foregoing prepared testimony regarding environmental matters at the Plant Vogtle Site.
2. I attest to the accuracy of those statements, support them as my own, and endorse their introduction into the record of this proceeding. I declare under penalty of perjury that those statements, and my statements in this affidavit, are true and correct to the best of my knowledge, information and belief.


Dr. Charles C. Coutant

Subscribed and sworn to before me
this 10 day of March, 2009.


Notary Public
My Commission Expires 6-9-09

1 MS. ALLEN: Next is Dr. Coutant's rebuttal
2 testimony.

3 Dr. Coutant, was the testimony entitled
4 "Southern Nuclear Operating Company's Rebuttal
5 Testimony of Dr. Charles C. Coutant on Environmental
6 Contingent 6.0," which is dated February 6th, 2009 and
7 has been provided to the court reporter in electronic
8 format under file name "Coutant 6.0 Rebuttal
9 Testimony," prepared by you or under your supervision
10 and direction?

11 DR. COUTANT: Yes.

12 MR. BLANTON: And is it true and correct
13 to the best of your knowledge and belief?

14 DR. COUTANT: Yes.

15 MS. ALLEN: Your Honor, we move that this
16 testimony be entered.

17 JUDGE BOLLWERK: All right. Any
18 objections?

19 (No response.)

20 JUDGE BOLLWERK: Hearing none, then the
21 rebuttal testimony of Dr. Coutant relating to
22 Contention EC 6.0 is admitted and should be placed
23 into the record as if read as DDMS Item ID 59133.

24 (Coutant Rebuttal Testimony (DDMS-59133)
25 to be inserted at this point.)

NEAL R. GROSS

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WASHINGTON, D.C. 20005-3701

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	Docket No. 52-011-ESP
Southern Nuclear Operating Company	)	ASLBP No. 07-850-01-ESP-BD01
(Early Site Permit for Vogtle ESP Site)	)	February 6, 2009

**SOUTHERN NUCLEAR OPERATING COMPANY'S
REBUTTAL TESTIMONY OF DR. CHARLES C. COUTANT
ON ENVIRONMENTAL CONTENTION 6.0**

Q1: Please state your full name, address and current occupation.

A1: My name is Charles Coe Coutant. I am a retired Distinguished Research Staff Member of the Oak Ridge National Laboratory, Oak Ridge, Tennessee. My combined business and home address is 120 Miramar Circle, Oak Ridge, TN 37830-8220. I now serve as a private consultant on matters of aquatic ecology and fisheries biology.

Q2: Have you previously provided written testimony in this proceeding?

A2: Yes. I submitted pre-filed written testimony on environmental contentions ("EC") 1.2, 1.3 and 6.0 dated January 9, 2009.

Q3: What is the purpose of your testimony?

A3: The purpose of my testimony is to respond, on behalf of Southern Nuclear Operating Company ("SNC") to certain materials submitted by Joint Intervenors on January 9,

2009, and revised on February 2, 2009, regarding EC 6.0. I am filing separate rebuttal testimony on EC 1.2 and EC 1.3.

Q4: To what materials submitted by Joint Intervenors regarding EC 6.0 are you responding?

A4: My response is directed at (a) "Joint Intervenors' Revised Initial Written Statement of Position and Prefiled Direct Testimony," dated February 2, 2009; (b) "Revised Pre-filed Direct Testimony of Donald F. Hayes in Support of EC 6.0," dated February 2, 2009, and Joint Intervenors' exhibits referenced therein; and (3) "Revised Pre-filed Direct Testimony of Shawn P. Young in Support of EC 6.0," dated February 2, 2009, and Joint Intervenors' exhibits referenced therein.

Q5: Dr. Hayes testifies in A.14 of his testimony that the FEIS should have given a range of estimates of environmental impacts from dredging. In your opinion, is it useful for an EIS (and consistent with NRC guidelines) to provide a range of estimates as Dr. Hayes suggests.

A5: No. It does not seem reasonable to me. In this case, since the information to narrow the range is not yet available, the only "range" would be from zero to maximum impacts. Such a broad "assessment" would not usefully inform the decision-maker.

Q6: Dr. Young recommends in A.31 of his testimony a "thorough freshwater mussel survey for the entire affected area." In your opinion, is such a survey warranted in view of the localized sites and limited duration of the dredging currently anticipated?

A6: Dr. Young appears to present this recommendation as a need for a mussel survey of the entire river from Vogtle to the Savannah River estuary. I do not believe that such an

extensive survey is warranted considering the limited area to be dredged, if at all. Aside from the limited amount of dredging currently anticipated, the types of habitats that are likely to be dredged are known from existing studies not to be favored by freshwater mussels. As I discussed in my dredging report (Exhibit SNC000051), most dredging would remove sand bars that have accumulated at the insides of bends or in the channel. Detailed studies of mussels in the nearby Pee Dee River basin (Savidge 2006, cited in Exhibit SNC000051, and submitted as SNC000066) provide a useful baseline for the ecologically similar Savannah River. The Pee Dee basin study showed that shifting sand is poor habitat for mussels. The study concluded that “[t]he stability of substrate appeared to be the most important factor determining distribution of mussels in all of the sites surveyed Much of the habitat . . . is of poor quality for freshwater mussels due to unstable, shifting sediment. The best mussel habitat in these rivers is often restricted to narrow troughs, usually within the thalweg adjacent to river banks.” (SNC000066 at p. 30). This detailed mussel survey is a reasonable surrogate for the study requested by Dr. Young. From it we can conclude that anticipated dredging of the Savannah River for Vogtle, which would concentrate on specific sites of shifting and depositing sediment and not on the already deep troughs, would have only a small impact on mussel fauna.

Q7: Dr. Young seems to indicate that impacts of dredging would extend into the Savannah River estuary. In your opinion, would the impacts of dredging for construction of Units 3 and 4 extend to the Savannah River estuary?

A7: No, they would not. Although some dredging is possible in small, localized zones of the river downstream of Vogtle to the head of the estuary, there would apparently be no dredging attributed to Vogtle in the estuary.

Q8: In your opinion, would the dire biological impacts enumerated by Dr. Young in A.30 of his testimony regarding dredging occur at ecologically significant levels for the river ecosystem?

A8: As I have testified previously (Exhibit SNC000051), my independent analysis indicates that it is unlikely that there would be ecologically significant impacts to the Savannah River from dredging on the order anticipated by the River Survey. Since publication of the FEIS, additional information has been provided concerning the actual river conditions and the need for dredging. I evaluated each of the impacts hypothesized by the NRC staff in the FEIS and by Dr. Young in his earlier submissions, *see* Declaration of Shawn Paul Young, Sept. 22, 2008, and found them to be small and insignificant under the currently anticipated scope of dredging. In accord with the testimony of the Joint Intervenors' witness Dr. Hayes, the amount of impact is determined by the amount of dredging. In this case, dredging would be of limited geographic extent, and the impacts would be small for the Savannah River ecosystem.

Q9: Dr. Hayes asserts in A.21 of his testimony that sediment management from dredging would be a problem and that Confined Disposal Facilities (CDF) would be necessary. Do you agree?

A9: That sediment from dredging will have to be managed is true. However, current information suggests (and is discussed in my previous testimony, Exhibit SNC000051) that the most likely sediment disposal method for the few localized sites that might be dredged would be to load the sand onto barges for use downstream where sand is needed or to dispose of the sand in existing disposal areas in the lower river. Thus, new CDFs would not be necessary in the reach between Vogtle and the estuary.

Q10: In your opinion, does the study cited by Dr. Hayes in A.23 of his testimony, (Smith et al.; Exhibit JTI000040) provide reliable evidence that “may suggest that hazardous materials are a concern” for sediments in the Savannah River between Vogtle and RM 36 where some dredging may occur?

A10: No.

Q11: Why is that?

A11: There are several reasons. First, the paper was published in the proceedings of a meeting and does not appear to have been peer reviewed (a generally accepted method for ensuring quality). Peer review and careful editing would have caught some of the document’s deficiencies, such as not giving units for mercury concentration in Table 1. Second, the study concerned locations in the immediate vicinity of a Chlor-alkali plant at Augusta (the discharge canal and stations in the Savannah River immediately upstream and downstream of the canal discharge), not in the river reach between Vogtle and the estuary where selective dredging would potentially occur. Third, the study found that differences in the mercury concentrations in the Savannah River upstream and downstream of the plant’s discharge were not statistically significant. Fourth, the mean mercury concentrations for downstream samples shown in the paper’s Table 1 are within the freshwater sediment background levels (4-51 ppb) reported by NOAA in its Screening Quick Reference Tables. See Nat’l Oceanic & Atmospheric Admin., Screening Quick Reference Tables at http://response.restoration.noaa.gov/book_shelf/122_NEW-SQUIRTS.pdf. SNC000067. If relevant at all, these study results contradict Dr. Hayes’ contention.

Q12: Are SNC000066 and SNC000067, identified in this rebuttal testimony, true, accurate

and correct copies?

A12: Yes.

Q13: Are the scholarly or learned journals, articles or treatises referenced in this rebuttal testimony of the type commonly relied upon in your profession?

A13: Yes.

Q14: Does this conclude your testimony?

A14: Yes.

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NUCLEAR REGULATORY COMMISSION

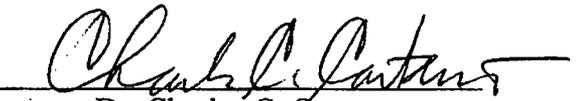
BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	Docket No. 52-011-ESP
)	
Southern Nuclear Operating Company	)	ASLBP No. 07-850-01- ESP-BD01
)	
(Early Site Permit for Vogtle ESP Site)	)	February 6, 2009

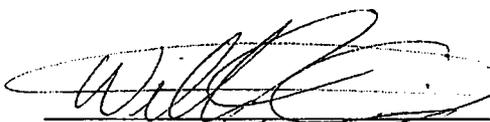
AFFIDAVIT OF DR. CHARLES C. COUTANT IN SUPPORT OF SOUTHERN NUCLEAR'S
REBUTTAL TESTIMONY ON ENVIRONMENTAL CONTENTION 6.0

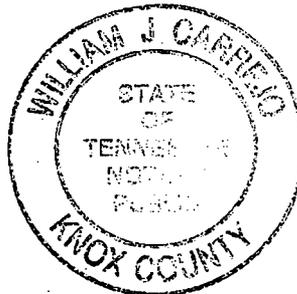
I, Dr. Charles C. Coutant, do hereby state as follows:

1. I have read the foregoing prepared rebuttal testimony regarding environmental matters at the Plant Vogtle Site.
2. I attest to the accuracy of those statements, support them as my own, and endorse their introduction into the record of this proceeding. I declare under penalty of perjury that those statements, and my statements in this affidavit, are true and correct to the best of my knowledge, information and belief.


Dr. Charles C. Coutant

Subscribed and sworn to before me
this 2nd day of February, 2009.


Notary Public



1 JUDGE BOLLWERK: I think we have a few
2 exhibits to do.

3 MS. ALLEN: Yes, Your Honor, we have
4 several exhibits to enter for EC 6.0.

5 JUDGE BOLLWERK: I will do my best not to
6 mess up the numbers this time.

7 All right. We start with 43?

8 MS. ALLEN: Yes, sir. The first Exhibit
9 SNC000043, Jeffrey L. Neubert CV.

10 JUDGE BOLLWERK: All right. Then let the
11 record reflect that Exhibit SNC000043 is marked for
12 identification.

13 (Whereupon, the document referred to was marked as
14 Exhibit No. SNC000043-00-BD01 for
15 identification.)

16 MS. ALLEN: SNC000044, Benjamin B. Smith,
17 Jr. CV.

18 JUDGE BOLLWERK: Let the record reflect
19 that Exhibit SNC000044 has been marked for
20 identification.

21 (Whereupon, the document referred to was marked as
22 Exhibit No. SNC000044-00-BD01 for
23 identification.)

24 MS. ALLEN: SNC000045, Captain H. David
25 Scott CV.

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1 JUDGE BOLLWERK: Let the record reflect
2 that Exhibit SNC000045 has been marked for
3 identification.

4 (Whereupon, the document referred to was marked as
5 Exhibit No. SNC000045-00-BD01 for
6 identification.)

7 MS. ALLEN: SNC000046, Savannah River
8 Survey, Southeastern Marine 2008.

9 JUDGE BOLLWERK: Let the record reflect
10 that Exhibit SNC000046 has been marked for
11 identification.

12 (Whereupon, the document referred to was marked as
13 Exhibit No. SNC000046-00-BD01 for
14 identification.)

15 MS. ALLEN: SNC000047, U.S. Army Corps of
16 Engineers Final Environmental Impact Statement for the
17 Savannah River navigation maintenance, September 1976.

18 JUDGE BOLLWERK: Let the record reflect
19 that Exhibit SNC000047 has been marked for
20 identification.

21 (Whereupon, the document referred to was marked as
22 Exhibit No. SNC000047-00-BD01 for
23 identification.)

24 MS. ALLEN: SNC000048, J. Strom Thurmond
25 Dam and Lake Water Control Plan and Guide Curves.

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1 JUDGE BOLLWERK: Let the record reflect
2 that Exhibit SNC000048 has been marked for
3 identification.

4 (Whereupon, the document referred to was marked as
5 Exhibit No. SNC000048-00-BD01 for
6 identification.)

7 MS. ALLEN: SNC000049, December 15, 2008
8 E-mail from Matthew Montz to Tom Moorer.

9 JUDGE BOLLWERK: Let the record reflect
10 that SNC000049 has been marked for identification.

11 (Whereupon, the document referred to was marked as
12 Exhibit No. SNC000049-00-BD01 for
13 identification.)

14 MS. ALLEN: SNC000050, NUREG 1087, final
15 environment statement related to the operation of
16 Vogtle Electric Generating Plant, Units 1 and 2, dated
17 March 1985, summary and conclusions.

18 JUDGE BOLLWERK: Let the record reflect
19 that SNC000050 has been marked for identification.

20 (Whereupon, the document referred to was marked as
21 Exhibit No. SNC000050-00-BD01 for
22 identification.)

23 MS. ALLEN: SNCR20051, analysis of impacts
24 of navigation channel maintenance for barge delivery
25 of materials for construction of Vogtle Units 3 and 4

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1 on the ecology of the Savannah River, Charles C.
2 Coutant, Ph.D., January 2nd, 2009.

3 JUDGE BOLLWERK: Let me just check one
4 thing. Is it R or R2? R2, okay, all right. Then let
5 the record reflect that Exhibit SNCR20051 has been
6 marked for identification.

7 (Whereupon, the document referred to was marked as
8 Exhibit No. SNCR20051-00-BD01 for
9 identification.)

10 MS. ALLEN: SNC000066, fresh water mussel
11 surveys of the Pee Dee river basin in South Carolina.

12 JUDGE BOLLWERK: All right. Let the
13 record reflect that Exhibit SNC000066 has been marked
14 for identification.

15 (Whereupon, the document referred to was marked as
16 Exhibit No. SNC000066-00-BD01 for
17 identification.)

18 MS. ALLEN: And finally, SNC000067, NOAA
19 screening quick reference tables.

20 JUDGE BOLLWERK: Let the record reflect
21 that Exhibit SNC000067 has been marked for
22 identification.

23 (Whereupon, the document referred to was marked as
24 Exhibit No. SNC000067-00-BD01 for
25 identification.)

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1 MS. ALLEN: Your Honor, we would move that
2 these exhibit would be admitted.

3 JUDGE BOLLWERK: All right. Any
4 objections?

5 (No response.)

6 JUDGE BOLLWERK: Hearing none, check me
7 and let me know if I don't get this right. The
8 following exhibits are admitted into evidence:
9 SNC000043, 44, 45, 46, 47, 48, 49, 50, SNCR20051,
10 SNC000056 --

11 MS. ALLEN: Your Honor, that should be 66.

12 JUDGE BOLLWERK: Six, six. I'm sorry.
13 Thank you.

14 Let's correct the record. SNC000066 and
15 67 are admitted into evidence.

16 (Whereupon, the documents previously marked as Exhibit
17 Nos. SNC000043-00-BD01, SNC000044-00-BD01,
18 SNC000045-00-BD01, SNC000046-00-BD01,
19 SNC000047-00-BD01, SNC000048-00-BD01,
20 SNC000049-00-BD01, SNC000050-00-BD01,
21 SNCR20051-00-BD01, SNC000066-00-BD01 and
22 SNC000067-00-BD01 were received in
23 evidence.)

24 MS. ALLEN: Thank you.

25 JUDGE BOLLWERK: And at this point I

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1 believe we are ready to begin our questioning of this
2 panel, and I have had Judge Trikouros and Judge
3 Jackson doing all of the work up to this point. Now
4 it's my turn.

5 All right. Gentlemen, let's start with
6 your direct testimony for the panel of Neubert, Smith
7 and Scott. In your Answer 18 on your February 9th
8 prefiled direct testimony, you testified that the
9 survey noted -- this, again, is the January 9th
10 version -- that the survey noted the locations where
11 the depth of the practical navigation channel was less
12 than five feet, and then this was revised in the March
13 6th version to six feet. This is a significant
14 change, given that you testified that the expected
15 operational target for a barge of this size with 730
16 tons of cargo weight is five and a half feet.

17 Why the change? Can you explain what
18 happened in terms of the five feet to six feet?

19 MR. NEUBERT: Your Honor, Jeff Neubert for
20 the Applicant.

21 The operational depth of the barge is
22 projected to be five and a half feet. Clearly, we
23 need more than five and a half feet of water in order
24 to navigate the Savannah River, and when we went
25 through our evaluation, we were looking for depths

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1 that were less than six feet, which meant that
2 anything that was in the five foot range was something
3 that we wanted to take a closer look at, and so we had
4 that five foot in our mind, and it was simply an error
5 that we made whenever we reported out on that.

6 JUDGE BOLLWERK: And so the table then
7 that relates to Question 20, which shows various
8 material depth, material amounts, I believe, can you
9 go to that table, Andy? Mr. Wilkey, if you could.
10 Twenty, I believe it's right there.

11 Basically the different places you felt it
12 was necessary to dredge for a depth of two feet I
13 believe it shows, different widths and different
14 lengths and the number of cubic yards, that's then
15 based on a depth of six feet as opposed to five feet.

16 MR. NEUBERT: That is correct.

17 JUDGE BOLLWERK: All right. In Answer 5
18 of your prefiled direct testimony, you testified that
19 you identified eight locations where only
20 approximately 36,500 cubic yards of material would
21 need to be removed. How does this limited dredging
22 compare to what would be needed to restore the federal
23 navigation channel to its authorized specification?

24 And, again, I don't remember the exact,
25 but I know it was nine foot in depth. I don't

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1 remember what the width. I think maybe it was 900
2 feet in width.

3 MR. NEUBERT: Your Honor, the survey that
4 we did was a navigational survey. We were simply
5 trying to determine what it would take to move a barge
6 loaded as we've already described from Savannah to the
7 plant Vogtle site. So we did not make any comparison
8 between our survey and the U.S. Army Corps of
9 Engineers' nine foot channel depth.

10 JUDGE BOLLWERK: But I take it it would be
11 significantly more.

12 MR. NEUBERT: I believe that's correct,
13 yes.

14 MR. MOORER: Your Honor, just to clarify,
15 Tom Moorer for the Applicant.

16 JUDGE BOLLWERK: Yes.

17 MR. MOORER: I think you said nine by 900
18 feet. The Corps channel as I understand it is nine by
19 90 feet.

20 JUDGE BOLLWERK: Nine by 90? Okay. I'm
21 glad. That is only off by a factor of ten, which is
22 pretty good for a lawyer. So that's not much good for
23 an engineer.

24 Mr. Neubert, in Answer 7 to your direct
25 prefiled testimony, you testified that you're

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1 currently planning -- that the current plan is for
2 March 2012 for the first shipment and November 2014
3 for the final barge shipment.

4 Approximately how many barge trips will
5 occur between that period, between March of 2012 and
6 November of 2014?

7 MR. NEUBERT: Your Honor, the number of
8 barge trips is dependent to a great extent on the
9 navigation channel that is available to us. With the
10 minimal channel that we tried to establish with our
11 survey, the number of barge trips for each unit of
12 plant Vogtle 3 and 4 would take approximately 30 barge
13 trips. So a total of 60 over that time frame.

14 JUDGE BOLLWERK: Meaning one up and one
15 down; am I -- you had 6 -- 30?

16 MR. NEUBERT: No, sir. The 30 would be
17 for one unit and --

18 JUDGE BOLLWERK: Oh, right. I'm sorry. I
19 apologize. All right. So it's 60 basically for each
20 unit. You consider them separately then?

21 MR. NEUBERT: The 30 is for each unit. So
22 60 for the two units.

23 JUDGE BOLLWERK: Total.

24 MR. NEUBERT: That's correct.

25 JUDGE BOLLWERK: All right.

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1 MR. NEUBERT: But that would be round
2 trips. Each barge that takes components to the plant
3 would come back empty.

4 JUDGE BOLLWERK: Thirty up, 30 back, 30
5 up, 30 back.

6 MR. NEUBERT: Yes, sir. That's correct.

7 JUDGE BOLLWERK: All right, and you
8 mentioned the depth of the channel. Can you sort of
9 give me an idea of how that would vary? I mean, what
10 would be the factors that you take into account in
11 terms of what you'd put on the barge, how many trips
12 you'd have to make?

13 MR. NEUBERT: As we stated in our
14 testimony, the survey that we did and the conditions
15 in the Savannah River right now are at extreme low
16 water levels because of the extended drought that's
17 been taking place in the southeast. So certainly the
18 flow rate of the river would affect the channel depth
19 that's available to us, and the dredging estimate that
20 we came up with was based on those extremely low
21 levels of water flow.

22 So if the flow is increased, the channel
23 depth available to us would be increased as well, and
24 it would be possible that we might be able to load
25 barges more heavily, increase the draft on those

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1 loaded barges, but take more equipment on each trip up
2 the river.

3 So it's going to be a condition of the
4 flow rate and the channel depth that's available to us
5 at the time of shipment.

6 JUDGE BOLLWERK: And to what extent would
7 the flow rate affect -- I mean, you've given a depth.

8 You want to get it down to a six foot depth, but how
9 is that affected by the flow rate at any given time?

10 I mean, if it's higher, do you have to
11 dredge less?

12 MR. NEUBERT: Potentially that's correct.

13 You asked a question earlier that I didn't give you a
14 full answer on, I believe. You asked about the Corps
15 of Engineers' channel, the nine foot channel.

16 JUDGE BOLLWERK: Right.

17 MR. NEUBERT: Nine foot by 90 foot. That
18 was based on a flow rate that was much higher than the
19 current flow rate in the Savannah River. The channel
20 depth was based on a flow rate, as I understand it, of
21 6300 cubic feet per second, and when we did this --

22 JUDGE BOLLWERK: Which is about double
23 approximately of what it is -- about a little less
24 than double of what it has been recently? Is that--

25 MR. NEUBERT: About double what it was

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1 whenever we did our survey last -- Captain Scott did
2 our survey last summer. Yes, that's correct.

3 So the flow rate certainly is going to --
4 if it was higher than that, it's going to increase the
5 channel depth available to us with or without
6 dredging, and if it goes lower than that, of course,
7 it would have an adverse impact on the channel depth.

8 JUDGE BOLLWERK: And in terms of any
9 permit or Corps authority to dredge, how is that
10 determined at any given point, given the river goes up
11 and down? How do you know how much you're going to --
12 how is that authorization work in terms of what you're
13 given authority to dredge or what the Corps would
14 decide to dredge?

15 Because I understand there's one process
16 where you come in and apply for a permit. Then you
17 would do the dredging. There's another process where
18 the Corps actually does the dredging. Correct me if
19 I'm wrong.

20 MR. NEUBERT: Yes, sir, I think I
21 understand your question, and I believe the answer is
22 that the Corps was authorized to maintain that nine
23 foot by 90 foot channel on the Savannah River based on
24 the flow conditions that they had established for
25 that, although I understand that at some time in the

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1 recent past they eliminated that flow requirement. So
2 the permitting process, we haven't proceeded down that
3 path for us to try and obtain our own permit to dredge
4 the river. So I really don't have an answer for you
5 there, what we would base that permit application on.

6 It's conjecture at this time that we would do so.

7 JUDGE BOLLWERK: But in your permit would
8 you have to specify a flow rate on which to tell them
9 that you're doing your dredging based on this flow
10 rate? If it's less than this, we would do more
11 dredging or more than this we'd do less dredging?

12 MR. MOORER: Your Honor, if I can maybe
13 take a crack at that for you.

14 JUDGE BOLLWERK: That's fine. Whatever.

15 MR. MOORER: Tom Moorer for the Applicant.

16 The dredging that has been -- that is
17 included in the testimony, the 36,000 cubic yards, was
18 based on a flow rate of 3700 cubic feet per second --

19 JUDGE BOLLWERK: Right.

20 MR. MOORER: -- at the Augusta Gauge, and
21 contemplates that if that dredging were done, then the
22 movements that Mr. Neubert spoke about, the 60
23 movements could be made with the drafts that we've
24 included in the testimony.

25 So basically if you have 3700 cubic feet

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1 per second available and the dredging was done that's
2 spoken about in here, you could make it at that level.

3 If the flow were to go up from that level, you would
4 need less channel. In other words, you have some
5 margin, I think is the way you would state it.

6 JUDGE BOLLWERK: Okay.

7 MR. MOORER: But if you're suggesting or
8 asking if there's a relationship in the permit itself,
9 either the Corps' work or the work that you discussed,
10 the possibility of Southern Nuclear having a permit,
11 the permit normally wouldn't reflect a flow stage
12 relationship. It basically would be an understanding
13 that the channel would be dredged to a certain depth
14 from a reference profile, and then available based on
15 the flow that was available.

16 JUDGE BOLLWERK: All right, and the
17 reference profile -- and again, I apologize if I'm
18 going into more detail -- but the reference profile is
19 set how? How is that determined?

20 MR. MOORER: Well, in the case of the
21 dredging that we've done now, the reference profile
22 would be 3700 cubic feet per second. In other words,
23 we would have a channel depth that would support our
24 barge movements at that flow.

25 JUDGE BOLLWERK: Okay.

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1 MR. MOORER: So that as the flow went up,
2 you would have margin, and if the flow were for some
3 reason to go down, you would, you know, be --

4 JUDGE BOLLWERK: Right. Then you couldn't
5 in theory or you'd have a greater problem using the
6 channel. You'd have to --

7 MR. MOORER: Yes, sir.

8 JUDGE BOLLWERK: -- wait for the flow to
9 go back up again.

10 MR. MOORER: Yes, sir.

11 JUDGE BOLLWERK: Okay. And a very maybe
12 general question about when you dredge. How long is
13 it good for? I mean, when do you have to go back and
14 re-dredge? When can you expect what you dredged out
15 is going to be filled in or begin to fill in to the
16 degree that it concerns you?

17 MR. MOORER: I think maybe one of these
18 gentlemen might could answer this question better than
19 I can.

20 CAPT. SCOTT: This is David Scott speaking
21 on behalf of the Applicant.

22 The channel as it is now has had many
23 years since the late '70s to establish itself.
24 Because of the low water conditions and the flow rate
25 over the past decade or several decades, there hasn't

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1 been a whole lot of change. The river is always in
2 flux though and does change slightly. The banks get
3 eaten away and trees fall in. The points of sand bars
4 continue to, you know, build out around where the
5 banks are falling in at that point.

6 Once the river is dredged, which really
7 amounts to just a cutting off the points in these
8 eight locations, I think all eight of them are on a
9 bend of the river where there's a point. The sand bar
10 has encroached onto the channel. Once you cut those
11 back, if the flow rates stay fairly normal, as they
12 have been, then you're not going to get a whole lot of
13 change. Over the two and a half year period that
14 they're talking about using the river, it should be
15 fairly stable.

16 JUDGE BOLLWERK: And how would you go
17 about then monitoring that to make sure that was the
18 case? In other words, you wouldn't obviously want to
19 bring something up the river and get stuck.

20 MR. MOORER: Actually that's what we hired
21 Mr. Scott for. That's his business. He would use his
22 survey boat to periodically monitor the condition of
23 the channel for us.

24 JUDGE BOLLWERK: All right. And by the
25 way I should invite you.

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1 JUDGE JACKSON: Judge Bollwerk, I wanted
2 to ask. It looks like you have about a half foot
3 margin that you would be looking at. You would dredge
4 to six feet and you need five and a half. Would that
5 be a comfortable margin typically in a barging
6 operation?

7 MR. SMITH: This is Benjamin Smith.

8 In our experience as barge operators, a
9 half foot is more than enough to keep a barge moving.

10 Our average speed going up the river will only be
11 about probably three knots because we're going against
12 the current. So we're not making a lot of headway.
13 We're not making a lot of speed, and therefore, we
14 don't have a lot of suction on our propellers. We're
15 going to be a fairly slow operation.

16 The Coast Guard requires for ships, they
17 require a two foot under keel clearance, and when a
18 ship is operating in a harbor. In this particular
19 situation, working in barges, we don't ever see a two
20 foot under keel clearance in probably a good
21 percentage of the Atlantic intracoastal waterway where
22 we operate on a regular basis.

23 So we are shallow water operators. We
24 generally work in waters that are very shallow
25 comparatively to other operators.

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1 JUDGE JACKSON: Okay. Thank you.

2 Captain Scott, in doing this survey, you
3 took data at about every tenth of a mile; is that
4 correct?

5 CAPT. SCOTT: Yes, sir.

6 JUDGE JACKSON: Is that also -- is that a
7 fairly standard distance in conducting this type of a
8 survey? In other words, do you feel sure that you
9 have a good chance of catching all the shallow places
10 and supplying yourself with the information you need
11 to estimate the extent of the dredging?

12 CAPT. SCOTT: Yes, sir. This survey that
13 I did over approximately a ten-day period, you know,
14 staying on the river, collecting the data on tenth of
15 a mile, and it completely crosses from bank to bank,
16 if a navigator was given this document to go up any
17 river in the world, he'd be absolutely ecstatic. It's
18 a fine navigational tool.

19 The use of this document to calculate
20 finite areas of dredging to determine total cubic
21 yards of spoil that are removed is not accurate
22 enough. It's good to determine where trouble spots
23 may be and a fairly accurate determination of the
24 quantity of spoil. It's an estimate on spoil removal.

25 JUDGE JACKSON: So you're saying on

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1 average you think you characterized the amount all
2 right, but there could be details that you would miss
3 in the actual dredging it.

4 CAPT. SCOTT: I presently do hydrographic
5 surveys in the Savannah Harbor, which is the lower end
6 of the river, 22 miles. I do surveys for Georgia Port
7 Authority and for the sugar refinery and things like
8 that on a before and after dredge event. The surveys
9 are required by the Corps and by DOT in order to
10 determine total cubic yardage removed.

11 This document that you have in exhibit is
12 not accurate enough for that. The soundings taken
13 before and after to determine with more accuracy the
14 amount of yardage removed has to be more finite.

15 JUDGE JACKSON: All right. I think I
16 understand.

17 Thank you.

18 JUDGE BOLLWERK: And in that regard, I
19 mean, you arrive at a spot that you've gotten your
20 authority to dredge, and you get there and you find
21 things are not what you thought they were going to be.

22 What kind of authority do you have; what kind of
23 limitations do you have in terms of your ability to
24 move forward under whatever permit you have without
25 having to go back to the Corps and say, "Hey, this

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1 wasn't quite the way we thought it is"? What latitude
2 do you have?

3 CAPT. SCOTT: I don't know. I'm not sure
4 of the Corps requirements on reporting in a change of
5 dredging activity. I believe there should be some
6 communication between the two.

7 MR. MOORER: Your Honor, let me if you
8 will --

9 JUDGE BOLLWERK: Sure.

10 MR. MOORER: -- let me add to that. Tom
11 Moorer, again, for the Applicant.

12 Based on my experience with the Corps of
13 Engineers, and I think you'll have the Corps here and
14 you can ask them the same question to see that I'm
15 consistent with it, but based on my experience, when
16 they go, they would take the survey of the magnitude
17 that we have now and go in and look at that. They
18 would actually go out in the field and do some more
19 finite surveys of those eight points before they
20 actually went in and dredged, and the permit or the
21 amount that they defined as the maximum amount for
22 dredging would likely include some level of margin in
23 the event that it was a little bit high or possibly a
24 little bit low.

25 So, you know, you wouldn't go out and

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1 dredge 36,323.5 cubic yards. There would be some
2 level of margin there to allow for that, and it's not
3 a huge amount, probably ten percent or so, but
4 normally what's in the field, you know, as David tried
5 to characterize, might be a little different, not
6 dramatically though.

7 JUDGE BOLLWERK: All right. In terms of
8 the process, and again, I'll ask the Corps about this
9 as well, what is the determining factor for Southern
10 in terms of whether you apply for a permit versus
11 having the corps do it? Does it have to do with the
12 appropriations process in the Congress or how does
13 this operate?

14 MR. MOORER: I think, again, Tom Moorer
15 for the Applicant, that our expectation is this river
16 is a fully authorized navigation channel. The
17 Congress has authorized it for navigation, although it
18 has not been maintained in a long time. It is our
19 expectation that the appropriate mechanism for that is
20 for the Corps to do the dredging of the navigation
21 channel, and that involves appropriation of money
22 through Congress, and they would work under their
23 authorization to do the dredging. So that I think
24 that would be the way we see this moving forward as
25 the preferred mechanism to do that.

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1 JUDGE BOLLWERK: And you're willing to
2 rely on the kindness of strangers, I take it.

3 MR. MOORER: As I think we've stated in
4 our testimony, this is one of several options that we
5 are considering. So it is clear in our minds this
6 doesn't foreclose us from going another way. So if
7 this option doesn't work, we'll move the material
8 another way.

9 JUDGE BOLLWERK: And what other options
10 are you looking at or how would you do that?

11 MR. MOORER: Let me answer that to start
12 with. I think Mr. Neubert might could amplify that a
13 little bit, but basically we address barge or
14 navigation. We address rail. We address over the
15 road, and then I think you might consider combinations
16 of those three mechanisms.

17 JUDGE BOLLWERK: All right. And in terms
18 of barge, I take it if you are going to use barge,
19 you're going to have to dredge it yourself; is that
20 correct?

21 MR. MOORER: No, sir. I guess we believe
22 that given the date, the March 2012 date, that there
23 is enough time for the Corps to execute the processes
24 they need, which would require the funding mechanism.
25 They would have to do a NEPA analysis to supplement

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1 their existing. There is an EIS that exists, and it's
2 in the record, but it is from the 1970s. They would
3 have to supplement that EIS, and there would have to
4 be certainly some NEPA analysis done, but we believe
5 there is significant time between now and the time the
6 shipments have to occur to allow that to happen.

7 JUDGE BOLLWERK: So you're not planning at
8 this point using the permitting process yourselves?

9 MR. MOORER: Not at this time, no, sir.

10 JUDGE BOLLWERK: Do you have a ballpark
11 figure about how much this is going to cost, whoever
12 does it, whether it's the Corps or you?

13 MR. MOORER: We really don't have a number
14 that I feel comfortable throwing a number out. I
15 think given the amount of dredging that we've
16 identified in the surveys that we've done, it's a very
17 minimal amount of dredging for the number of miles
18 that are affected. I think it's 130-something miles
19 and 36,000 cubic yards.

20 I can just say that from my experience,
21 and I'm trying, I guess, to help you from the
22 standpoint to get a handle on this; from my experience
23 with the Corps of Engineers, and I've worked with them
24 over a number of years, I would think this is in the
25 one to \$5 million range.

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1 JUDGE BOLLWERK: All right. That's ball
2 park.

3 MR. MOORER: Yes.

4 JUDGE BOLLWERK: Okay, good. Do you have
5 anything?

6 JUDGE TRIKOUROS: Yes, I have a question.
7 Normally would the Corps of Engineers dredge
8 minimally or would they not dredge more thoroughly
9 than this minimal that you've identified?

10 MR. MOORER: Judge, Tom Moorer again for
11 the Applicant.

12 That's difficult for me to say. I can't
13 really speak for the Corps. We felt it was prudent
14 for our particular situation here, and again, we were
15 trying to characterize what this particular movement
16 needed for us to determine what that amount was.

17 And the Corps might choose to take the
18 channel to the full nine foot by 90 foot depth or they
19 might choose to dredge just the amount here. I really
20 can't answer that.

21 MR. SMITH: I've got an answer for that
22 though, if you would, sir. Currently the Atlantic
23 intercoastal waterway, we would operate on on a
24 regular basis. It is a 12 foot authorized channel.
25 It is challenged with funding like all waterways are

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1 now.

2 What the Corps is doing when they do get
3 dredging dollars is they concentrate on shoal areas
4 only, and they maintain the shoals where we shoal the
5 most. They maintain those to about a nine foot draft.

6 So they are minimally dredging waterways so that
7 traffic can still operate without risk.

8 JUDGE TRIKOUROS: The definition of
9 minimal for them is nine feet. The definition of
10 minimal for the Applicant is six feet.

11 MR. SMITH: I would say that would be a
12 correct answer.

13 JUDGE BOLLWERK: A 3700 cfs is the
14 reference point, right?

15 MR. MOORER: Correct.

16 JUDGE TRIKOUROS: Can I go on?

17 JUDGE BOLLWERK: Absolutely.

18 JUDGE TRIKOUROS: The AP-1000 is
19 modularized design as I understand it.

20 MR. NEUBERT: That's correct.

21 JUDGE TRIKOUROS: Would those modules also
22 be barged on a preferential basis?

23 MR. NEUBERT: Your Honor, Jeff Neubert.

24 The AP-1000 design is modularized. There
25 are structural and equipment modules that go into the

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1 plant. At this point in time we don't plan on
2 shipping those modules. They're all designed to be
3 shipped via road or rail or barge, and at this point
4 in time we don't plan on using barge delivery for the
5 Vogtle project for the modules.

6 JUDGE TRIKOUROS: Would it be correct to
7 say that that would be the majority of shipment
8 requirements for the plant?

9 MR. NEUBERT: No, sir, not in terms of
10 barge delivery.

11 JUDGE TRIKOUROS: No, I mean in terms of
12 the total deliveries. Would it be correct to say that
13 the module shipments would be the majority of the
14 shipments?

15 MR. NEUBERT: No, sir. I believe it would
16 be correct to say that the modules are a significant
17 portion of the shipments for the plant, but we have
18 conventional shipments of truck and rail, and we also
19 have, of course, the barge shipments. So I think,
20 Your Honor, it would depend on how you wanted to
21 measure that, if it was in terms of dollars or tonnage
22 moved or perhaps even volume.

23 JUDGE TRIKOUROS: Well, I guess what I was
24 getting at, let me look at this in a binary way.
25 Barge or no barge, the majority of shipments would be

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1 no barge is what I'm hearing.

2 MR. NEUBERT: That is correct, yes.

3 JUDGE TRIKOUROS: So the barge shipments
4 would be limited to the heavy components.

5 MR. NEUBERT: That is correct.

6 JUDGE TRIKOUROS: and I assume that
7 includes the reactor vessel, the generators and
8 perhaps the reactor coolant pumps, that sort of thing?

9 MR. NEUBERT: That is correct.

10 JUDGE TRIKOUROS: Have you done any -- I
11 guess it's in your testimony regarding this non-barge
12 alternative. Have you looked at this in any kind of a
13 detail? I mean, has there been a detailed evaluation
14 done of the possibility of moving a steam generator to
15 the site, non-barge?

16 MR. NEUBERT: Yes, Your Honor, there have
17 been those evaluations made. We're currently working
18 on additional details of those evaluations, and I was
19 challenged in my position at Westinghouse to come up
20 with at least two viable delivery methods for every
21 component that goes into the AP-1000.

22 JUDGE TRIKOUROS: And you can say
23 comfortably at this point that there's no question
24 that if barge traffic were not a possibility that you
25 would be able to deliver all components to the site?

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1 MR. NEUBERT: We are absolutely certain
2 that we will be able to deliver all the components to
3 the site even without the barge delivery for Vogtle.
4 Westinghouse has built nuclear power plant around this
5 country and around the world. Many of those plants
6 are in locations that are not accessible by water, and
7 we have not had a situation where we weren't able to
8 deliver the components.

9 JUDGE TRIKOUROS: In your testimony,
10 Question 11, you used the words "in its current
11 state." What does that refer to? I could just read
12 it to you if you want.

13 MR. NEUBERT: Thank you.

14 JUDGE TRIKOUROS: I'll read it to you.
15 It's very short. It says, the question was, "What
16 size barge would be required for the transport of
17 components to the site?"

18 And the answer was, "A barge measuring 220
19 feet in length and 55 feet in width is the largest
20 barge that could reasonably navigate the Savannah
21 River in its current state and accommodate the weight
22 of the largest single component, which is the
23 generator."

24 "In its current state," were you referring
25 to pre or post dredging?

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1 MR. NEUBERT: Your Honor, we're referring
2 primarily to the river flow and the low state that it
3 was in, but also the minimum amount of dredging that we
4 identified that will need to be done so that we can
5 navigate the river in its current state.

6 JUDGE TRIKOUROS: So that was a current
7 state flow post dredging, post minimal dredging.

8 MR. NEUBERT: That is correct.

9 JUDGE JACKSON: Let me jump in if I could
10 take a moment. You projected that in looking at these
11 large shipments that they might start in 2012 perhaps
12 and go for it looked like maybe two or three years.
13 About how many shipments do you think you would be
14 looking at? How many barge loads?

15 MR. NEUBERT: Over that period we
16 anticipate, again, depending on the flow that's
17 available to us or the navigation channels available
18 to us, anywhere from 30 to 60 barge loads.

19 JUDGE JACKSON: Thirty to 60. As you
20 schedule these deliveries, do you have enough
21 flexibility so that you could look at issues such as
22 the existing flow at a given time? In other words,
23 could you delay a few months if you anticipated the
24 flow would be better then or is that part of this?

25 MR. NEUBERT: Yes, sir. That possibility

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1 is one of the considerations we have looked at. We
2 haven't made a final determination, but we have been
3 advised a number of times that the navigation on the
4 river is better in certain seasons than others.
5 Obviously the summer and the fall the flow tends to be
6 lower than winter and spring. So we have considered
7 that.

8 There are certain deliveries that could be
9 -- where the schedule could be adjusted somewhat, but
10 it's possible also that there will be certain
11 deliveries that are critical for plant construction
12 schedule.

13 So we haven't made a final determination,
14 but we certainly attempt to use that to our advantage
15 when the time comes.

16 JUDGE JACKSON: Okay. Would things work
17 out so that the total weight would be similar? I
18 guess what I'm asking, does the amount of draft you
19 need depend on the load, I assume. I don't know if
20 that's very sensitive in barges or not.

21 MR. NEUBERT: Well, for the record, Your
22 Honor, the AP-1000 plant design incorporates what's
23 called a steam generator. I'm sure you know that.

24 JUDGE JACKSON: Yes.

25 MR. NEUBERT: The steam generator in the

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1 AP-1000 design is the single largest nondivisible
2 component. So the five and a half feet of operating
3 draft that we used was based on one of these barges
4 that we described. At the time we were looking at a
5 210 foot barge in length. It was based on one of
6 those barges loaded with a single AP-1000 steam
7 generator.

8 So we would need a minimum of five and a
9 half feet in order to navigate the Savannah River with
10 that component loaded on a river barge.

11 JUDGE JACKSON: Okay. Thanks.

12 MR. NEUBERT: Does that answer your
13 question?

14 JUDGE JACKSON: Yeah, I think that's what
15 I wanted to get at. I was just wondering if you had -
16 - you clearly have certain constraining components
17 that are your most heavy components, and I assume that
18 there could be other components that are considerably
19 lighter and perhaps they could be --

20 MR. NEUBERT: Yes.

21 JUDGE JACKSON: -- shipped at a time when
22 the steam generators might not be able to be shipped.

23 MR. NEUBERT: Yes, and that was one of the
24 factors that we considered. The steam generators are
25 the single heaviest component. There are other

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1 components that we call major components that fall in
2 the range from 100 tons to the 730 tons of the steam
3 generator.

4 So, yes, those components could be loaded
5 individually or later on the -- with less total weight
6 on the barge and reduce the operating draft needed for
7 a particular voyage.

8 JUDGE JACKSON: All right. Thank you.

9 JUDGE BOLLWERK: You had mentioned that
10 some of the components have a fairly critical in terms
11 of when their arrival time has to be scheduled. Is
12 the steam generator one of those?

13 MR. NEUBERT: I believe that the steam
14 generator is one of those, yes, sir.

15 JUDGE BOLLWERK: So that gives you a
16 fairly narrow window that you have to fit it into then
17 in terms of how you deliver it or when you deliver it,
18 I should say.

19 MR. NEUBERT: Yes, sir.

20 JUDGE BOLLWERK: And so I'm taking it then
21 if the barge isn't available, then it goes on the
22 truck or the rail. Is that --

23 MR. NEUBERT: That is the plan, yes, sir.

24 JUDGE BOLLWERK: All right, and there is a
25 rail siding, I take it, that goes into the plant.

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1 That would be how it is delivered, by rail?

2 In terms of this particular component,
3 what would you use? I don't know.

4 MR. NEUBERT: There is an active rail line
5 from Savannah, the Port of Savannah, Georgia, to the
6 plant, and that line is available to us to deliver to
7 plant Vogtle, and Westinghouse has a 36 axle rail car
8 that we would use to deliver the steam generators.

9 JUDGE BOLLWERK: You wouldn't put it on a
10 truck?

11 MR. NEUBERT: We could, but our evaluation
12 at this point says that the fallback would be rail
13 delivery.

14 JUDGE BOLLWERK: Okay.

15 JUDGE TRIKOUROS: I'm not sure if this was
16 answered already, but do you have an idea what the
17 river flow would be that would eliminate the need for
18 dredging for that steam generator?

19 MR. NEUBERT: I'm sorry, sir. I'm having
20 trouble hearing.

21 JUDGE TRIKOUROS: Do you have an idea what
22 the river flow would be that would eliminate the need
23 for dredging for that steam generator component?

24 MR. NEUBERT: At this point in time we
25 don't have that information. We have some folks

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1 working on modeling the river for us so that we can
2 make those determinations, but that modeling hasn't
3 been completed at this point in time.

4 JUDGE TRIKOUROS: I presume it would be
5 greater than the flow rate for the Barnwell delivery
6 that was referenced in testimony.

7 MR. NEUBERT: If you're referring to the
8 Barnwell delivery in 2005, I believe that was a 1,000
9 ton component that was -- but I don't know the barge
10 dimensions that were used back then, nor do I know the
11 operating draft of that barge.

12 JUDGE TRIKOUROS: Oh, it was larger than
13 the steam generator.

14 MR. NEUBERT: That's my understanding,
15 yes, sir.

16 JUDGE TRIKOUROS: Okay.

17 MR. SMITH: Sir, this is Benjamin Smith.

18 That particular delivery was done on a 200
19 by 48 foot deck barge. The draft of that barge with
20 the component on deck was about an eight foot draft.

21 JUDGE TRIKOUROS: So that would set that
22 flow rate at the upper limit of what you would
23 require. That flow rate was about, I believe, about
24 10,500 or so cfs?

25 CAPT. SCOTT: That's correct. This is

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1 David Scott.

2 I was the acting surveyor for that
3 shipment, and it was 10,000 cfs. It was in excess of
4 what they required.

5 MR. MOORER: Your Honor, if I could add
6 something real quick, Tom Moorer for the Applicant.

7 This is something that the Corps may can
8 answer better than me, but I think that the 10,000 cfs
9 flow was probably well in excess of what would be
10 required for this steam generator. Again, if the
11 dredging was done, I'm confident of that, but if the -
12 - even without dredging the Corps' flow that they used
13 as a reference flow back when the channel was being
14 maintained was 6300 cfs. So with the minimum need
15 we've identified for dredging just intuitively, it
16 seems to me that that flow seems high.

17 So I think it would be something less than
18 that.

19 JUDGE TRIKOUROS: Right. Thank you.

20 MR. NEUBERT: Your Honor, Jeff Neubert.

21 I concur with Tom's statement.

22 JUDGE BOLLWERK: Do you have some more?

23 JUDGE TRIKOUROS: I was just looking.

24 JUDGE BOLLWERK: I'm the one that's typing
25 now.

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1 (Pause in proceedings.)

2 JUDGE BOLLWERK: Let me then summarize so
3 I understand what the current thinking is, what the
4 proposal is, what the plan is. And correct me
5 wherever I misstate something or modify as needed be.
6 Particularly for the large components barging would
7 be the preference; is that correct?

8 MR. MOORER: Yes, sir, that's correct.

9 JUDGE BOLLWERK: All right. Some of those
10 components, as we've discussed, do have windows of
11 time by which they have to be delivered, and if for
12 whatever reason barging is not available because the
13 dredging hasn't been done, the river is too low,
14 whatever reason, then there would be an alternative
15 which is to use either rail or transportation of a
16 different type, probably truck. That would be not
17 something you're going to throw in your van and drive
18 up to the plant gates.

19 So a couple of the drivers for this, to
20 use that term are the ability and the -- the ability
21 of the Corps of Engineers, frankly to undertake a
22 process that would provide for the funding and also
23 the permitting process, as well as the environmental
24 process that would be involved, in order to get the
25 authorization and be able to dredge, do the actual

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1 dredging. So that's a critical component of what
2 you're doing.

3 MR. MOORER: That is correct.

4 JUDGE BOLLWERK: And based on your
5 experience, any of you, how long are we talking about
6 that this dredging would take, assuming that it's
7 within a reasonable range of what you've indicated,
8 notwithstanding the fact you've said this isn't
9 sufficiently detailed? Are we talking about weeks,
10 days, months to do the sort of thing you're talking
11 about?

12 MR. NEUBERT: Your Honor, I want to ask
13 Dave Scott to answer that question.

14 CAPT. SCOTT: Yes, sir, Dave Scott.

15 To move 37,000, you know, roughly cubic
16 yards of sand is not a big endeavor. The sand,
17 depending on what the requirements of the Corps as far
18 as placement of the spoil areas, what to do with the
19 sand afterwards would alter the time factor, but the
20 actual digging, you're talking approximately a month
21 on the outside.

22 Just to be clear what 37,000 cubic yards
23 of sand is, for 130 miles of river it's peanuts. It's
24 a very small amount of material. One facility in
25 Savannah, the Imperial Sugar, the sugar refinery, they

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1 dredge using agitation dredging. They're 800 foot
2 long by 100 foot wide dock facility on a monthly basis
3 and they move 10,000 cubic yards each time. So in a
4 quarter, you know, quarter of a year, they've moved
5 the same amount of material is what we're looking at
6 here.

7 JUDGE BOLLWERK: And to the degree you can
8 speak to this, what kind of dredging methods would
9 they use? How would this material be moved as a
10 general rule?

11 CAPT. SCOTT: In the past on the Savannah
12 River, the method of moving the material was with a
13 hydraulic dredge, and they would back in the '70s,
14 they would broadcast it up onto a section of the land,
15 you know, pretty much free of the rising water that
16 might make it spread out again.

17 In this situation, I think possibly
18 containment areas similar to what's used at the lower
19 part of the river. These are diked areas that allow
20 the material to settle out and the water to drain off
21 on a shore basis.

22 JUDGE BOLLWERK: And do they transport
23 that material to the diked area in some way or do they
24 basically create the dike near where they're doing the
25 dredging?

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1 CAPT. SCOTT: It can be either or.
2 Another method is to put the sand which is actually
3 excellent sand -- it was mined for years up until the
4 '80s as construction sand -- to place that onto
5 barges, you know, and take it, you know, and sell it.

6 JUDGE BOLLWERK: Did I read I believe in
7 someone's testimony about taking it down and redoing
8 beach areas with it or maybe down in the river mouth
9 somewhere to build up the shore?

10 CAPT. SCOTT: That would be a possibility.
11 I don't think it would be economically viable, but
12 the sand is usable for a lot of purposes.

13 JUDGE BOLLWERK: Again, what contact have
14 you had with the Corps regarding your proposal?

15 MR. MOORER: Tom Moorer for the Applicant.
16 Your Honor, when we began this project, we
17 filed the early site permit in August of 2006.
18 Shortly after that we as part of what we felt like was
19 prudent planning began to meet with all of the
20 resource agencies, including the Corps of Engineers,
21 both the state agencies and the Corps of Engineers
22 about this project, and as part of our meetings with
23 the Corps of Engineers, we talked about this
24 particular issue just in the vein of what kind of
25 shape the river was in. We knew it had not been

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1 maintained in a long period of time, and you know, we
2 had a couple of meetings with them over that period of
3 time just, again, to introduce the subject.

4 JUDGE BOLLWERK: I take it subsequently
5 you delivered or gave them a copy of the report that
6 you did that's in the record in this proceeding?

7 MR. MOORER: We did. We had a meeting
8 back with them in August, I think, of 2008, and we did
9 provide them with that information at that point in
10 time.

11 JUDGE BOLLWERK: And any recent feedback
12 from them in terms of that report or your concerns at
13 all about getting the dredging done?

14 MR. MOORER: I think I probably should
15 defer to them in terms of what they think about this,
16 but I will say that I feel like our meeting was
17 beneficial and that they were, you know, willing to
18 listen, but they made it very clear they did not have
19 the funding in house to do this and that we had not
20 requested them, and we haven't requested them to do
21 anything at this point in time. So they're kind of in
22 a mode where they haven't been asked to do anything
23 officially so they're waiting on that.

24 JUDGE BOLLWERK: And you don't classify it
25 as a stimulus project, I take it.

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1 MR. MOORER: I think they would like that
2 to happen if possible.

3 JUDGE BOLLWERK: It doesn't work that way
4 I don't think, but anyway, given your discussions with
5 them, do you have any anticipation that they would
6 have any reason to use this as an opportunity to sort
7 of begin at what the congressional authorization in
8 terms of the river and do additional dredging or do
9 you think it's your project alone?

10 MR. MOORER: They've given us no
11 assurances that they'd do anything, but I think that
12 it certainly represents an opportunity to bring the
13 channel back and restore it for use by others as well.

14 JUDGE BOLLWERK: Once these components are
15 on site in terms of what you need to construct, is
16 there any other materials that you would then bring up
17 relative to the operation of the facility subsequently
18 that you're aware of?

19 MR. MOORER: Your Honor, let me answer it
20 this way. For the other facilities that Southern
21 Nuclear operates, we have used the navigation channel
22 for the Farley plant a number of times to bring in
23 replacement steam generators, for example, and I hope
24 this new plant won't need replacement steam generators
25 until long after I retire, but certainly having the

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1 availability of the navigation channel provides an
2 option for delivery of large equipment to the
3 facility. That's a real advantage

4 JUDGE BOLLWERK: How does what you're
5 contemplating here at least potentially compare to
6 what was done during the construction of Vogtle 1 and
7 2?

8 MR. MOORER: Jeff?

9 MR. NEUBERT: Jeff Neubert, Your Honor.

10 Delivery of the major components for
11 Vogtle 1 and 2 were done using the Savannah River and
12 the customer's barge slip on the Savannah River. So
13 it basically mirrors what we did for Vogtle 1 and 2.
14 At the time though during the construction of Vogtle 1
15 and 2, the Corps was actively maintaining the Savannah
16 River for navigation. So the issues that we're faced
17 with right now aren't the same.

18 JUDGE BOLLWERK: How big were the
19 components then you were bringing up river compared to
20 what you're looking at now?

21 MR. NEUBERT: The heaviest component for
22 Vogtle 1 and 2 was in about the 400 ton range. So the
23 AP-1000 steam generator is significantly heavier than
24 that. At that time we delivered two, a pair of steam
25 generators per barge load, as we've already discussed.

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1 At this point we're looking at the single AP-1000
2 steam generator loaded on a barge.

3 JUDGE BOLLWERK: I'm sorry. Can you give
4 me the weight of that again? I apologize.

5 MR. NEUBERT: About 400 tons.

6 MR. MOORER: Just, I guess, as a reminder,
7 the Vogtle 1 and 2 is a four loop plant, and the AP-
8 1000 as you know is a two loop plant. So the steam
9 generators are larger for the AP-1000.

10 JUDGE BOLLWERK: Do you have a question?

11 JUDGE TRIKOUROS: Yes.

12 JUDGE BOLLWERK: Go ahead, please.

13 JUDGE TRIKOUROS: I think we just found a
14 good use for some stimulus money.

15 I think it's Question 14, Mr. Moorner, your
16 testimony.

17 MR. MOORER: Yes, sir.

18 JUDGE TRIKOUROS: You indicate that the
19 only existing Corps of Engineers procedures for water
20 flow would be -- that only the existing procedures for
21 water flow would be in effect. Do those normal
22 procedures release extra water for navigation? I
23 mean, is that a normal -- would that be part of the
24 existing procedures?

25 MR. MOORER: Yes, sir, and I think what I

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1 was trying to say in my answer to that was to make it
2 very clear that this project, delivering the equipment
3 to Vogtle, does not consider additional special
4 releases made by the Corps of Engineers for
5 navigation, for example, the movement that was made to
6 the Savannah River site in 2005, I think, involved
7 some release of water by the Corps to support that, to
8 get that 10,000 flow.

9 I wanted to make it very clear that this
10 project has been planned on on the concept of the
11 Corps' water control plan, which is the way they
12 operate their reservoirs. Whatever releases are
13 available through their normal operations is what this
14 movements will be made on. There won't be any special
15 navigation releases then.

16 JUDGE TRIKOUROS: Right. I was asking if
17 special navigation releases or if navigation release
18 support is part of the normal Corps procedure. That's
19 all.

20 MR. MOORER: I understand, and the answer
21 to that is no, as I understand it. I mean Mr. Neubert
22 alluded to that earlier. The Corps used to have a
23 minimum flow from Thurmond Dam for navigation support,
24 and they dropped that minimum flow back in the 1990s
25 if I recall correctly. So there is no component for

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1 navigation in their water control plan now.

2 JUDGE TRIKOUROS: So back in the 1990s
3 there was no navigation, was there?

4 MR. MOORER: The navigation program, I
5 think the last maintenance was done in 1979, but there
6 were deliveries made up into the mid to late '80s, you
7 know, with the channel as it existed, and there were
8 movements that occur now although they're kind of on
9 an at risk basis. There's no Corps coordination of it
10 necessarily, but the old EIS that was done for the
11 Corps back in the '70s had a navigation flow
12 identified in it, and that flow stayed in the Corps'
13 planning process and in their procedures, and you can
14 ask them to identify the exact day, but I think in the
15 early 1990s, they revised their water control plan to
16 remove that minimum flow for navigation, and the
17 minimum flow now from Thurmond Dam is related to water
18 quality releases.

19 JUDGE TRIKOUROS: And do you know why they
20 did that? I mean, well, we can talk to them directly,
21 but do you know if it was done for drought concerns?

22 MR. MOORER: Your Honor, I don't know. I
23 think you would be prudent to ask them.

24 JUDGE TRIKOUROS: Thank you.

25 JUDGE BOLLWERK: I guess, Mr. Moorer,

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1 given that you're able to get the components to the
2 facility by rail or by truck, why do you want a barge?

3 MR. MOORER: I guess I'll start the answer
4 and ask Mr. Neubert --

5 JUDGE BOLLWERK: Anyone else as well. I
6 thought it might be appropriate for you, but anyone
7 may answer.

8 MR. MOORER: I think I can certainly get
9 started with it. Again, as we discussed, the heavy
10 components for Unit 1 and 2 were moved by barge. That
11 was a very successful way to move the shipments.
12 These are very heavy components and it requires a lot
13 of planning to get them moved, and I think typically,
14 and Jeff can follow with this, but typically if access
15 to barge is available, that's the preferred method for
16 heavy equipment movements.

17 We believe that the channel, based on the
18 information we have at this point in time can be made
19 available with relatively little work, and we wanted
20 to at least pursue that as one of our options.

21 JUDGE BOLLWERK: So these barges, these
22 components are going to be fabricated where?

23 MR. NEUBERT: They are fabricated in a
24 number of locations, Your Honor. Jeff Neubert.

25 The steam generators, which we talked

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1 about, I think somebody asked about the reactor vessel
2 that are coming out of Korea. There are other major
3 components that are coming out of Italy, and some out
4 of Japan.

5 JUDGE TRIKOUROS: So for the most part
6 they're going to be on a ship, and it would be
7 convenient to get them that location by ship and so I
8 guess that's the bottom line. The majority of the
9 trip is going to be getting them -- is going to be by
10 ship.

11 MR. NEUBERT: Yes, sir. The blue water
12 trip is the part of the voyage that's the most
13 extensive. We anticipate a transfer from ocean going
14 vessel to barge or rail at some intermediate point.
15 At this point we're looking at either Charleston or
16 Savannah, and that probably is ultimately going to be
17 decided based on the transport mode from that
18 intermediate point.

19 And, Your Honor, if I may, Tom, Mr. Moorer
20 answered earlier about the barge being preferable.
21 I've been in this business for a number of years, I
22 think in excess of 30, and there's sort of a natural
23 order of things. We built these, as I mentioned
24 earlier. Westinghouse has built these plants
25 throughout the United States and around the world, and

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1 the natural order of things is that we typically try
2 and go as far as we can by water because of the ease
3 and the accessibility of it, and then when we've
4 exhausted the ability to go by water, we transfer to
5 some other mode, and again, the natural order tends to
6 be water, rail and then overland.

7 But that's just a generality. Each
8 project kind of stands on its own. For example, we
9 did a project on the Ohio River, which is highly
10 navigable and maintained by the Corps of Engineers,
11 and we delivered those components to that plant --
12 that was Marble Hill in Indiana -- by rail because of
13 the conditions, the specific conditions for that site.

14 So in general, the natural order of things
15 is water, rail and highway, but each project, each
16 site stands on its own merits.

17 JUDGE BOLLWERK: And to what degree is
18 cost versus ease of delivery a factor?

19 MR. NEUBERT: Cost and ease of delivery
20 are probably the two primary factors in our logistics
21 management efforts at Westinghouse we have three
22 priorities. The first is safety as absolutely number
23 one. The second is schedule, and then third comes
24 cost.

25 JUDGE BOLLWERK: All right. Judge

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1 Trikouros, did you have anything further?

2 JUDGE TRIKOUROS: I think that's it.

3 JUDGE JACKSON: I had some --

4 JUDGE BOLLWERK: Go ahead.

5 JUDGE JACKSON: -- questions regarding
6 disposal of material that could be removed. Would
7 that make more sense to ask the Corps witnesses
8 directly, in your opinion, Mr. Moorer?

9 MR. MOORER: Your Honor, I think the
10 Corps probably could better speak to what they are
11 familiar with in terms of this river system. I think
12 Mr. Scott though characterized the three basic options
13 that we understand and are used and are available, and
14 I will say that the option of beach renourishment that
15 I think Judge Bollwerk suggested as an option is being
16 used more and more.

17 There has been a lot of hurricane damage
18 over the years on the Atlantic Coast, and the
19 availability of good sand for hurricane beach
20 renourishment from hurricane damage is a factor, and
21 certainly that would be something, I think, that would
22 be considered, and as you mentioned, the upland
23 disposal as well.

24 JUDGE JACKSON: Yeah, that was the part I
25 wanted to pursue a little bit, but I'll wait.

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1 MR. MOORER: I do not think the Corps
2 would pursue the disposal mechanisms that we used in
3 the '70s, which was the what they call within bank
4 disposal where it was side cast on the banks. I don't
5 think that's an option anymore. I don't think they
6 would even consider that.

7 JUDGE JACKSON: I guess by way of
8 perspective you mentioned, Captain Scott, that that
9 wouldn't be viewed as a huge dredging project, and
10 that's kind of what I was looking for, was the
11 perspective of a river that's been not dredged for
12 this many years. Is this about what one would expect
13 and dredging to this amount, would this be something
14 pretty unusual or is it something that at this level
15 happens all the time? Is this a big deal or not?

16 CAPT. SCOTT: Yes, sir. I can't speak for
17 the whole river system because it hasn't been done in
18 my time, but on the lower harbor where dredging is
19 done all the time constantly, it's 37,000. It's a
20 small event, nothing.

21 JUDGE JACKSON: I'm just interested in the
22 perspective of it. You've been involved in this for
23 some time, I assume.

24 CAPT. SCOTT: Yes, sir. I've been doing
25 these surveys since 1981.

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1 JUDGE JACKSON: Okay.

2 CAPT. SCOTT: There have been other
3 surveys on the Savannah River between Augusta and
4 Savannah. I've been involved with four of them over
5 the years for different movements.

6 JUDGE JACKSON: Okay. Thank you.

7 JUDGE BOLLWERK: In terms of the upland
8 disposal sites, are there any sites that you're aware
9 of currently that are there that they might use, given
10 they're sort of near these areas that might be
11 dredged, given what you've identified?

12 CAPT. SCOTT: David Scott.

13 No, sir. There are spoil areas,
14 designated spoil areas, but these are left over from
15 the '70s, the last time it was dredged, and there are
16 no upland disposal sites that I'm aware of.

17 JUDGE BOLLWERK: All right. In terms of
18 the sort of surveying you do, do you do any work, for
19 instance, looking at the biota in the area, the fish,
20 the animals that might be affected there? Are you
21 basically looking -- do you do that type of surveying
22 relative to dredging?

23 CAPT. SCOTT: No, sir.

24 JUDGE BOLLWERK: All right. Anything
25 dealing with the chemical composition of the dredged

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1 material?

2 CAPT. SCOTT: No, sir.

3 JUDGE BOLLWERK: It's basically just
4 surveying then?

5 CAPT. SCOTT: That's correct, getting the
6 vessel from Point A to Point B.

7 JUDGE BOLLWERK: Okay. Do you have
8 something else? Go ahead.

9 JUDGE TRIKOUROS: Just one quick question.
10 Would the cost differential between barging and non-
11 barging transport be on the order of magnitude of the
12 cost of the dredging?

13 MR. NEUBERT: Your Honor, Jeff Neubert. I
14 believe that that's probably a valid statement. We
15 don't have actual firm cost estimates for any of the
16 options at this point, but I believe that the order of
17 magnitude would probably be similar to the amount of
18 dredging, yes, sir.

19 JUDGE TRIKOUROS: So given that that would
20 be the case, then it would be the simplest route would
21 be to just pay for the dredging, would it not?

22 MR. NEUBERT: Your Honor, all other things
23 being equal, I think that would be a true statement,
24 yes.

25 MR. MOORER: Let me clarify that just a

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1 little bit though. I think if you're suggesting that
2 by paying for the dredging that Southern Nuclear would
3 obtain the permit to do the dredging themselves, I
4 think there are a lot of things involved there besides
5 cost that would make us not want to pursue that
6 option.

7 JUDGE BOLLWERK: Do you want to let us
8 know what some of those things are?

9 MR. MOORER: I can elaborate a little bit
10 on that. I guess the biggest thing is that we believe
11 that the permitting process in general, if we extended
12 our permit for 130-something miles, if you will, to do
13 this activity, opens up a lot of different avenues,
14 liability for example, cost perhaps. It might have
15 some impetus or impact on the other work that needs to
16 be done at the site under the authority of Section 404
17 and Section 10 of the Clean Water Act. There's just a
18 lot of unknowns there.

19 That's not a typical way to do this type
20 of work, and I think we're leery of it for that
21 reason.

22 JUDGE TRIKOUROS: Are those the only two
23 options, that either the Corps does the dredging and
24 pays for it or that you do the dredging and pay for
25 it?

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1 MR. MOORER: Those are the two options
2 that we have been made aware of by the Corps. We are
3 looking to see if there might be other options, but at
4 this point in time, those are the two, the only two
5 that we understand are viable.

6 JUDGE TRIKOUROS: The Corps doesn't accept
7 charitable donations for dredging?

8 MR. MOORER: You mentioned the stimulus
9 plan. Maybe you have some connections and you could
10 help us with that.

11 MR. NEUBERT: Your Honor, for the record,
12 this is Jeff Neubert.

13 I believe there is a third option, which
14 would simply be to hope that the rainfall increases
15 and the drought is over and the natural flow of the
16 river comes up. That option has been discussed, but
17 that's outside of our control. So that's one of the
18 reasons that we're reluctant to simply rely on that.

19 JUDGE BOLLWERK: It obviously depends on
20 timing. It needs to be up when you need to be there.

21 MR. NEUBERT: Yes, sir.

22 MR. MOORER: Exactly, and I think that's
23 one of the reasons that we believe we're pursuing this
24 avenue of the dredging, is that we don't believe we
25 can be prudent in planning and wait on it to rain. So

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1 we feel that we have to exercise this mechanism as
2 part of our prudent planning process.

3 JUDGE BOLLWERK: You had mentioned
4 extending the permit. I take it that was a reference
5 to the permit you will need for the dock or the slip.

6 MR. MOORER: Yes, sir. There will be a --
7 there will be 404, Section 404 Clean Water Act permit
8 for the intake structure, for the discharge structure
9 and also for a barge slip if we go this route. And
10 there will also be Section 10 permits under the Rivers
11 and Harbors Act required for those structures.

12 JUDGE BOLLWERK: And so I take it what you
13 were saying is that one option would be to amend,
14 extend, however you would do it that permit to include
15 the dredging; is that --

16 MR. MOORER: Well, as I understand the
17 Corps' rules, if we were to get a permit to dredge the
18 entire river at the same time we were pursuing permit
19 actions for the other mechanisms, that those permits
20 would be consolidated into one action. They can't
21 segment under their rules, and because of that, that
22 then makes it one big permit, and I think that was
23 the concern, is that we would tie those other permits
24 up with this action.

25 JUDGE BOLLWERK: Let me turn to Judge

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1 Jackson. Do you have any?

2 JUDGE JACKSON: No, not at this time.

3 JUDGE BOLLWERK: I need to talk to Dr.
4 Coutant for a couple of minutes.

5 (Pause in proceedings; the Judges
6 conferred.)

7 JUDGE BOLLWERK: Dr. Coutant, I have a
8 couple of questions, and I think it looks like Judge
9 Jackson has as well. There is an exhibit that the NRC
10 staff has put in, which is NRC000005, that has to do
11 with a mussel survey on the Savannah River, and in
12 your testimony and report, you have used a different
13 survey, the Pee Dee River survey.

14 Why did you choose that one as opposed to
15 the Savannah River survey?

16 DR. COUTANT: Well, that's a good
17 question, Your Honor, and I probably should have
18 clarified that in my testimony. The reason for
19 looking at either of those two studies, the surveys of
20 the mussels in the river, would be to try to find out
21 if the environment that would be dredged, the kind of
22 material that would be dredged is the kind of habitat
23 that would be occupied by the mussels.

24 And the survey that was done on the Pee
25 Dee was a much more extensive and comprehensive survey

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1 of all of the habitats in a river comparable to the
2 Savannah than the survey that was done on the Savannah
3 itself.

4 The stated objective of the Savannah
5 survey was to do a quick survey primarily focusing on
6 deep water habitats to survey the mussel species that
7 were there. It was a short survey in terms of time.
8 They did cover about 36 stations in something like
9 four or five days, including travel time between them
10 and pretty much focused on the deep water habitats,
11 whereas the Pee Dee River survey by the same people
12 using pretty much the same methods covered a much more
13 comprehensive coverage of the available habitats for
14 the mussels. In particular, they spent much more time
15 on the shifting sand habitats that would be the
16 subject of the possible dredging here.

17 And so on that basis and in my testimony I
18 simply said that the Pee Dee River study was a far
19 better study for this purpose than the other studies
20 on the Savannah, and I didn't actually cite the
21 Savannah River study.

22 But in spite of the potential contention
23 over which study was used, if you compare the two
24 studies, there's no difference in the substantive
25 bottom line, and that is that the shifting sand

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1 habitat that would be dredged if dredging occurs is a
2 very poor habitat for mussels, and if you'll allow me
3 to check my notes here I can give you some quotes from
4 the Savannah River survey itself, where they state --
5 this is on page 5 of the first full paragraph if you
6 want to bring it up. I don't know that we need to.

7 JUDGE BOLLWERK: I think that's NRC000005,
8 right?

9 DR. COUTANT: Yes. Yes, it is.

10 JUDGE BOLLWERK: Okay.

11 DR. COUTANT: And we didn't enter that
12 into evidence because the NRC already had.

13 JUDGE BOLLWERK: We only want one item
14 once.

15 DR. COUTANT: Okay. So their quote was,
16 "In general, mussels are most abundant in the
17 thalweg," that is, the deepest part of the channel,
18 "at the base of the river bank and are rare or absent
19 in the shifting sand dominated run in the center of
20 the channel," end quote, that is, the sand bars that
21 we're talking about.

22 JUDGE BOLLWERK: That's in the middle of
23 the first paragraph in Section 4.1.

24 DR. COUTANT: It's on page 5, the first
25 full paragraph, if you have that.

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1 JUDGE BOLLWERK: I think you were right --
2 you were there actually. You've moved. Right, go
3 back. There we are, and if you will bring that up,
4 right in the middle of the first paragraph under 4.1.

5 DR. COUTANT: And the report further
6 states that much of the channel habitat, quote, "is of
7 poor quality for fresh water mussels due to unstable
8 shifting sediment," end quote, and that's on page 24,
9 the second paragraph of Section 5.2.1. I think it's
10 back in the conclusion section.

11 So and that parallels very closely the
12 comments that were made in the Pee Dee River study,
13 which I cited in my testimony. So, again, the bottom
14 line is that the habitat or the environmental
15 characteristics of the material that would be dredged,
16 as Captain Scott characterized it, is the sand bars
17 that encroach on the channel. This is very poor
18 habitat for mussels, and they say they're either rare
19 or not there at all.

20 So the reason I use the Pee Dee, again,
21 was to answer the question directly, was primarily to
22 get a better fix on all of the available habitats,
23 particularly the ones that would be dredged.

24 JUDGE BOLLWERK: Now, have any of the
25 eight sites that they looked at been surveyed for

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1 mussels as far as you're aware?

2 DR. COUTANT: They have not specifically
3 been surveyed, but there was some correspondence
4 between the survey that was done by these folks on the
5 Savannah and some of the areas that would be dredged.

6 They didn't do any sampling close to the Vogtle site.

7 I think the nearest site to the Vogtle facility was
8 about 25 miles downstream, and then they were sort of
9 scattered at distances downstream from there, but they
10 sampled the typical -- and the Pee Dee study
11 especially -- sampled the typical habitats of this
12 kind of a reach of river.

13 So I feel fairly confident that they
14 characterized the types of habitats available.

15 JUDGE BOLLWERK: Anything in terms of the
16 study of the Savannah River in terms of any kind of
17 threatened, endangered species of concern, anything
18 like that that you saw in there?

19 DR. COUTANT: Yes, Your Honor. They did
20 identify a number, and I don't have the number in
21 front of me, but they did identify species that are
22 either rare, threatened, of concern, a variety of
23 categories for the various mussel species which would
24 be typical of any river in the Southeast unfortunately
25 for the mussels. Essentially any river in the

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1 Southeast used to have a lot of fresh water mussels
2 but does not now.

3 An example, I guess, would be the Academy
4 of Natural Sciences' surveys that have been done over
5 a long period of time that we talked about a few days
6 ago, and I think they started out with I don't know,
7 30-some species of mussels, and they're now down to
8 eight, and that's in the shallow water habitats that
9 they studied in their survey. It didn't include this
10 kind of habitat, but it's an example that this is a
11 river of concern.

12 Dr. Young did raise legitimately questions
13 of the potential impact on mussels, which certainly
14 stimulated us to look in more detail at that, but come
15 to the conclusion that the dredging as proposed, as we
16 understand it might happen, probably would have a very
17 small impact on any mussels in this kind of a bottom
18 substrate.

19 JUDGE JACKSON: In terms of mussels or
20 potential contamination, let's say a decision were
21 made to go ahead. Do you know, what further sampling
22 or testing might occur or how that would be handled in
23 the EIS process?

24 JUDGE BOLLWERK: Or actually before a
25 decision was made to go ahead.

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1 JUDGE JACKSON: Well, I'm just saying
2 either one. The decision was made to pursue it, and
3 the Corps would become involved. Do you know what the
4 next steps would be, say, on mussels and/or
5 contamination and who would do it?

6 DR. COUTANT: Well, Your Honor, I think in
7 any case it would be a decision that would be up to
8 the Corps to pursue probably more detailed studies and
9 then carry on its own impact assessment with the
10 possible EIS or EA as they deem appropriate.

11 Just to give perspective on what we've
12 done here, we don't consider what I've done in my
13 impact assessment as being the definitive answer
14 either in terms of timing or perhaps the information,
15 but we felt it was important considering the interest
16 to help inform you as a Board in your decision, and to
17 the extent that we now know a little bit better about
18 what might be done in terms of dredging, we can
19 project that to some answer.

20 Now, you asked specifically about mussels
21 and contaminants. I can pursue each of those. I
22 don't personally feel that since we do have a pretty
23 good characterization of the kinds of habitat that
24 mussels use and dredging would impact, that it is
25 necessary. My feeling is that it is not necessary to

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1 do a very site specific analysis of every sand bar to
2 be sure of what's there. The Corps may feel
3 otherwise, but my personal feeling is that necessarily
4 wouldn't have to be done.

5 In the case of contaminants, there is good
6 evidence, and I have it in my testimony, that these
7 river sediments are not contaminated. There was what
8 I consider a very good, intensive, if not extensive,
9 study of three representative sites in the reach of
10 river that we're talking about for dredging where
11 sampling was done of the bottom sediments and the
12 water quality to determine whether the sediments were
13 contaminated or not and the water quality met water
14 quality guidelines.

15 And their sampling of, as I say, three
16 different sites in this stretch of river that might be
17 dredged indicated that all of the sediment
18 concentrations of the materials you might consider as
19 contaminating the water quality, contaminating water,
20 arsenic, cadmium, chromium, zinc, you know, all of
21 those sorts of things, metals, plus persistent
22 pesticides; all of these concentrations that they
23 found were below either the sediment standards that
24 are established by the Canadians, who happen to have
25 done a better job than the Americans at setting

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1 standards, or individual literature references for
2 thresholds of sediment contamination effects.

3 So I'm quite confident that the sediments
4 in the river are not contaminated, but again, it would
5 be up to the Corps to decide whether more detailed
6 chemical analyses were needed if they were to progress
7 on to their own impact statement. But I think this
8 gives us a scope for what it is. It doesn't look like
9 it's contaminated, and it doesn't look like the mussel
10 population would be affected greatly in the parlance
11 of our NEPA analyses. The impacts look like they'd be
12 small.

13 JUDGE BOLLWERK: To the degree there were
14 contaminants, what might they be? What would you be
15 looking for, be concerned about, given this stretch of
16 river?

17 DR. COUTANT: Well, at least in principle
18 you say you've got a fairly good size city here in
19 Augusta that traditionally puts out all sorts of
20 things. There's an industrial complex there Chlor-
21 Alkali plant that Dr. Hayes mentioned that has some
22 mercury emissions. So you might expect that you'd see
23 a suite of metal contaminants. You might have, as I
24 say, mercury, and this is also somewhat of an
25 agricultural area, and pesticides are used both in

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1 agriculture and road maintenance and that sort of
2 thing.

3 So at least hypothetically you could say,
4 "Well, these are the things you ought to look for."
5 And the study that was done, the so-called Savannah
6 River at risk study that I cited in the testimony, did
7 look at those. They did a suite of I forget -- I have
8 it in my testimony -- but how many elements they
9 looked for, both the metals and the herbicides. As I
10 say, they all fell below the relevant standards.

11 So mentally you set up a hypothesis of
12 what the risk factors could be, and you look at those
13 and one after the other you come to a conclusion.
14 Again, my conclusion is that the risk is small.

15 MR. MOORER: Your Honor, could I add one
16 thing to that? I think it might be relevant to note
17 that the Corps' EIS that they did back in the '70s
18 considered mussels and contaminants as one of the
19 elements of that EIS. I'm confident that would be an
20 element in any NEPA work that they did going forward.

21 JUDGE BOLLWERK: Dr. Coutant, in terms of
22 a slightly different subject, there has been some
23 discussion and testimony about the role that snags and
24 woody debris play in providing velocity breaks for
25 different organisms. What concerns would there be

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1 about there are certain snags? I guess there were a
2 number of about, I think, 200-plus tree branches, tree
3 trunks, different things that were identified and may
4 have to be moved or removed.

5 What could be the impact of that on the
6 organisms in the area in terms of ones that would use
7 that as a sheer break or velocity break?

8 DR. COUTANT: That's a potential impact
9 that I didn't include in my testimony and probably
10 should have. It's true that if you have a large tree
11 that falls in and its branches will catch smaller
12 woody debris, that it becomes a velocity barrier and
13 fish will tend to hide behind it.

14 In the scope of a river the size of the
15 Savannah, those that are in the main channel that
16 would be affected by any snag removal for navigation
17 usually are a small percentage of that kind of habitat
18 that occurs throughout the rest of the river,
19 including the shallows and side channels and bends in
20 the river and other places where the same thing
21 occurs.

22 And one of the questions that I had asked
23 was what percentage of these potential velocity
24 breaks, the big stuff out there, is going to be
25 actually moved or removed, and it turns out to be only

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1 about a third of what actually occurs in a channel,
2 and that's not all of it. That's just what would
3 occur in the potentially cleared channel.

4 So considering that there's a lot of that
5 kind of habitat still out there and that these snags
6 really aren't going to be removed; they're going to be
7 moved to another spot out of the way of the barges,
8 gives me a fair amount of confidence that that
9 ecological function is still going to occur.

10 The follow-on thought is if it's moved and
11 you spend, let's say, even six months in the process
12 of moving material to Vogtle, is this stuff going to
13 reappear? Well, folks who work on the river as I
14 have, not necessarily this river, but many other
15 rivers, this material tends to reappear quite quickly
16 as you have a flooding cycle. Trees come in. More
17 stuff washes down. It washes out of the back water.
18 So this kind of habitat is reestablished very quickly,
19 and there are studies that I cited in my testimony
20 that dealt mostly with the macro invertebrates, not
21 the velocity issue, but that demonstrate how quickly
22 this kind of material reappears and then is
23 recolonized.

24 JUDGE BOLLWERK: In terms of the removal
25 or movement process, is there any time of the year

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1 that's better or worse for doing this sort of thing
2 that might have a more or less impact, in terms of the
3 spawning season versus other times of the year?

4 DR. COUTANT: It possibly could, but I
5 don't think that would be critical. We don't have a
6 lot of spawning occurring in this main stem, main
7 channel kind of a habitat. The spawners are off to
8 the side or, as we talked earlier about the sturgeon
9 and suckers, they tend to be upriver where the hard
10 substrates are.

11 I don't particularly think it would be
12 terribly critical at what time of year this would be
13 done, but that's, again, something the Corps perhaps
14 would probably look into and would want to for its own
15 analysis.

16 MR. MOORER: Your Honor, it's my
17 experience with the Corps that for the dredging, in
18 particular, that they do not allow the dredging to
19 occur during spawning periods, and they might have
20 similar controls for snag removal as well.

21 JUDGE BOLLWERK: And I take it nothing
22 that would -- I don't know. I guess I'll ask --
23 affect the two species we've been concerned about, the
24 sturgeon or the redhorse in terms of anything we've
25 talked about?

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1 DR. COUTANT: Well, I don't think so. You
2 know, to the degree I've gone through the information,
3 we mentioned earlier that the adult redhorse tend to
4 be very channel oriented. They're in the deep water.

5 The sturgeon, both the short nose and the Atlantic
6 sturgeon at adult sizes and juvenile sizes also are
7 deep water, deep channel species in their migration up
8 and down the Savannah, and we're talking for the
9 dredging and the snag removal, but particularly the
10 dredging, we're talking about habitats that are
11 shallow by definition. That's why they have to be
12 dredged and are not in the main channel.

13 So I suspect that these species are not
14 going to be unduly impacted. There obviously will be
15 some change in turbidity that they will see over a
16 very short period of time that the dredging occurs and
17 the snags are removed. There's going to be some
18 increase in the silt that's put into the water, but
19 the many Corps EISEs that have been done, and I cited
20 an example in the testimony, have concurred in all of
21 the scientific studies, too. That kind of turbidity
22 effect is very brief. The siltation settles out very
23 quickly and has no long term effect.

24 JUDGE BOLLWERK: All right.

25 MR. MOORER: Your Honor, let me add one

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1 thing real quickly.

2 JUDGE BOLLWERK: Surely.

3 MR. MOORER: I think it's in the
4 testimony, but I will note that the total linear feet
5 of the project dredging is 5700 linear feet estimated.
6 So you're talking really about a mile within 130
7 miles of channel.

8 JUDGE JACKSON: To add more on that, that
9 mile is broken up into the small pieces. Do you
10 believe that that has any impact on the potential
11 aquatic impact? In other words, would it be less of
12 an impact over one mile, contiguous --

13 MR. MOORER: I really don't know how to
14 answer that. I guess I would point out there are only
15 eight discrete spots. So if you divided that number
16 by eight it still is a fairly small amount.

17 Dr. Coutant, do you have any?

18 DR. COUTANT: Yeah, Coutant again.

19 Your Honor, I'd suspect that breaking up
20 into little chunks makes it far less of a problem than
21 if you were to go through and disrupt a linear mile or
22 more of river. I have done no specific comparison of
23 that, but that's my judgment.

24 JUDGE JACKSON: What makes you think that?

25 DR. COUTANT: Well, because you'd be -- in

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1 terms of the dredging, you'd be taking a few isolated
2 spots that don't contain many organisms, and it's kind
3 of like I guess the analogy would be what the people
4 who use herbicides do. It's far better to go in
5 selectively and zap the dandelions one by one than it
6 is to go through and spread your herbicide across the
7 whole area, and I sort of see this happening in an
8 analogue to that.

9 We're going in and picking specific spots
10 of relatively low quality biologically habitat and
11 then pulling those out and doing a minimal amount of
12 destruction, disruption, rather, of the rest of the
13 habitat. As I say, I don't have a quantitative figure
14 for that, but that's my suspicion.

15 JUDGE JACKSON: Okay. Thanks.

16 JUDGE BOLLWERK: Maybe a couple of
17 additional questions. In terms of Answer 7 of your
18 prefiled rebuttal testimony, you indicated there
19 probably wouldn't be any impacts of the dredging in
20 the estuary. I mean, is there any possibility that
21 upstream dredging might have some impacts, recognizing
22 that it's upstream? But you know, what's upstream
23 comes downstream. Is that a possibility?

24 DR. COUTANT: I think it would be very
25 remote. As Mr. Moorer said, these would be eight

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1 sites scattered across 110, 120 -- I forget the exact
2 number of river, and some of the increased turbidity
3 might continue on down to the estuary, but it would be
4 essentially immeasurable, I'm quite sure.

5 JUDGE BOLLWERK: And I take it from what
6 you've basically been talking about here is based on
7 this report, and obviously if a factor were different
8 because of the flow of the river or the amount that
9 had to be dredged, I mean, that could change your
10 analysis obviously.

11 DR. COUTANT: That's correct, Your Honor.
12 I think in the sense that we're scoping what the
13 effect might be, you know, if it were 40,000 instead
14 of 3900, 3600, you know, something in that range, a
15 variation in the amount probably would not be very
16 significant.

17 But if the plans were to be developed in a
18 far different way, then the conclusion might be very
19 different, and those analyses would have to be
20 followed on by the Corps in whatever it does for its
21 EIS.

22 JUDGE BOLLWERK: Any concern you might
23 have about disposal sites? We talked a little bit
24 about that in terms of where they would be located.

25 DR. COUTANT: Well, as you gathered from

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1 the conversation here, there is a little bit of flux
2 in what might be done. What was suggested to me at
3 the time I prepared my testimony was that the most
4 likely method of disposal would be putting it on a
5 barge and taking it down river either for use or to be
6 disposed of in an already permitted Corps disposal
7 site, and that was the basis of my judgment. And if
8 things change, if it's done differently, why, the
9 analysis would have to be revised.

10 But again, this is a fairly small amount
11 of material, as Captain Scott has indicated, and we're
12 not talking about massively covering over big areas of
13 land adjacent to the river. So again, it's relatively
14 small in scope and apparently the Corps has a lot of
15 experience in handling this kind of material.

16 JUDGE BOLLWERK: All right. Let me turn
17 to Judges Trikouros and Jackson and see if you have
18 any additional questions at this point for this panel.

19 JUDGE JACKSON: None for me.

20 JUDGE TRIKOUROS: No.

21 JUDGE BOLLWERK: No. All right. Why
22 don't we then give the -- it's about time to take a
23 break in any event. Let's give the parties -- is ten
24 minutes enough to generate any additional questions?
25 Will that work?

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1 MR. SANDERS: Fifteen minutes, please.

2 JUDGE BOLLWERK: Fifteen? All right. Why
3 don't we then say we'll start again at, say, five
4 till, five till three?

5 Thank you.

6 (Whereupon, the foregoing matter went off the record
7 at 2:39 p.m. and went back on the record
8 at 3:08 p.m.)

9 JUDGE BOLLWERK: All right, if we could go
10 back on the record, please. All right, we're back
11 after a somewhat longer break. We've got some
12 additional questions for the panel from a couple of
13 the parties. I think both -- I think all three of us
14 will be asking different members of the panel
15 different questions. Let me start off.

16 Relative to the use of alternative
17 transportation methods, whether it might be rail or
18 highway, have you done any analysis? Is any of these
19 going to require any additional -- any repair? I
20 mean, basically, something that's going to have to be
21 done to the existing transportation system in order to
22 get the components where they need to be? It's like
23 we're talking about dredging, it's going to require
24 some more work. Anything for rail or highways?

25 MR. NEUBERT: Your Honor, Jeff Neubert.

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1 We've not made any final determination at this point
2 in time. Any infrastructure upgrades that might be
3 required would be handled typically by the carriers
4 themselves, either the railroad or the highway
5 department, and any necessary evaluation of the
6 permitting would be handled by them.

7 JUDGE BOLLWERK: All right. Judge
8 Trikouros?

9 JUDGE TRIKOUROS: If you look at the cost
10 of transporting via the alternatives rather than
11 barging, do you have any numbers on the difference in
12 cost associated with that?

13 MR. NEUBERT: Your Honor, we have not made
14 any final determination about cost for any
15 transportation method for Vogtle at this point in
16 time. Jeff Neubert.

17 JUDGE TRIKOUROS: Thank you.

18 JUDGE BOLLWERK: Any -- you'd have to
19 recall back to the -- your ER in terms of
20 environmental impacts of trucking versus rail, versus
21 barge. Do you remember discussing that in your ER?
22 Have you done an evaluation of it?

23 MR. MOORER: Your Honor, Tom Moorer for
24 the Applicant. The ER does not really discuss to any
25 great degree transportation impacts that occur off of

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1 the site. The transportation impacts are really
2 related to things that might affect the site.

3 JUDGE BOLLWERK: All right. Given the
4 time constraints associated with this project
5 potentially, the dredging project, why haven't -- I
6 guess the question is, why haven't you moved forward
7 with some kind of formal request to the Corps? I
8 mean, you've got 2012. You're looking at a window
9 here and are you sort of waiting? I don't know.

10 MR. MOORER: Tom Moorer for the Applicant.

11 I'll take a shot at this. Mr. Neubert might have
12 some additional information to add to it, but you
13 know, we signed an EPC contract in April of 2008 and
14 at that point in time, we had a project in terms of a
15 project. Now, as some of you may have heard
16 yesterday, March 17th, the Georgia Public Service
17 Commission approved the certification for Vogtle. We
18 felt like that there was -- because the project had
19 not been certified, and it was still a project in
20 nature that we really could not pursue some of this
21 until now.

22 JUDGE BOLLWERK: All right.

23 MR. MOORER: That's the answer. Mr.
24 Neubert might can add something to that. I think a
25 lot of this is we didn't have the information was part

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1 of the problem as well.

2 JUDGE BOLLWERK: All right.

3 MR. NEUBERT: I would concur with Mr.
4 Moorer's answer and add further that Westinghouse
5 expectation was that the Corps of Engineers was
6 authorized to maintain a navigation channel and we
7 thought we could reasonably rely on that channel.

8 JUDGE BOLLWERK: All right. Let me ask
9 perhaps not an associated question but one that occurs
10 to me. Does the -- one of the things that's been
11 requested as far as part of this early site permit is
12 a limited work authorization. Does that have anything
13 to do with the barging process that we're -- I'm
14 sorry, the dredging process that we're talking about?

15 MR. MOORER: Your Honor, Tom Moorer for
16 the Applicant. The work that's going to be done under
17 the limited work authorization involves basically the
18 placement of backfill, the mud mat and waterproof
19 membrane in the excavation and some mechanically
20 stabilized earth walls and where there's no impact --
21 dredging has no impact on that. So the channel has no
22 impact.

23 JUDGE BOLLWERK: You don't have to dredge
24 to do any of that.

25 MR. MOORER: Not to my knowledge.

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1 JUDGE BOLLWERK: I guess Judge Jackson has
2 the next question.

3 JUDGE JACKSON: Captain Scott, you
4 answered a question regarding the draft, the five and
5 a half foot draft and I believe you answered this but
6 let me rephrase it. Is the five and a half foot draft
7 calculated when the barge is standing still or when
8 it is underway?

9 CAPT. SCOTT: The five and a half foot
10 draft is calculated standing still. Underway at the
11 speeds we're talking about, it would be very little
12 difference.

13 JUDGE JACKSON: Could you give us an idea
14 of what very little difference might be?

15 CAPT. SCOTT: I would suggest to you it
16 would be within an inch.

17 JUDGE JACKSON: Okay.

18 JUDGE BOLLWERK: It's very little, I
19 guess.

20 CAPT. SCOTT: It's very little. This
21 clearance under keel, I'm a licensed Savannah River
22 Pilot. During the Coast Guard hearings on developing
23 rules for clearance under keel, it was 100 percent for
24 the use as ships in the Savannah River operating in
25 the lower part of the harbor. They operate at speeds

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1 between, well, 12 knots and 14 knots and the amount of
2 water that their propellers use and the speeds they're
3 operating under, they squat down a good bit when
4 they're going through the channel. And so it became
5 an issue and that's where the two feet minimum
6 clearance under keel came from.

7 When the vessels have docked they
8 established a minimum clearance under keel of a foot
9 but for barge traffic up the Savannah River, it's a
10 non-issue.

11 JUDGE JACKSON: Thank you.

12 JUDGE BOLLWERK: Let's see, we talked a
13 little bit about the permitting process relative to, I
14 guess, the slip and you mentioned that you might have
15 to amend that -- they wouldn't issue two separate
16 permits, that they would essentially amend or combine
17 the applications, the Corps would. They don't issue
18 separate permits for the same general process. In
19 terms of the barge slip, the dredging has to be there
20 and then whatever might be needed to be done in the
21 channel.

22 And I guess the question is, would the
23 permits that you received and amended, however form,
24 would it specify these particular locations where you
25 would do the dredging or would it basically say you

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1 have the right to dredge the channel or we would -- or
2 the channel should be dredged from X to Y, the whole
3 length you're talking about?

4 MR. MOORER: Your Honor, Tom Moorer for
5 the Applicant. First, let me make it very clear --

6 JUDGE BOLLWERK: You're not going to apply
7 for a permit, okay.

8 MR. MOORER: -- we're not going to apply
9 for a permit.

10 JUDGE BOLLWERK: Okay, but let's assume
11 you will. I have a hypothetical. I apologize. I
12 should have made that --

13 MR. MOORER: Hypothetically, I'll respond.

14 As I understand the permit process under Section 404
15 of the Clean Water Act, which is the authority that
16 would be used to issue a permit that would allow
17 Southern Nuclear or any entity to dredge the river, if
18 you had other 404 permits being acted on at the same
19 time, the Corps' process doesn't allow them to segment
20 those permits into four discrete permits and do EA's,
21 for example, on four. It requires them to consider
22 the action as a whole. And because of that,
23 obviously, the -- the three permits -- the potentially
24 three permits would be necessary for the site under
25 404 would be then pulled in with this other

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1 hypothetical permit and we're just very concerned that
2 that would cause problems for the three permits
3 necessary to construct the plant. And those are
4 probably the more important of the three as we've
5 stated before, because we have alternatives to the
6 other action.

7 JUDGE BOLLWERK: And in terms of that
8 fourth permit, the one -- the hypothetical permit,
9 would that, to the best of your knowledge, be stated
10 as a permit to dredge only in the particular locations
11 you've identified assuming those were the proper ones
12 or would it be along a certain length of the river?
13 How is it stated, if you know?

14 MR. MOORER: Your Honor, I really can't
15 answer that. I think that's probably a question that
16 the Corps could answer better. They would be the
17 permitting authority for that. I've never used a
18 permit like that before. I'm not familiar with what
19 it would take.

20 JUDGE BOLLWERK: All right, okay. Thank
21 you. I think the next one is for Dr. Coutant. The
22 dredging locations, I guess, have been looked at and I
23 think you suggested, at least as I understood your
24 answer, that the particular habitats we're talking
25 about which are basically, I won't say -- Sandbar is

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1 not the right term. Is Sandbar --

2 DR. COUTANT: Sandbar is proper.

3 JUDGE BOLLWERK: You seem to be suggesting
4 that those are poor habitats for mussels. Have they
5 really been characterized enough for you to be able to
6 draw that kind of conclusion at this point?

7 DR. COUTANT: Well, I think the answer is
8 yes. I mean, we have the Pee Dee River Basin Survey.
9 We have the Savannah River Survey which was less
10 extensive but still informative. And in both cases,
11 these folks who are out there purposely looking for
12 the habitat types that are important for mussels are
13 stating that this kind of shifting sand habitat is
14 very poor mussel habitat and they found them to be
15 either rare or non-existent in that kind of habitat.

16 So I feel quite confident that we can at
17 least give a general picture of the habitat used.

18 JUDGE BOLLWERK: And how much of your
19 experience is based on actual field research in the
20 Savannah River as opposed to other rivers? You've
21 obviously got a lot of experience.

22 DR. COUTANT: I haven't done field
23 research on the Savannah, I must admit, but I've -- as
24 you say, I've done a fair amount of river work.
25 Delaware River, where I, in fact, sampled mussels, and

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1 other sites, Columbia River, various places.

2 JUDGE BOLLWERK: Right. To what degree
3 would -- is it possible that the snag and tree removal
4 would cause the shifting sands and cause any kind of
5 degradation in the mussel habitat?

6 DR. COUTANT: Well, I don't think that if
7 you're removing a tree from an area, you know, a
8 fallen tree into a navigation channel, in an area that
9 you're really going to disrupt the habitat of the
10 mussel which would be down -- as these studies have
11 indicated, down in the deeper portions of the channel.

12 I don't think that you'd have much impact by removing
13 those snags.

14 JUDGE BOLLWERK: Are you saying the snags
15 are higher up and the mussels are lower in the
16 channel? Is that -- I mean --

17 DR. COUTANT: Yeah, I mean, basically
18 that's it. I mean, you visualize a tree that's fallen
19 into the water and it's pretty much at the surface.
20 It's collecting other woody debris, or you have other
21 clumps of branches and things that get stuck there
22 mostly at the surface and not down in these deep
23 channel locations. They're the preferred habitat for
24 the mussels.

25 JUDGE BOLLWERK: All right. Are you aware

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1 of any studies relating to the toxicity of sediment
2 and let me spell this word, p-o-r-e, pore water on the
3 Savannah River?

4 DR. COUTANT: Actually, the study that I
5 cited looked at the sediment toxicity which is, in
6 fact, including the pore water, pore water being the
7 water that's mixed into the -- among the sediment
8 grains and when you take a sample of sediment, you're
9 usually including both the material that's attached to
10 the sediment grains and you're including the water
11 that's included. And the way these analyses are done
12 is that the sample is then dried so you have a
13 combined attached and pore water quantity of the
14 material it's analyzed for.

15 We can check the methods that were used in
16 these studies but I'm quite sure that's what they did.

17 JUDGE BOLLWERK: Okay. Relative to the
18 river bends and the sandbars we've been talking about,
19 are the proposed dredging sites that have been
20 identified an important habitat for any species that
21 you're aware of?

22 DR. COUTANT: Again, the shifting
23 sandbars, sand habitats are pretty devoid of most
24 things, most organisms that -- they're unstable
25 habitats, there's not much there in the way of food.

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1 I mean for a variety of biological reasons, they're
2 not particularly good habitat.

3 JUDGE BOLLWERK: I think this is a
4 clarification but just let me ask this and whoever
5 would be appropriate to answer it, are there already
6 permitted disposal sites available for the spoils of
7 dredging associated with the proposed barging. Are
8 there any already permitted sites for spoils
9 disposition?

10 MR. MOORER: Yeah, let me -- I'll respond
11 to that. Tom Moorer for the Applicant. Again, I
12 think that's the Corps of Engineers that would have to
13 answer that. You know, the Corps would be doing the
14 dredging and using the disposal areas and while they
15 have -- I know they have disposal areas along the
16 river, they would have to determine which ones would
17 be used.

18 JUDGE BOLLWERK: Okay, and let's see, are
19 you going to deal with this one, I think? This was
20 the one we had?

21 JUDGE TRIKOUROS: Yeah.

22 JUDGE BOLLWERK: Okay, let me do one last
23 one and we'll go back to Judge Trikouros. DR.
24 Coutant, and I remember reading this at some point,
25 that there are fish consumption warnings for the

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1 Savannah River if I'm recalling correctly. Is that
2 true?

3 DR. COUTANT: There are very few waters in
4 the Southeast that don't have some form of fish
5 consumption advisory.

6 JUDGE BOLLWERK: The Potomac River would
7 probably be the same way. Does that suggest anything
8 about how likely it is that Savannah River sediment is
9 going to contain some kind of contaminants in terms of
10 the fact that the fish -- there's warnings about not
11 eating the fish? What does that say about the river
12 sediment itself?

13 DR. COUTANT: Well, one of the causes of
14 most consumption advisories is mercury and the one --
15 well, one of two actually, that I mentioned in the
16 testimony that the Savannah River at Risk Study found
17 in the water quality was mercury and mercury has a
18 strong tendency to be taken up by organisms. So it's
19 almost ubiquitous, and the Savannah River is no
20 exception, that you'll have long-life fish species
21 that have mercury in their tissues that are above the
22 very low regulatory limits that are placed on fish
23 tissues.

24 So it's very common in most waters, most
25 fresh waters in the Southeast particularly, not just

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1 the Southeast but the country, to have mercury at
2 levels in fish tissue that trigger advisories. And
3 the nature of advisories is they're just disclosing to
4 the public that if you eat too much of this fish,
5 particularly bottom feeding like catfish, for
6 instance, if you eat your 10 meals of fish a day, I
7 mean, that's an exaggeration, but a large amount of
8 consumption of fish may give you a mercury problem.

9 So it would not be surprising that you'd
10 have certain locations in the Savannah River that
11 would have a fish consumption advisory.

12 JUDGE BOLLWERK: And again, does that say
13 anything about the sediments? I mean, let's go back
14 to my original --

15 DR. COUTANT: Not necessarily because the
16 source of mercury -- well, there is a potential source
17 of mercury in the Savannah system and that's the
18 Chlor-Alkali Plant in -- near Augusta, but the mercury
19 levels in the -- in the Savannah River are quite low.

20 I mean, they're pretty much on the borderline, as I
21 indicated in my testimony for the standards, the water
22 quality standards. And when you see mercury levels of
23 that concentration, it quite often is simply the
24 general atmospheric deposition of mercury from coal
25 burning and other activities that give that pretty

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1 consistent background of mercury level in the water.

2 So it doesn't necessarily mean that that
3 mercury has come out of the sediments. And in the
4 sediment contamination study that was done that I
5 quoted in the testimony, they didn't find mercury at
6 high concentrations in the sediment.

7 JUDGE BOLLWERK: All right. All right.
8 Judge Trikouros. Thank you, sir.

9 JUDGE TRIKOUROS: Yeah, this is a question
10 for Mr. Smith, but I believe it's really a
11 clarification for the record of a question that was
12 already asked. Mr. Smith, based on your experience
13 with Corps dredging on the inter-coastal waterway, do
14 you think it would be consistent with Corps practice
15 for them to only dredge to a six-foot channel on the
16 middle Savannah River?

17 MR. SMITH: Yes, that's correct.

18 JUDGE TRIKOUROS: Thank you.

19 JUDGE BOLLWERK: All right, Dr. Jackson,
20 anything further?

21 JUDGE JACKSON: Nothing further.

22 JUDGE BOLLWERK: All right, Judge
23 Trikouros?

24 JUDGE TRIKOUROS: Nothing.

25 JUDGE BOLLWERK: Any other questions from

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1 the parties, given the responses you've just heard?

2 All right, then I think -- I'm sorry?

3 MR. MOORE: You have instructions for this
4 panel to -- are they released or --

5 JUDGE BOLLWERK: Do you have someone that
6 needs to leave? I don't think we're going to call
7 them again. I don't anticipate it at this point, but
8 if they leave, then we can't recall them.

9 MR. MOORE: Well, we can --

10 JUDGE BOLLWERK: Does someone need to
11 leave, I'll put it this way?

12 MR. MOORE: No one has to leave, but
13 there's a couple of people who are driving to Savannah
14 and they were going to just go home this evening if
15 they weren't needed.

16 JUDGE BOLLWERK: Okay. Do we anticipate -
17 - okay, all right. Yeah, I think we can go ahead and
18 release this panel then. We'll do that. Gentlemen, I
19 thank you all. Some of you we've seen several times
20 and we appreciate very much your service to the Board,
21 the information you've given us and your
22 forthrightness in testifying for us today. Thank you
23 very much.

24 MALE PARTICIPANT: Thank you, your Honors.

25 JUDGE BOLLWERK: Thank you. All right,

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1 then I believe we are ready to proceed next with the
2 two staff panels and the first one would be the Army
3 Corps of Engineers.

4 MS. PRICE: Yes, your Honor.

5 JUDGE BOLLWERK: We're glad to see all of
6 you this afternoon. We're sorry it took so long. The
7 wheels of justice grind slowly. That's about the only
8 excuse I can give you here.

9 JUDGE JACKSON: But they grind exceeding
10 fine.

11 JUDGE BOLLWERK: That's right.

12 MS. PRICE: Judge Bollwerk, I'd like to
13 introduce the panel, the witnesses from the Army Corps
14 of Engineers. To your left, we have Mr. Lyle
15 Maciejewski, next to him is Ms. Carol Bernstein. Next
16 to Ms. Bernstein is Mr. William Bailey. Next to Mr.
17 Bailey is Mr. Stanley Simpson. I'd also like to let
18 you know that in the audience we have from the Office
19 of Counsel for the Corps, Mr. Warren Schwartz.

20 JUDGE BOLLWERK: Okay. Thank you and I
21 guess we need to swear you in. That would be the
22 first order of business. If you could all raise your
23 right hands and you would need to respond orally to
24 the question I'm going to ask you. Do you swear that
25 the -- swear or affirm that the testimony you will

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1 give in this proceeding will be the truth, the whole
2 truth and nothing but the truth? You can go down the
3 line.

4 MALE PARTICIPANT: I do.

5 FEMALE PARTICIPANT: I do.

6 MALE PARTICIPANT: I do.

7 MALE PARTICIPANT: I do.

8 JUDGE BOLLWERK: Thank you very much.

9 MS. PRICE: If I could have you pull up
10 the direct testimony of the Army Corps of Engineers,
11 please. I'd like you all to take a look at the
12 testimony as listed. Are you familiar with the
13 testimony entitled "U.S. Army Corps of Engineers
14 Testimony of William G. Bailey, Carol L. Bernstein,
15 Lyle J. Maciejewski, and Stanley L. Simpson concerning
16 Environmental Contention EC 6.0 dated January 9th,
17 2009 which has been provided to the Court Reporter in
18 electronic format under the File Name Vogtle ESP USACE
19 EC 6.0 Direct Testimony"?

20 ALL PANEL MEMBERS: Yes.

21 MS. PRICE: Do you affirm that the
22 portions of this testimony bearing your initials as
23 well as your attached statement of professional
24 qualifications were prepared by you and that they are
25 true and correct to the best of your knowledge and

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1 belief?

2 ALL PANEL MEMBERS: Yes.

3 MS. PRICE: Thank you. Your Honor, I'd
4 move that those be admitted.

5 JUDGE BOLLWERK: All right, any objections
6 to the admission of this testimony? Hearing none,
7 then the direct testimony of William G. Bailey, Carol
8 Bernstein, Lyle Maciejewski, and Stanley Simpson will
9 be admitted and bound into the record at this point as
10 if read as DDMS Item ID 59094.

11 US Army Corps of Engineers Direct
12 Testimony (EC 6.0) (DDMS-59094)

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January 9, 2009

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
)
SOUTHERN NUCLEAR OPERATING CO.) Docket No. 52-011-ESP
)
(Early Site Permit for Vogtle ESP Site))

U.S. ARMY CORPS OF ENGINEERS TESTIMONY OF WILLIAM G. BAILEY,
CAROL L. BERNSTEIN, LYLE J. MACIEJEWSKI, AND STANLEY L. SIMPSON
CONCERNING ENVIRONMENTAL CONTENTION EC 6.0

Q1. Please state your names, occupations, and by whom are you employed.

A1(a). (WGB) My name is William G. Bailey (WGB). I am employed as Chief of the Savannah Planning Unit, Savannah-Mobile Regional Planning Center (Environmental Resources, Plan Formulation, and Economics), by the U.S. Army Corps of Engineers ("USACE" or "Corps"), Mobile District. A statement of my professional qualifications is attached hereto.

A1(b). (CLB) My name is Carol L. Bernstein (CLB). I am employed as Chief of the Coastal Branch, Regulatory Division, by the USACE, Savannah District. A statement of my professional qualifications is attached hereto.

A1(c). (LJM) My name is Lyle J. Maciejewski (LJM). I am employed as Operations Project Manager in the Navigations Branch, Operations Division, by the USACE, Savannah District. A statement of my professional qualifications is attached hereto.

A1(d). (SLS) My name is Stanley L. Simpson (SLS). I am employed as the Savannah District Water Control Manager, Engineering Division, by the USACE, Wilmington District. A statement of my professional qualifications is attached hereto.

Q2. Please describe your current job responsibilities.

A2(a). (WGB) As the Chief of the Savannah Planning Unit, Savannah-Mobile Regional Planning Center (Environmental Resources, Plan Formulation, and Economics), I manage the Savannah District Unit's planning program, which includes feasibility investigations, continuing authority studies, floodplain management services, flood insurance studies, planning assistance to states, environmental impact statements, and environmental assessments for pre-authorization and post-authorization studies. I evaluate environmental impacts of complex civil works and regulatory projects. I provide advice and direction, and review the work of environmental staff.

A2(b). (CLB) I serve as Chief of the Savannah District Coastal Branch, Regulatory Division, with full responsibility for planning, programming, administering and enforcing the Regulatory Program, including permit evaluation, enforcement, noncompliance, and mitigation under the Rivers and Harbors Act and the Clean Water Act. I manage and execute the \$4.5M regulatory program for the southern half of Georgia (GA) and supervise 18 interdisciplinary staff including two section chiefs and one field office.

A2(c). (LJM) I am the Operations and Maintenance Project Manager for Savannah Harbor and the Savannah River Below Augusta Project. I budget, schedule work, coordinate, monitor funding and serve as technical point of contact with internal and external customers for work involving maintenance dredging of the harbor and river basin.

A2(d). (SLS) I perform the daily functions of a Water Control Manager, which requires a technical understanding of projects, their purposes, and their interaction with others in the Georgia-Alabama-South Carolina system. I manage the water resources to maximize benefits to the public and minimize negative impacts. I also communicate on a daily basis with project personnel, district elements, and other entities outside the Corps. I manage projects on a daily basis according to guidelines set forth in the Reservoir Regulation Manual. I prepare periodic reports and data-calls on Water Control activities and Water Control Data System. I provide

technical support to Engineering, Planning and Operations Divisions, serving as the Systems Administrator for the CWMS and Water Control Data System and as South Atlantic Division Technical expert on Water Management and data dissemination. I also maintain and implement state-of-the-art computer programs to manage the multipurpose projects of the Savannah River Basin.

Q3. What is the purpose of this testimony?

A3. (ALL) Our understanding is that this proceeding concerns an application by Southern Nuclear Operating Company, Inc. ("Southern") for an early site permit ("ESP") for a site within the existing Vogtle Electric Generating Plant ("VEGP") site near Waynesboro, Georgia. Pursuant to a request from the staff of the U.S. Nuclear Regulatory Commission ("NRC staff"), the USACE, Savannah District, has authorized the participation of Corps personnel in this proceeding to address specific topics within the USACE's authority. The purpose of this testimony is to describe the knowledge of USACE personnel on limited topics concerning the jurisdiction and procedures of the USACE and the present status of certain activities within the USACE's jurisdiction.

Q4. Are you familiar with Contention 6.0?

A4. (ALL) Yes. Our understanding is that Contention EC 6.0 as admitted in this proceeding alleges that:

Because Army Corps of Engineers (Corps) dredging of the Savannah River Federal navigation channel has potentially significant impacts on the environment, the NRC staff's conclusion, as set forth in the "Cumulative Impacts" chapter of the FEIS, that such impacts would be moderate is inadequately supported. Additionally, the FEIS fails to address adequately the impacts of the Corps' upstream reservoir operations as they support navigation, an important aspect of the problem.

It is our understanding that the contention challenges the NRC staff's environmental analysis of potential cumulative impacts of the proposed new Vogtle reactors on the aquatic biota in the Savannah River.

Q5. Does your professional experience include experience with topics raised in this contention?

A5(a). (WGB) Yes. I am responsible for the comprehensive water resources development and management program of the Savannah District. I serve as Savannah Planning Unit's technical expert on the National Environmental Policy Act ("NEPA") and other environmental issues. I prepare environmental compliance documents, including Environmental Assessments and Environmental Impact Statements. I coordinate projects and environmental documentation with Federal and state resource agencies, and I negotiate environmental compliance issues with Federal and state natural resource agencies.

A5(b). (CLB) Yes. As Chief of the Savannah District Coastal Branch, Regulatory Division, I have full responsibility for planning, programming, administering and enforcing the Regulatory Program, including permit evaluation, enforcement, noncompliance, and mitigation under the Rivers and Harbors Act and the Clean Water Act. I develop policy and ensure compliance with a variety of statutes, executive orders, and environmental laws including the NEPA, the Endangered Species Act, and the National Historic Preservation Act.

A5(c). (LJM) Yes. As the Operations and Maintenance Project Manager for Savannah Harbor and the Savannah River Below Augusta Project, I budget, schedule work, coordinate, monitor funding and serve as technical point of contact with internal and external customers for work involving maintenance dredging of the harbor and river basin.

A5(d). (SLS) Yes. I communicate with project personnel and Southeastern Power Association (SEPA) on a daily basis to coordinate changes in schedules to optimize management of our water resources while attempting to minimize impacts on the needs of others. I provide private and municipal interests with project information, pool projections, weather forecasts, and river forecasts. I also prepare on a weekly basis a power declaration incorporating a balance between current lake levels, desired lake levels (in accordance with the

Reservoir Regulation Manual), and weekly power contract commitments. I coordinate between SEPA, the South Atlantic Division Office of the Corps, and the Corps' Mobile District to ensure all needs are met and water resources are being optimized. I maintain and implement state-of-the-art computer programs to manage the multipurpose projects of the Savannah River Basin.

Among my duties, I have coordinated Thurmond Dam releases and Stevens Creek discharge with the City of Augusta. I have also coordinated the Savannah River Basin projects operating agreement with Duke Power. I have prepared periodic updates/briefings for the Public Affairs Officer & District Commander on system status. I coordinated the use of seasonal forecasts to reduce winter drawdown, maintained adequate flood-storage enabling projects to prevent roughly \$4,200,000 in flood damages, and enacted a Drought Plan update conserving significant pool elevation. I also serve on the HEC Software Development Team focusing on the design of the future Water Control Software.

Q6. Did you consider any specific documents in order to prepare this testimony?

A6(a). (ALL) No.

Q7. Given the current maintenance of the Savannah River Federal navigation channel, is it possible to transport large industrial components upstream by barge? If so, how far upstream is barge traffic reasonably possible?

A7. (SLS) Transportation of large industrial components upstream by barge is not currently possible due to the shallow river depths. However, transportation of large components upstream by barge has occurred several times in the last 10 years. Shipment was made by Chem Nuclear of contaminated power plant reactor vessels to Barnwell, South Carolina (SC) for disposal. However, it required about a 10,000 cubic feet per second (cfs) discharge.

Q8. Has the USACE developed a plan or received a formal request or authorization for dredging of the Savannah River Federal navigation channel in the near future to facilitate barge traffic as far north as the Vogtle Electric Generating Plant?

A8. (LJM) No.

Q9. If the USACE were to undertake dredging activities for the Savannah River Federal navigation channel, what, if any, types of authorizations, approvals, consultations, licenses, or certifications would be required under the USACE's process?

A9. (WGB) We would prepare an environmental assessment of the proposed action. That document would identify the dredging that would be performed, the locations where the sediment would be deposited, and the environmental impacts of those actions. We would coordinate the document with the public and natural resources agencies. The process would conclude with either an Environmental Assessment (with a Finding of No Significant Impact) or an Environmental Impact Statement (with a Record of Decision). Through the coordination, we would hope to obtain clearances under NEPA, the National Historic Preservation Act, the Coastal Zone Management Act, the Magnuson Fishery Conservation and Management Act, the Endangered Species Act, the Clean Water Act, and the Clean Air Act.

Q10. Assuming that such dredging of the Federal navigation channel were to occur, would the USACE conduct an environmental review under NEPA, the Clean Water Act, and other relevant environmental statutes?

A10. (WGB) Yes. If the proposed dredging remains a Federal Project, the USACE, Savannah District, Planning Division would conduct an environmental review under NEPA, Clean Water Act and other environmental statutes. (CLB) If Southern opted to perform the dredging work independent of the USACE, then Southern would be required to obtain a permit from the USACE, Savannah District, Regulatory Division. Such an action would require that Southern apply for a Corps permit pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. Initially, Regulatory Division would host a pre-application meeting with other federal/state agencies and work with Southern to scope the proposed project and explain requirements for environmental studies and processing of permit application.

Southern would then be required to: (1) conduct all of the necessary environmental studies; (2) submit a Section 404/Section 10 joint permit (i.e., federal and state) application with supporting exhibits and (3) provide results of environmental studies with data for review by the Regulatory Division. In turn, the Regulatory Division would: (1) determine if the application is complete; (2) prepare a Joint Public Notice, (3) seek public comments on the proposed project; (4) coordinate with other federal/state agencies; (5) evaluate the project with respect to Section 404(b)(1) analysis, 31 public interest factors, and cumulative impacts; (6) prepare an Environmental Assessment/Case document; and (7) render a permit decision.

The USACE anticipates that Southern will apply for a USACE permit in winter 2009 to construct fill pads, access roads, intake structures, discharge pipes, and a barge slip at the Vogtle Plant. To date, Southern has not indicated that the dredging activity would be included in that permit application. If the USACE, Regulatory Division begins processing a permit application or has issued a permit specific to work at the Vogtle Plant, and Southern later decides to apply for a permit to conduct the dredging activity, then the Regulatory Division would be required to re-evaluate all aspects of the entire project as a single and complete permit action (33 CFR 325.1.d.2). Thus, issuance of a site-specific permit could be delayed, or an already issued permit could be revoked, pending a subsequent USACE review/ analysis of a single and complete project (i.e., cumulative analysis of impacts at Vogtle Plant site and river dredging).

Q11. Does the USACE currently know whether any applicable Federal or state regulatory agencies, including the USACE, would have a time-of-year restriction on dredging activities in order to protect aquatic biota?

A11. (WGB, CLB) No. We currently do not know if dredging activities would have a time-of-year restriction. Special requirements/conditions for the dredging activities would likely result if a review of the project scope warrants such action. Likewise, coordination with other

federal and state agencies may result in a determination that time-of-year restrictions would be required in order to prevent impacts to threatened and endangered species or aquatic resources.

Q12. If the USACE were to develop a dredging plan, what guidance documents, if any, does the USACE utilize to develop such a plan, meet any necessary permitting requirements (associated with Question 9 above), and complete an environmental review pursuant to NEPA and other relevant environmental statutes?

A12. (WGB) Corps project planning and environmental review requirements are set out in the following Engineer Regulations: Engineer Regulation (ER) 1105-2-100 and ER 200-2-2. ER 1105-2-100 provides the overall direction by which Corps of Engineers Civil Works projects are formulated, evaluated and selected for implementation. It contains a description of the Corps of Engineers planning process, Corps of Engineers missions and programs, specific policies applicable to each mission and program, and analytical requirements. ER 200-2-2 provides guidance for implementation of the procedural provisions of the National Environmental Policy Act (NEPA) for the Civil Works Program of the U.S. Army Corps of Engineers. It supplements Council on Environmental Quality (CEQ) regulations 40 CFR 1500-1508, November 29, 1978, in accordance with 40 CFR 1507.3, and is intended to be used only in conjunction with the CEQ regulations. This regulation is applicable to all Headquarters USACE elements and all Field Operating Activities having responsibility for preparing and processing environmental documents in support of Civil Works functions.

(CLB) As discussed above in my response to Question 10, if Southern opted to perform the dredging work independent of the USACE, then Southern would be required to obtain a permit from the USACE, Savannah District, Regulatory Division. Such an action would require that Southern apply for a Corps permit pursuant to Section 404 of the Clean Water Act and

Section 10 of the Rivers and Harbors Act. USACE regulatory policies and authorities for reviewing such an application are described in 33 CFR parts 320-332.

Q13. Based on historic USACE experience, if the USACE were to develop and/or execute such a dredging plan for the Federal navigation channel, does the USACE have an estimate of the likely amount of time necessary to complete that process?

A13. (LJM) This is uncertain at this time. The primary factors would be the extent of dredging required, magnitude of impact to environmental resources, and whether an Environmental Impact Statement would be required.

Q14. Are the resources necessary to conduct dredging of the Savannah River Federal navigation channel currently included in USACE budgets?

A14. (LJM) No. There are no funds currently available in the budget for dredging of the Savannah River Federal navigation channel. In addition, there are currently no funds available for the environmental scoping, review and documentation that would be necessary prior to the start of any dredging project.

Q15. Is there a minimum river flow that would eliminate the need for any dredging of the Savannah River Federal navigation channel? Has the USACE determined whether scheduled releases from upstream reservoirs would also be necessary to enable barge traffic to reach as far upstream as the Vogtle Electric Generating Plant?

A15. (SLS) The USACE has made no study of minimum river flow needed to eliminate the need for dredging of the Savannah River Federal navigation channel or whether releases from upstream reservoirs could enable barge traffic to reach as far upstream as the Vogtle Electric Generating Plant. The region is presently experiencing a drought and excess water is not available in the lakes for such purposes. But from previous experience with nuclear waste shipments, it has required about 10,000 cfs discharge for more than one week to get a barge to Jackson, SC and back from Savannah Harbor.

Q16. Has Southern contacted the USACE to discuss the needs for dredging of the Savannah River Federal navigation channel or for changing the water level of the Savannah River? If so, what is the status of those discussions?

A16. (LJM) Southern and USACE have had several general meetings in which the scope of the Vogtle Electric Generating Plant work and Georgia Power's desires for river transportation were discussed. There are currently no ongoing activities since the USACE is not funded to pursue this work on the Savannah River. At every meeting, Southern has indicated that dredging of the Savannah River would be a Federal project conducted by the USACE. (CLB) If at some point Southern proposes to perform the dredging independent of the USACE, then, as stated above in my response to Questions 10 and 12, Southern would be required to obtain a Section 404/Section 10 permit from the Savannah District, Regulatory Division. The application and review process would be as I described in response to Question 10 above. As I stated in response to Question 10, Southern has not indicated that dredging activity would be included in the permit application that the USACE anticipates will be submitted by Southern in winter 2009.

Q17. If dredging the Federal navigation channel is deemed necessary to allow for barge transportation on the Savannah River, does the USACE currently know how much dredged material would need to be disposed and where it would be disposed? Does the USACE currently know what the nature of the dredged material would be – i.e. sand, silt, clay, etc.?

A17. (LJM) The USACE does not currently know how much sediment would need to be removed, the nature of those materials, or where they could be deposited.

Q18. If dredging were necessary to facilitate barge traffic, does the USACE currently know whether all such dredging would occur within the Federal navigational channel?

A18. (LJM) No.

Q19. Does the USACE know whether such dredging of the Federal navigation channel would occur within the coastal zone of either South Carolina or Georgia and therefore require a coastal zone consistency certification?

A19. (WGB) No, but such a requirement is possible.

Q20. Is it possible that dredging of the Federal navigation channel may occur in areas identified as essential fish habitat by the National Marine Fisheries Service? If so, does the USACE currently know what steps would or could be taken to mitigate the impact to fisheries?

A20. (WGB) Yes, dredging may well be needed within areas identified as essential fish habitat. The USACE has not evaluated what steps could be taken to mitigate the impact to fisheries if such dredging were to occur.

Q21. If any sediments in the Savannah River Federal navigation channel have been sampled, does the USACE currently know what types and quantities of radiological and non-radiological contaminants are expected to be present in any dredged materials?

A21. (WGB) The USACE has not sampled sediments in the Savannah River Federal navigation channel and can not accurately predict what contaminants may be present in those sediments. (CLB) If Southern elects to apply for a permit to dredge the Savannah River, Southern would need to comply with Savannah District sediment testing requirements in addition to identifying the disposal site.

Q22. Does this conclude your testimony?

A22. (ALL) Yes.

January 8, 2009

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
)
SOUTHERN NUCLEAR OPERATING CO.) Docket No. 52-011-ESP
)
(Early Site Permit for Vogtle ESP Site))

AFFIDAVIT OF WILLIAM G. BAILEY CONCERNING
PREFILED TESTIMONY ON ENVIRONMENTAL CONTENTION 6

I, William G. Bailey, do declare under penalty of perjury that my statements in the foregoing testimony and my attached statement of professional qualifications are true and correct to the best of my knowledge, information, and belief.

**Executed in Accord with
10 C.F.R. § 2.304(d)**

William G. Bailey

Executed at Savannah, Georgia
This 8th day of January, 2009

William George Bailey

U.S. Army Corps of Engineers
P.O. Box 889
Savannah, GA 31402-0889
(912) 652-5781

WORK EXPERIENCE:

11/01/2005 to present. Physical Scientist, GS-1301-13. US Army Corps of Engineers, Mobile District. Supervisor: Paul Bradley, 251-694-4101.

Serve as Savannah District's technical expert on NEPA and other environmental issues. Evaluate environmental impacts of complex civil works and regulatory projects. Provide advice and direction, and review the work of environmental staff. Prepare environmental compliance documents, including Environmental Assessments and Environmental Impact Statements. Coordinate projects and environmental documentation with Federal and state resource agencies. Negotiate environmental compliance issues with Federal and state natural resource agencies.

10/01/2005 to 10/30/2005. Physical Scientist, GS-1301-13. US Army Corps of Engineers, Savannah District. Supervisor: Leroy Crosby, 912-652-5789.

Serve as the District's technical expert on NEPA and other environmental issues. Evaluate environmental impacts of complex civil works and regulatory projects. Provide advice and direction, and review the work of environmental staff.

05/02/2005 to 09/30/2005. Acting Chief, Planning Division, GS-1301-13. US Army Corps of Engineers, Savannah District. Supervisor: Colonel Mark Held, 912-652-5227.

Serve as the Chief of Planning Division (Environmental Resources, Plan Formulation, and Economics). Managed the District's planning program, which includes feasibility investigations, continuing authority studies, floodplain management services, flood insurance studies, planning assistance to states, environmental impact statements, and environmental assessments for pre-authorization and post-authorization studies. Supervised economic and environmental activities supporting new construction and O&M activities at military installations. Responsible for the comprehensive water resources development and management program of the District. Planned and assigned work to subordinates based on priorities. Evaluated long range goals for Planning Division and made specific recommendations on restructuring and measures to allow valuable employees to continue to provide service to PD and the District.

11/18/2001 to 05/01/2005. Physical Scientist, GS-1301-13. US Army Corps of Engineers, Savannah District. Supervisor: David Coleman, 912-652-5237.

Serve as the District's technical expert on NEPA and other environmental issues. Evaluate environmental impacts of complex civil works and regulatory projects. Provide advice and direction, and review the work of environmental staff. Prepare environmental compliance documents, including Environmental Assessments and Environmental Impact Statements. Coordinate projects and environmental documentation with Federal and state

resource agencies. Negotiate environmental compliance issues with Federal and state natural resource agencies. Prepare scopes of work for consultant contracts for planning activities.

03/16/2000 to 11/17/2001. Physical Scientist, GS-1301-12. US Army Corps of Engineers, Savannah District. Supervisor: David Coleman, 912-652-5237. Served as a Team Leader for the Impact Analysis Team, which evaluates environmental impacts of civil works projects. This included both proposed new projects and modifications to projects currently in an O&M status. Assigned work, provided advice and direction, and reviewed the work of environmental staff on environmental evaluations for complex water resource and regulatory projects. Prepared environmental compliance documents, including Environmental Assessments and Environmental Impact Statements. Coordinated projects and environmental documentation with Federal and state resource agencies including the U.S. Environmental Protection Agency, National Marine Fisheries Service, Georgia Department of Natural Resources, South Carolina Department of Natural Resources, South Carolina Office of Ocean and Coastal Resource Management, and the South Carolina Department of Health and Environmental Control. Negotiated environmental compliance issues with those listed Federal and state resource agencies. Provided expertise to the District Engineer on NEPA issues and environmental policy matters.

01/16/2000 to 03/15/2000. Supervisory Civil Engineer, GS-0810-13. US Army Corps of Engineers, Savannah District. Supervisor: M.J. Yuschishin. Served as the temporary Chief of the Environmental Resources Branch of Planning Division. Directed and planned environmental research and studies in support of Civil Works, Military, Work for Others, and Support For Others projects. Coordinated the work and funding of multiple environmental resource specialists.

02/04/1996 to 01/15/2000. Physical Scientist, GS-1301-12. U.S. Army Corps of Engineers, Savannah District. Supervisor: Paul Metz, Jr. Served as Team Leader within Environmental Resources Branch of Planning Division. Reviewed the work of team members within the Environmental Resources Branch and several specific Project Delivery Teams. Served as the NEPA specialist on an Independent Technical Review team for a Hydropower Rehab project proposed by the Little Rock District.

10/1992 to 02/03/1996. Supervisory Physical Scientist, GS-1301-12. U.S. Army Corps of Engineers, Savannah District. Supervisor: Paul Metz Jr. Served as Supervisor within the Impact Analysis Section of Planning Division's Environmental Resources Branch. In addition to the responsibilities of a Team Leader, was also responsible for formal performance evaluation and counseling of a team of up to 8 environmental specialists at the GS-12 and GS-11 levels, as well as support personnel.

12/1980 to 10/1992. Civil Engineer, GS-0810-12. U.S. Army Corps of Engineers, Savannah District. Supervisor: Leroy Crosby, 912-652-5789.

Served as a Project Manager for civil works projects. Responsible for overall management of feasibility studies. This consisted of developing scopes of work, scheduling, budgeting, monitoring progress, preparing reports, and contracting for A/E services. Coordinated the work of teams of professional engineers, economists, and environmental specialists. Functioned as the day-to-day contact between the Corps and the project's non-Federal sponsor. Was the Project Manager for a Continuing Authorities project from the initial evaluation through the completion of construction and project closeout.

COLLEGE EDUCATION:

MS, 1980, Civil Engineering, North Carolina State University
BS, 1976, Biology, SUNY College of Environmental Science & Forestry
BS, 1976, Forestry, Syracuse University

MAJOR TRAINING:

Environmental Leadership and Communication Skills; 09/2001; Front Royal, VA;
Smithsonian Institution

Leadership, Education and Development; Train-The-Trainer; 09/1999; Redstone Arsenal,
AL; US Army Center for Army Leadership

Army Management Staff College; 01-04/1995; Fort Belvoir, VA; US Army Management
Staff College

Planning Associates Program; 08/1985-06/1986; Fort Belvoir, VA; US Army Corps of
Engineers

AWARDS:

Excellent performance evaluation in each of the last ten years

LICENSES/CERTIFICATES:

Professional Engineer, GA #17031, 02/1988
LEAD Trainer, US Army Center for Army Leadership

OTHER INFORMATION:

Member of American Society of Civil Engineers

January 8, 2009

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
SOUTHERN NUCLEAR OPERATING CO.) Docket No. 52-011-ESP
(Early Site Permit for Vogtle ESP Site))

AFFIDAVIT OF CAROL L. BERNSTEIN CONCERNING
PREFILED TESTIMONY ON ENVIRONMENTAL CONTENTION 6

I, Carol L. Bernstein, do declare under penalty of perjury that my statements in the foregoing testimony and my attached statement of professional qualifications are true and correct to the best of my knowledge, information, and belief.

**Executed in Accord with
10 C.F.R. § 2.304(d)**

Carol L. Bernstein

Executed at Savannah, Georgia
This 8th day of January, 2009

Carol L. Bernstein
US Army Corps of Engineers
Savannah District (CESAS-RD-C)
PO Box 889
Savannah, GA 31401
Email: carol.l.bernstein@usace.army.mil
Work: (912) - 652-5503

Work Experience

USACE, Headquarters CECW-CO (03/01/2008 - 08/02/2008)

Washington, D.C., United States; Duties: Developmental detail as Senior Regulatory Program Manager, Directorate of Civil Works, Operations and Regulatory Community of Practice. Responsible for a variety of programmatic areas that support the National Regulatory Program goals and mission. Coordinate, communicate, and strategize program areas and activities with Director, Office of Water, EPA, Office of Management & Budget, Council on Environmental Quality, and OASA-CW to revise and reissue Regulatory Guidance Letter 07-01, a direct result of the Supreme Court Carabell- Rapanos decisions; specifically contributed to negotiations on traditional navigable waters and relevant reach, key terms of the guidance. Developed 5-year National Regulatory Strategic Plan, leading coordination with 38 districts, 8 MSCs and presented plan at the National Joint EPA and Corps Conference. Tracked national performance indicators including, budget execution and shortfalls or projected carry-over, and jurisdictional determination (JD) processing times to reduce backlog. Coordinated with Nuclear Regulatory Commission to revise the MOU between agencies and improve coordination and expedite reviews on nuclear power projects nationwide. Participated in briefings of ASA-CW, Chief Regulatory and other constituents as needed to address specific regional issues and assist with coordination through MSC or district.

USACE, Savannah District (07/01/2001 - Present) - Supervisory Biologist

Savannah, Georgia United States; Duties: Serve as Chief, Coastal Branch, Regulatory Division, with full responsibility for planning, programming, administering and enforcing the Regulatory Program, including permit evaluation, enforcement, noncompliance, and mitigation under the Rivers and Harbors Act and the Clean Water Act. Develop policy and ensure compliance with a variety of statutes, executive orders, and environmental laws including the NEPA, the Endangered Species Act, the National Historic Preservation Act. Manage and execute the \$4.5M regulatory program for the southern half of Georgia (GA) with an estimated construction value of over \$6B of residential, commercial, municipal and industrial development throughout GA. Supervise 18 interdisciplinary staff including two section chiefs and one field office, with a full range of supervisory duties including managing workload, reviewing work, establishing performance standards, evaluating performance, developing training plans, supporting EEO and addressing performance and conduct issues. Act as Division Chief on numerous occasions. Senior technical and policy expert to the Div. Chief, District Commander (DC), MSC and HQUSACE. Administer programmatic/regional initiatives including general permits and regional programmatic general permits. Led implementation of new performance measures adjusting resources and schedules to meet new national standards for enforcement and compliance, Rapanos Guidance and SWANCC policy. Developed strong partnerships with GA Ports Authority, GA DOT and other Savannah and Brunswick Harbor customers/stakeholders to ensure timely and efficient permitting services. Developed partnering agreements with regional directors of sister agencies including USFWS, NMFS, EPA, and GA EPD resulting in measurable improvements in permit processing time and agency coordination. Currently leading partnering effort with Georgia Non-governmental Organizations (NGOs) to improve communication and reduce litigation. Led development of SAS mitigation banking program, one of the most advanced in the country with 45 active banks. Proactive in conducting outreach activities with the public, university and other NGOs both to recruit and promote diversity, and to improve coordination and reduce violations resulting from lack of program knowledge. Coordinate interagency efforts resulting in improved permitting processes for major infrastructure projects (e.g. highways, reservoirs) including development of a GA Regional Reservoir Consistency Plan streamlining reservoir permitting, with Region 5 EPA Administrator, Region 5 USFWS Director and the Commissioner of GA DNR. Participated in regional initiatives including SAD regulatory regional rates and emergency regional permit procedures for proactive and consistent natural disaster response. Led development of SOP for wrecks and obstructions resulting in clarified roles for Navigation and Regulatory and expedited responses. Continue to clarify district policy as guidance and case law develops regarding isolated wetlands, a high profile and controversial issue in coastal Georgia due to a prolific amount of depositional, non-tidal wetlands. Successfully met and reached agreement on numerous legal challenges to permit and jurisdictional decisions by Southern Environmental Law Center or River Keeper groups.

USACE, Mobile District (02/03/2007 – 06/23/2007) - Chief, Regulatory Division
Mobile, Alabama United States;

Duties: Temp promotion as Chief, Regulatory Division, responsible for leading and managing a 35-person \$5M Regulatory program with three field offices during a dynamic period following Hurricane Katrina and during release of the Carabell Rapanos Guidance. Completed reissuance of the Nationwide Permits for AL and issued Regional General Permit SAM-20 to facilitate post Hurricane Katrina residential rebuilding efforts along the Mississippi Gulf Coast, expediting permit reviews of low quality impacts without compromising protection of aquatic resources; received honorable mention by the ASA-CW for the first annual Outstanding Achievement in the Regulatory Program Team Award for 2007. Led coordination with Planning Division and the Environmental Advisory Board to ensure consistency with the Coastal MS restoration projects. During this period, led the conversion of ORM I to ORM II, executed the FY 07 budget exceeding CMR goals, and developed budgets through FY 09. Revamped the entire division training plan developing METLs for all personnel, and continued momentum on reorganization of the Division through continuing to stand up field offices and fill positions. Completed first round NSPS materials and assessments on personnel, providing significant input to mock and final pay pool within SAM.

USACE, Savannah District (04/06/2003 - 09/02/2003 and 02/08/2004 - 05/02/04) - Chief, Planning Division; Savannah, Georgia United States;

Duties: Temporary promotion as Chief, Planning Division, Savannah District, serving two semi-consecutive competitive assignments. Responsible for managing/ leading the 30-person \$5M Planning Program. As an element of the PMBP managed, supervised, and coordinated the civil works, military and support for others programs. Responsible for liaison and coordination with congressional interests, Federal, state and local agencies, and NGOs. Senior technical and policy advisor to the DC, MSC, and other Division Chiefs on planning, environmental and economic matters related to the mission. Conducted Congressional briefings and served on Corporate Board providing input to RMB, as needed. Managed the Floodplain Management Services and Planning Assistance to States Programs. Hosted the Alternative Formulation Briefing for the Augusta Flood Control Study. Initiated the first Section 22 water resource study for the State of GA Environmental Protection Division in the Altamaha watershed. Addressed project management issues, by initiating a project tracking system for civil works projects to assist staff and first line supervisors.. Executed GI and CAP projects. Significantly contributed to the District's execution of 100% of GI funds, exceeding all CMR planning goals. Major contributor in implementing the Planning Excellence Program in SAD including developing proposal materials for the Planning Centers of Expertise (Deep Draft Navigation, Storm Damage Reduction, and Ecosystem Restoration), and position descriptions for SAD regional technical GS-13s, the precursor to the SAD regionalization and USACE 2012 in the Planning Community of Practice.

USACE, Baltimore District (10/01/1998 - 07/24/2001) - Section Chief

Baltimore, Maryland United States; Duties: Served as Section Chief, Planning and Environmental Services Branch, Planning Division supervising 15 employees with a full range of supervisory duties; supervised planning investigations pertaining to the environmental, economic, engineering, and cultural aspects of civil, military, and support for other (SFO) projects. Served as Program Manager for \$5M Military and SFO program. Acted as Branch Chief (\$10M program; 170 separate studies). Represented the Division and/or Branch Chief in District Program Review Board meetings. Coordinated program issues with congressional interests and with MSC and HQUSACE reps. Developed and maintained customer base sustaining branch workload; served on inter and intra-district task forces. Acted as Chief, Military Section GS-408-13 Jun 97-Feb 98. Corps Project Manager of the Chesapeake Bay Program reporting to ASA-CW, serving as lead for NAO, NAP and NAB, responsible for interagency coordination among 26 Federal agencies and the States of MD, VA, PA, and the District of Columbia, and liaison to the Office of the ACSIM. Promoted from GS 12 Ecologist 07/01/1995 - 10/01/1998 and GS 11 Ecologist 1/94 through 7/95.

USACE, Baltimore District (02/01/2001 - 06/30/2001) - Chief, Civil Section, HTRW Branch
Baltimore, Maryland United States; Duties: Section Chief, Civil Hazardous, Toxic, & Radioactive Waste (HTRW) Section, Engineering Division - Developed program goals for \$42M Civil Works HTRW program (Superfund, FUDS, FUSRAP, SFO); tracked workload, execution, and formulated work plans and schedules to meet changes in program funding; allocated existing resources among staff and supervised 12 design team leaders (DTLs) and support staff. Maintained coordination with customers, and EPA staff as well as higher authority throughout the district, division, and HQUSACE. Acted as Branch Chief during his absence, developed training plan for the HTRW Branch, and held

interviews and recommended selections for new DTLs.

During the period 05/01/1985 - 01/02/1994, I Worked for State of Maryland and in private sector as a senior ecologist in planning and environmental science division for regional civil engineering firm. As consultant, conducted wetland delineations and prepared Section 404 and Section 10 DA permit applications for private and public projects. Worked directly with the Baltimore District Regulatory Branch and MD Department of Environment. Designed environmental restoration projects and wetland mitigation in a variety of tidal and non-tidal, coastal and inland habitats. Held contract supporting MD State Highway Administration for wetland delineation and highway alignment studies. Provided expert testimony.

Education

College/University

Johns Hopkins University (08/04/1993 - 03/13/1995)

Baltimore, Maryland

United States

Degree: Master of Science - Major: Interdisciplinary Environmental Sciences Studies

Minor: Water Resource Management

GPA: 3.9 Semester Hours: 30

Description: Course work for the interdisciplinary environmental science studies degree included public policy and the environment, wetland ecology, environmental law, environmental geology, estuarine ecology, plant ecology/ taxonomy, soils ecology, stream ecology, and a thesis. Thesis project focused on a five year analysis of a created wetland, its establishment and success. Each course was three semester credits for a total of 30.

College/University

University of Arizona (01/01/1981 - 05/18/1985)

Tucson, Arizona

United States

Degree: Bachelor of Science - Major: Renewable Natural Resources- Wildlife Ecology

GPA: 2.67 Semester Hours: 134

Description: Coursework included wildlife management, forest policy and administration, fish and wildlife science, natural resource recreation, forest and range plants, wildlife ecology, range management, plant diversity and evolution, animal anatomy and physiology, natural resource measurements and statistics, etc. Each course was 3 to 4 credits for a total of 134 semester hours.

Additional Information

SPECIALIZED TRAINING

Personnel Management for Executives II (PME II) 40 hours, Sep 06; Personnel Management for Executives I (PME I) 80 hrs., Oct 04; Graduate of the CP-18 Army Leadership Development Program (LDP) Oct 01; Regulatory VII, June, 08, 07, 02; Executive Regulatory Seminar, Mar 08, 02; Fiscal Law, 40 Hours, Nov 02; Contracting Officer's Representative class, 40 hrs., May 01; OPM Seminar for New Managers, 40 hrs., Oct 00; Army Management Staff College (AMSC) - Sustaining Base Leadership and Management (SBLM), 640 hrs., Mar 00; OPM Developing Customer Focused Orgs., 40 hrs., Dec 99; Supervisor Dev. Course, Nov 99; Opportunity Mgmt. and Marketing, Apr 98; Organizational Leadership for Execs. (OLE), 80 hrs., Sep 97; Interagency Wetland Delineation Course (Reg. IV), 40 hrs., Apr 97; Leadership Education and Development (LEAD), 40 hrs., May 96; Rosgen Fluvial Geomorphology & Stream Restoration, 80 hrs., Mar 96; Incremental Economic Analysis, Nov 95; Organizational Managerial Courses, Oct 95; 3-Civil Works Planning courses Oct 95- Jun 96; Environmental Compliance and Mitigation, May 94.

CERTIFICATIONS

Professional Wetland Scientist, 1995 and recertified in 2008; Hydrogeomorphic Approach to Functional Wetland Evaluation, 1994; U.S. Fish and Wildlife Service Habitat Evaluation Procedures, 1989.

AWARDS

Commander's Award for Civilian Service, May 2004

Army Achievement Medal, June 2006

Performance Awards for exceptional performance during all USACE rating periods 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006;
Three Special Act Awards May 98, Jan 97, and Jul 94;
On-the-Spot Award, May 98 and Sep 07;
Professional Service Award from the MD/DE Chapter of The Wildlife Society, 2001;
Team Awards for Savannah Harbor Expansion and Reservoir Consistency Teams, Oct 2003

PUBLICATIONS

Published the following articles: North Georgia Environmental Database compilation for Cumulative Impact Assessments of Reservoirs. Presented at the 2003 Water Resources Conference in Athens, GA. 2003;
Evaluating Success of a Wetland Creation Site on Maryland's Coastal Plain. 1995;
Protecting Maryland's Atlantic Coastal Bays Through Regulation: A Program Overview and Assessment. 1990; and
Identification of Potential Wetland Creation Sites within Three Maryland Estuaries. 1989.

PROFESSIONAL MEMBERSHIPS

Society of Wetland Scientists; The Wildlife Society: Past President (MD/DE Chapter) 1999-2001, President 1997-1999, President-Elect 1995-1997, Secretary 1993-1995, Legislative Review Committee Chair-1989-1993.

January 8, 2009

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
)
SOUTHERN NUCLEAR OPERATING CO.) Docket No. 52-011-ESP
)
(Early Site Permit for Vogtle ESP Site))

AFFIDAVIT OF LYLE J. MACIEJEWSKI CONCERNING
PREFILED TESTIMONY ON ENVIRONMENTAL CONTENTION 6

I, Lyle J. Maciejewski, do declare under penalty of perjury that my statements in the foregoing testimony and my attached statement of professional qualifications are true and correct to the best of my knowledge, information, and belief.

**Executed in Accord with
10 C.F.R. § 2.304(d)**

Lyle J. Maciejewski

Executed at Savannah, Georgia
This 8th day of January, 2009

Relevant Work Experience
Lyle Maciejewski

From January 1996 to Present

Project Manager - Savannah Harbor Operations and Maintenance, Savannah District
Duties - I budget, schedule, coordinate with internal and external customers, monitor funding and serve as point of contact for all harbor maintenance activities. I am responsible for scheduling and developing harbor dredging contracts. During the time period I was detailed as head of the hydrographic survey section and was responsible for planning conducting and producing the District hydrographic surveys including dredging payment surveys.

From June 1990 to June 1996

Project Manager - Navigation, Savannah District
Duties - I managed budgets, developed dredging contract, and represented Operations in new work dredging planning for District dredging maintenance activities.

From August 1988 to September 1990

Project Engineer - Hydropower, Savannah District
Duties - I served a project engineer coordinating administrative duties in the Hydropower Branch of the District.

From November 1987 to August 1988

Project Engineer - Navigation, Savannah District
Duties - I served as Contracting Officers Representative for District maintenance and construction dredging contracts.

From April 1980 to November 1987

Assistance Chief - Dredging and Navigation Section, Memphis District
Duties - I assisted the Section Chief directing District owned towboat and dredges. I led the hydrographic survey operations for dredging work in the Mississippi River and adjacent ports.

Education:

Bachelor Degree in Civil Engineering from the South Dakota School of Mines and Technology

Master's Degree in Civil Engineering from the South Dakota School of Mines and Technology

January 8, 2009

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)
)
SOUTHERN NUCLEAR OPERATING CO.) Docket No. 52-011-ESP
)
(Early Site Permit for Vogtle ESP Site))

AFFIDAVIT OF STANLEY L. SIMPSON CONCERNING
PREFILED TESTIMONY ON ENVIRONMENTAL CONTENTION 6

I, Stanley L. Simpson, do declare under penalty of perjury that my statements in the foregoing testimony and my attached statement of professional qualifications are true and correct to the best of my knowledge, information, and belief.

**Executed in Accord with
10 C.F.R. § 2.304(d)**

Stanley L. Simpson

Executed at Savannah, Georgia
This 8th day of January, 2009

Statement of Professional Qualifications for Stanley L. Simpson

Stanley L. Simpson
Savannah District Water Control Manager, Engineering Division
U.S. Army Corps of Engineers
Wilmington District
P.O. Box 889
Savannah, GA 31402-0889
(912) 652-5501

Work Experience:

Savannah District, Engineering Division, Water Control Manager (1988-Present)

Savannah District, Engineering Division, Hydraulic Engineer (April 1985-1988)

Savannah District, Construction Division, Clemson Upper Diversion Dam (1983-1984)

CO-OP Student, Clemson University

Charleston District (1980)

Savannah District, Richard B. Russell Dam (1981-1982)

Education:

Bachelor of Science in Civil Engineering, Clemson University (1983)

1 JUDGE BOLLWERK: And do we have any
2 exhibits relative to this panel? I don't think so but
3 let me check.

4 MS. PRICE: None submitted by the Corps.

5 JUDGE BOLLWERK: I'm sorry?

6 MS. PRICE: There are none submitted by
7 the Corps.

8 JUDGE BOLLWERK: Okay, because I think
9 their CV's were attached to their testimony, right?

10 MS. PRICE: Yes, and we have two staff
11 exhibits.

12 JUDGE BOLLWERK: Okay, then we'll deal
13 with those when we have the staff panel. Great, thank
14 you. All right, at this point, then, I think the --
15 we're ready to go ahead with the testimony from the
16 panel from the Corps of Engineers. Hold on one
17 second here. This computer is secure, once again, we
18 can't get into it. So one second. All right. I
19 should say initially that we really appreciate your
20 making yourselves available to us today. You all are
21 busy, as are we, trying to deal with our various
22 responsibilities but I think what you're going to be
23 providing us today is very important in terms of the
24 testimony you're going to be providing and that's in
25 two senses.

NEAL R. GROSS

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1 First of all, because what the Corps is
2 going to be telling us about hopefully today is very
3 important to the issues that we have in front of us.
4 We very much need to understand your process and get
5 your perspective on the process in terms of dredging.

6 But second, I think it's also important for the
7 agency licensing process generally, while the Corps
8 has continued to dredge, since the 1980s although
9 apparently not necessarily in the Savannah River that
10 much, the NRC has not been licensing many new power
11 plants, in fact, probably not many at all.

12 But as you're well-aware, the agency has a
13 number of applications and we're going to be, I think,
14 interacting with you all more both from the NRC
15 staff's perspective as well as the Board's, and so we
16 do appreciate you making yourselves available today
17 and providing your testimony in this case.

18 Thank you very much. All right, let's
19 proceed. I should also mention I expect staff counsel
20 has told you what the process here is. We've
21 described it briefly at the beginning of the hearing.

22 You all weren't here then, but let me just say, this
23 is somewhat unusual. As you probably saw in sitting
24 out in the audience, unlike most hearings that you may
25 have seen, whether on television or otherwise, if

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1 you've been involved in administrative hearings as
2 opposed to judicial or court hearings, mostly
3 generally the counselor are asking the questions of
4 the witnesses.

5 Because of the agency's process called --
6 that's under Subpart L, Part 2 of the Regulations, the
7 Board is the -- the Judges that you see here in front
8 of you in an inquisitorial mode, they are actually the
9 ones that ask the questions subject to whatever
10 additional pre-filed and also as a sort of on the fly
11 questions we may receive from the parties that we
12 decide are appropriate to ask you all. So we're going
13 to be doing the basic questioning today, not the
14 counsel for the parties and that's because it's sort
15 of the way the process works, just so you know what
16 this is all about.

17 All right, let's go ahead and what I'd
18 like to do is move through a series of questions and
19 of course, Judge Trikouros and Judge Jackson will have
20 some questions, I'm sure, as well. First of all, I'd
21 like to get an understanding among you as to sort of
22 your organizational structure in terms of who reports
23 to who and who does what. We can either start with --
24 at one end of the line and go to the other. We can
25 start with the top of the chain and go down, however

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1 you'd like to present it. I'd just sort of like to
2 know the relationship among those folks that are
3 sitting in front of us.

4 MR. MACIEJEWSKI: This is Lyle
5 Maciejewski. I'm in Operations Division and my part
6 of this, my exact job is Project Manager for Savannah
7 Harbor Maintenance. And that which would entail what
8 operations does. I've planned the budget for the
9 individual project and take that forward and then plan
10 and run through the contract and represent Savannah
11 Harbor Maintenance in any other new work project that
12 comes along.

13 I'm connected with Savannah Harbor --
14 Savannah River below Augusta, we call it SRBA because
15 it's connected to Savannah Harbor. So in that sense,
16 I look at the actual budgeting and construction of the
17 work that goes on or would go on.

18 JUDGE BOLLWERK: For a particular project.

19 MR. MACIEJEWSKI: For a particular
20 project, yes.

21 JUDGE BOLLWERK: So NRC has project
22 managers that are responsible for a particular reactor
23 license. For instance, I take it you sort of do the
24 same sort of thing with respect to Corps projects.

25 MR. MACIEJEWSKI: I would suspect so, yes.

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JUDGE BOLLWERK: All right.

MR. MACIEJEWSKI: I have -- well, not I but there are other project managers that handle the St. Brunswick Harbor or the individual new work projects for major construction. Like Savannah Harbor, I did the maintenance, they would do the new design for the -- in construction project on the harbor.

JUDGE BOLLWERK: Okay, thank you.

MS. BERNSTEIN: I'm Carol Bernstein. I am the Chief of the Coastal Branch and the Regulatory Division. Lyle's in Operations Division. Regulatory Division is the part of the Corps that administers Section 404 and Section 10 of the Clean Water Act, Rivers and Harbors Act. So I'm the permitting person on the panel today.

JUDGE BOLLWERK: Okay, there we go, now we're -- all right.

MR. BAILEY: I'm William Bailey. I'm in the Planning Unit.

JUDGE BOLLWERK: Okay.

MR. BAILEY: So our folks evaluate new projects for environmental impacts, the economic feasibility, those things as well as the environmental

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1 compliance of existing projects.

2 JUDGE BOLLWERK: And how would you inter-
3 relate with your two colleagues to your left, no, your
4 right, I'm sorry?

5 MR. MACIEJEWSKI: I fund Bill to do his
6 work.

7 JUDGE BOLLWERK: Okay, that's an important
8 thing.

9 MR. MACIEJEWSKI: And we work together
10 closely and during -- like during an operations
11 project there's obviously, many environmental issues
12 that are happening as you're working. So we work
13 together and keep the project going with his staff. I
14 work with his staff.

15 JUDGE BOLLWERK: So if somebody wants
16 stimulus money, you're the guy then, is that --

17 MR. MACIEJEWSKI: Well --

18 JUDGE BOLLWERK: You wish. No, I'm just
19 kidding.

20 MR. MACIEJEWSKI: Well, each one of us has
21 put in our request, let's put it that way.

22 JUDGE BOLLWERK: All right.

23 MS. BERNSTEIN: Let's see. We work
24 together, planning and regulatory work together when
25 we need sort of consulting services from each other.

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1 If I have a question on a certain environmental impact
2 parameter and there's somebody in planning who can
3 help me, we work together that way, but our processes
4 are totally separate and when there is a
5 congressionally funded civil works project that
6 they're working on in planning, we do not permit Corps
7 projects. So they comply with the same regulations
8 and the intent of the regulations. They have to
9 mitigate but we don't issue a permit for those Corps
10 civil works projects.

11 JUDGE BOLLWERK: Okay, so if I can put
12 this in context, and correct me if I'm wrong, if
13 Southern were to come for a permit, they would see
14 you; is that correct? But if they to work through the
15 -- if congressional appropriations were to be passed,
16 then they would come to see you.

17 MS. BERNSTEIN: Correct.

18 JUDGE BOLLWERK: Okay, got it. All right.

19 MR. SIMPSON: I'm Stan Simpson and I'm the
20 Water Control Manager for the Savannah District.

21 JUDGE BOLLWERK: Okay.

22 MR. SIMPSON: I do the day to day
23 regulation of how much water comes out of the three
24 projects up above Augusta.

25 JUDGE BOLLWERK: Ah, okay.

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1 MR. SIMPSON: I work close with planning
2 in establishing what the rules should be that we
3 follow day-by-day. These are in the Water Control
4 Manuals. We develop the rules and then the drought
5 contingency plan.

6 JUDGE BOLLWERK: Okay, so if someone wants
7 to open the dam, they go see you.

8 MR. SIMPSON: Yes, sir.

9 JUDGE BOLLWERK: Okay. I think we know
10 where we're at now. Okay, great. Terrific. I
11 appreciate very much your explanation. What I'd like
12 to do is sort of walk through the -- and we've heard
13 about both the possibility of the appropriation
14 process and permitting process to get some
15 understanding in a little more detail about how each
16 of them works. And in each instance, one of the
17 things we're obviously, going to be particularly
18 interested in is the Environmental Impact Assessment,
19 the environmental impact process and how that works.

20 Let me start first in terms of the
21 permitting process. I take it an applicant would come
22 to you and apply for a permit to do some kind of
23 dredging and what sort of flows from that?

24 MS. BERNSTEIN: Well, they have to submit
25 a complete application before we can consider whatever

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1 is proposed. And so let me first say that we don't
2 have that from Southern Company.

3 JUDGE BOLLWERK: We heard that in spades
4 today, yes.

5 MS. BERNSTEIN: Once we have that, there's
6 a number of items that we would require, among them
7 sediment testing. We do our own environmental
8 assessment or impact statement as would be determined
9 from the proposal for issuing an individual permit
10 which this would be. And I think Tom mentioned
11 earlier that right now they've only told us about the
12 intake structure and possibly the berth but the amount
13 of impacts that they've proposed just for the limited
14 work authorization are relatively minor considering
15 the scope of the project.

16 So we -- it's very difficult for us to say
17 exactly what our process is without seeing the exact
18 project as proposed and given our role in that
19 process, it may be perceived that we're pre-disposing
20 ourselves toward a certain decision. So I'm very
21 reluctant to say exactly what our direction would be.

22 JUDGE BOLLWERK: I understand.

23 MS. BERNSTEIN: But we look at that
24 application for completeness. We put it out on public
25 notice. We do our environmental assessment and then

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1 we make a permit decision.

2 JUDGE BOLLWERK: Okay. And you mentioned
3 a limited work authorization. Are you -- there's a --
4 that's a term that's used with respect to the early
5 site permit case that we have here. But you're
6 talking about in a different context in terms of -- or
7 is it the same?

8 MS. BERNSTEIN: No, I think I'm using it
9 in the same context that NRC uses it.

10 JUDGE BOLLWERK: Okay.

11 MS. BERNSTEIN: I think I've been educated
12 in that a little bit now. It is a strange concept for
13 us.

14 JUDGE BOLLWERK: Okay. Are they referring
15 to the early site permit or the limited work
16 authorization because that's sort of a sub-section of
17 the early site permit, or a sub-category, I guess.
18 The reason I'm saying this is because the testimony we
19 just heard said that the early -- the limited work
20 authorization really had no impact in terms of
21 dredging and I'm wondering if you mean the early site
22 permit as opposed to the limited work authorization.

23 MS. BERNSTEIN: I believe that --

24 JUDGE BOLLWERK: I'm not trying to trick
25 you here. I just want to make sure we're all on the

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1 same page.

2 MS. BERNSTEIN: The work that's been
3 described to me as part of the limited work
4 authorization does not include the dredging.

5 JUDGE BOLLWERK: Okay, okay, all right.
6 Okay. And in terms of your process, you mentioned
7 that there is a notice that goes out. Then there's an
8 Environmental Assessment that is done. Have I got
9 that in the right order?

10 MS. BERNSTEIN: That's correct.

11 JUDGE BOLLWERK: And you do an assessment
12 first and then if you need to, you do an EIS. Is that
13 the way the process generally works?

14 MS. BERNSTEIN: Normally. In this case
15 because the Nuclear Regulatory Commission is already
16 doing an EIS, we may be able to tier off of it or to
17 use most of the information in it or in the second
18 phase EIS to get what we need and not have to
19 duplicate that process.

20 JUDGE BOLLWERK: When you say second phase
21 EIS, what are you referring to if you --

22 MS. BERNSTEIN: I believe that would be
23 the combined operating license part of the EIS.

24 JUDGE BOLLWERK: Okay, and so you do your
25 EA or your EIS, you already publicly noticed it.

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1 You've gone out with your EA or your EIS. You get
2 comments on that, I take it, from the public. That's
3 why you put it out for public notice.

4 MS. BERNSTEIN: Right. Now, the first
5 public notice that we do is not on the EA.

6 JUDGE BOLLWERK: Okay.

7 MS. BERNSTEIN: It's just a public notice
8 saying, "Here's this project that's proposed. This is
9 what they want to do. This is how they propose to
10 mitigate for it".

11 JUDGE BOLLWERK: Okay.

12 MS. BERNSTEIN: And the public gets 30
13 days normally to comment. With a project of this
14 nature, often times other agencies will request an
15 extension to that notice period. It's usually 30 days
16 but it can go 60, sometimes 90.

17 JUDGE BOLLWERK: Okay, and you say other
18 agencies, it might be other federal agencies, the
19 state agencies?

20 MS. BERNSTEIN: Typically it is the Fish
21 and Wildlife Service, the EPA, and the state
22 Environmental Protection Division. Those are the
23 principal agencies that we work closely with.

24 JUDGE BOLLWERK: And then I take it, you
25 issue the EA or the EIS and that's noticed again. Is

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1 it -- where does the public comment process come in
2 here? You may have already said this and I may have
3 gotten distracted here.

4 MS. BERNSTEIN: It's a little bit
5 different in the regulatory program. If we do an EA
6 and it results in a FONSI --

7 JUDGE BOLLWERK: A Finding of No
8 Significant Impact.

9 MS. BERNSTEIN: -- a Finding of No
10 Significant Impact --

11 JUDGE BOLLWERK: Okay.

12 MS. BERNSTEIN: -- then we go to permit
13 decision from there. We do not have to advertise it
14 again. But an EIS process would mean going through
15 the entire public involvement process as stated. And
16 we have to follow the CEQ guidelines, which I
17 understand the NRC does not.

18 JUDGE BOLLWERK: Well, they do not but
19 they don't -- they do not but they do. I'll put it
20 this way. They say they don't. The NRC's general
21 position is we don't have to follow them, but we
22 generally do. We don't want to.

23 MS. BERNSTEIN: So obviously, a full EIS
24 process is two yearsish.

25 JUDGE BOLLWERK: All right, two years for

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1 the full -- with an EIS, I'm sorry. And if it was a
2 FONSI it would be less than that, I take it?

3 MS. BERNSTEIN: Depending on whether we
4 have all the information that we need to put it
5 together, if there is additional data that's needed,
6 for example, those studies would have to be undertaken
7 first.

8 JUDGE BOLLWERK: Okay. So you may go out
9 -- what the NRC licensing process would call for
10 request for additional information where the staff may
11 go out multiple times, sometimes once, sometimes
12 multiple times, go out and ask for additional
13 information. There's an interaction with the
14 Applicant and the information comes back in and I take
15 it you have a similar process.

16 MS. BERNSTEIN: Correct.

17 JUDGE BOLLWERK: All right. Do you have
18 anything -- any kind of a hearing process like this
19 one, whether it's before -- some kind of a judicial
20 officer, whether it's a Board, Administrative Law
21 Judge, sometimes it's an agency employee that's
22 designated as a presiding officer or any kind of a
23 judicial officer?

24 MS. BERNSTEIN: No, we do not.

25 JUDGE BOLLWERK: Okay. So after the

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1 public comments you receive, are basically the
2 public's opportunity to participate and then you would
3 -- based on the EIS that you've sent out for public
4 comment and then you decide whether you're going to
5 issue the permit.

6 MS. BERNSTEIN: Correct, for larger
7 projects anybody, any member of the public or the
8 agencies may request a public hearing.

9 JUDGE BOLLWERK: And what does that
10 involve?

11 MS. BERNSTEIN: That's a very formal
12 proceeding presided over by the District Engineer. We
13 don't do many of them. The purpose of a public
14 hearing in the regulatory context is to provide
15 information that you can't get any other way. So we
16 look at it, you know, can we get this information in
17 some other way? Is it a report that we need to get
18 from someone? Do we really need to hold a hearing?
19 They're very structured and they have a court reporter
20 sitting there and it's just testimony. There's no
21 interaction, no Q and A.

22 So often, if the purpose of it really is
23 to provide a public forum for speaking out, we will do
24 what we call a workshop instead or the Applicant will
25 hold the workshop.

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1 JUDGE BOLLWERK: Okay, and again, the NRC
2 staff does these. Actually, we're going to be doing
3 some more appearance statements, allowing members of
4 the public to come in and address us as well. So the
5 -- so the District Engineer basically sits and hears
6 testimony but doesn't ask any questions if I
7 understood. You said there were no questions.

8 MS. BERNSTEIN: If it's a formal hearing,
9 yes.

10 JUDGE BOLLWERK: And how do the folks know
11 what the person needs -- what information they're
12 looking for, why you're holding the hearing? Is there
13 a notice that says, "Come in and please tell me about
14 X, Y or Z"? How does that work?

15 MS. BERNSTEIN: People can provide any
16 testimony that they desire, if they think it's
17 germane, if it's relevant to the project and they want
18 it in the record.

19 JUDGE BOLLWERK: I see. So they -- if
20 they request a hearing, then they must have in mind
21 something they need the District Engineer to find out
22 about and they come in and basically tell him or her.
23 He or she sits there and listens and then says,
24 "Thank you very much", and away you go.

25 MS. BERNSTEIN: That's correct.

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1 JUDGE BOLLWERK: Okay, any questions about
2 that? Okay. Anything else you think we ought to know
3 about that process you haven't mentioned up to this
4 point that's important?

5 MS. BERNSTEIN: I don't think so, sir.

6 JUDGE BOLLWERK: All right.

7 JUDGE TRIKOUROS: I have a quick question
8 about your rules. SNC in their testimony indicated
9 that in filing a permit application with you let's say
10 for dredging associated with some activity near the
11 site for a barge slip or something along those lines,
12 that they could not then supplement that permit with a
13 request to do dredging along the federal navigation
14 channel. How -- why is that?

15 MS. BERNSTEIN: Our regulations require us
16 to look at projects as a single and complete project.

17 So in one sense, if an applicant comes in for one
18 piece over on the site proper, on land, and they don't
19 tell us about the other parts, we may view it as
20 piecemealing. And some applicants will deliberately
21 attempt to do that so that the project in totality
22 appears to be smaller.

23 So our regulations require us to look at
24 single and complete projects and then the NEPA side of
25 the regulation again, you want to look at things

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1 cumulatively and holistically.

2 JUDGE BOLLWERK: Trying to avoid
3 segmentation.

4 MS. BERNSTEIN: Exactly.

5 JUDGE TRIKOUROS: And no permits have been
6 filed yet with you from Southern.

7 MS. BERNSTEIN: No, sir.

8 JUDGE BOLLWERK: Just in terms of the
9 permit, how long are the permits good for?

10 MS. BERNSTEIN: An individual permit such
11 as this would be generally good for five years, but
12 they may be extended under certain circumstances.

13 JUDGE BOLLWERK: Is there any other
14 process that goes with an extension? Do they have to
15 come back and -- I think you have to reapply.
16 Anything, do you have to do another Environmental
17 Impact Statement or anything else like that?

18 MS. BERNSTEIN: As long as they come back
19 and request an extension before it expires, it's a
20 pretty minor process. If there was a modification to
21 the project and it was considered a major
22 modification, then it would have to go back out on
23 notice and be re-evaluated. If it's a minor
24 modification, maybe not.

25 JUDGE BOLLWERK: Okay, and we heard

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1 testimony which I think you probably heard as well
2 about the permit and how it would be stated, assuming
3 that they were to come in and ask for dredging and
4 again, we'll assume that the -- as it's been
5 characterized at least up to this point, there were
6 certain spots within the river that needed to be
7 dredged, these sandbars. Would the permit specify
8 those sandbars as the dredge points or would it be you
9 can dredge between this point and this point or how
10 does that generally happen to the degree it's --

11 MS. BERNSTEIN: In most cases, we're
12 pretty specific about location because we may have
13 permit conditions that are very specific if, for
14 example, an endangered species was known to be located
15 in a certain spot. Also, if there was snag removal
16 issues in a specific area where there was a concern
17 about bank sloughing, for example, there might be very
18 specific conditions, so generally speaking, I'd say it
19 would be for very specific areas with some flexibility
20 to adaptively manage.

21 JUDGE BOLLWERK: And to the degree you can
22 generalize and do the best, obviously, you can, what
23 types of permit conditions do you sometimes put on
24 just to deal with general problems? Like you
25 mentioned endangered species. What might be the type

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1 of permit condition you'd see to deal with something
2 like that?

3 MS. BERNSTEIN: Well, there's such a wide
4 range of possibilities. We generally have a condition
5 for cultural resources, for example, that if they
6 should come upon something, they have to stop. It
7 could be a time of year restriction for the fish
8 windows. It could be as, you know, specific to the
9 type of dredge and the disposal area, all kinds of
10 things, the type of sediments.

11 JUDGE BOLLWERK: And again, when you issue
12 them a permit, they go do the work. It's not the
13 Corps' responsibility to do the work. They've got the
14 permit, feel free to dredge it up in the way we put
15 out in the permit. Have I described that correctly?

16 MS. BERNSTEIN: It's the Applicant's
17 responsibility to conduct the work and we would be
18 conducting a compliance inspection at some point. We
19 are responsible for compliance.

20 JUDGE BOLLWERK: Okay, and would the
21 permit specify how the dredging is to be done? Is
22 that -- might that be a condition? In other words,
23 I'm way out of my league here, but do it this way,
24 don't do it that way, or you have to use certain
25 methods or --

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1 MS. BERNSTEIN: It would specify the type
2 of method and the disposal area, yes.

3 JUDGE BOLLWERK: Okay, so the disposal
4 area would be part of the permit then as well.

5 MS. BERNSTEIN: Yes.

6 JUDGE BOLLWERK: All right. Do you know
7 if, any of you, if there are any disposal areas along
8 this portion of the river that's being talked about
9 here that are already permitted?

10 MR. BAILEY: I'm not aware of any.

11 JUDGE BOLLWERK: Okay. Let me see here.
12 All right, thank you. That was a terrific
13 description. I know a lot more about the permitting
14 process. Now, let's go over to the congressional
15 appropriation process. Maybe we can contrast it too
16 in terms of what we just heard and how what you get
17 involved with would be different both in terms of --
18 it's probably initiated in a different way. Nobody
19 comes in and applies -- well, maybe they do but that's
20 -- we won't go there.

21 Anyway, how does your process work?

22 MR. BAILEY: A lot of our effort is trying
23 to figure out what to do. In the civil works side,
24 someone, a government agency, will start it off by
25 saying they have a water resource problem that they

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1 would like the Corps to help them solve.

2 JUDGE BOLLWERK: All right.

3 MR. BAILEY: So then we go in to try to
4 define the problem, so we make sure we're fixing the
5 right problem, try and define it and then look at
6 alternatives and then the potential impacts to those
7 alternatives and then coming up with a proposed
8 project, proposed action, prepare the documents and
9 then go out to the public and to the agencies, asking
10 what they think of that action. And then completing
11 that NEPA process, that environmental process, sending
12 a -- preparing a final report that would then go up
13 from the local office up through a region, up to
14 Washington, to eventually to Congress where they would
15 decide, you know, they could choose to act on that,
16 whether to authorize that.

17 JUDGE BOLLWERK: Okay.

18 MR. BAILEY: And then separately they --
19 normally, separately they have another decision on
20 whether to fund it.

21 JUDGE BOLLWERK: Okay, so it sounds like
22 then the projects that you deal with tend to be
23 instituted by federal or perhaps state agencies that
24 have a particular problem that needs to be dealt with
25 along the river or a body of water.

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1 MR. BAILEY: State or local, county or
2 city.

3 JUDGE BOLLWERK: Okay. Do you ever get --
4 you all have had contact with Southern already, I
5 guess, and do you get private entities that come in
6 and say, "We have a problem, can you help us out"?

7 MR. BAILEY: We -- the Civil Works side
8 now is -- our projects are cost-shared with a non-
9 federal sponsor.

10 JUDGE BOLLWERK: Okay.

11 MR. BAILEY: The Corps doesn't do anything
12 -- doesn't start a project by itself. Our non-federal
13 sponsors must be a government agency. So an industry,
14 a private industry, we could not help them.

15 JUDGE BOLLWERK: All right. If I'm
16 understanding, if this is -- if you don't want to
17 answer this question, you shouldn't. I don't want to
18 get you involved in any kind of conflict problem here,
19 but I think, as I understand Southern's basic argument
20 is there is a statute that says, "This river should be
21 dredged to a certain level", and it does not appear
22 that that statute is being followed at least not to
23 the letter of the law. Is that something you would be
24 concerned about, is it something you would get
25 involved with? Would you need another agency to come

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1 and say the same thing or how would that work?

2 MR. BAILEY: Congress authorizes a project
3 so it says you can do a certain action. They
4 separately --

5 JUDGE BOLLWERK: Right, I understand.
6 There's a statute or an authorization but there's just
7 no money appropriated to do it, is that the --

8 MR. BAILEY: Correct.

9 JUDGE BOLLWERK: Okay, and so who would go
10 back to the Congress -- well, I mean, on what basis or
11 who or why would you go back to the Congress and say,
12 "We need appropriated money to do what you've
13 authorized us to do but you've never given us any
14 money to do, or at least not recently given us any
15 money to do"?

16 MR. BAILEY: The normal process is the
17 Corps makes budget requests. They start at the
18 district level and go up through at the regional
19 level, go up to the Washington level and then it comes
20 out as a President's budget proposal to Congress.

21 JUDGE JACKSON: Mr. Bailey, I'm a little
22 surprised you don't -- the Corps doesn't have some
23 small base budget just to take care of things that
24 crop up without having to go for congressional
25 approval on every project. Apparently not.

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1 MR. MACIEJEWSKI: This is Lyle
2 Maciejewski. No, we don't. We are project funded and
3 every -- the process, as Bill said, is that we develop
4 our budgets locally, then go regionally, then
5 nationally. At each level, these budgets, the
6 individual components of the budget are ranked against
7 each other and there's a certain amount of money in
8 total. So it's very high competition for any dollars.

9 And entering a new project into this, you
10 have to have some really good justification to get to
11 a level where it's competing against some standard
12 budgets.

13 JUDGE JACKSON: And you may have already
14 answered this then. What is the time frame if -- once
15 you've received a request for this process to
16 complete?

17 MR. MACIEJEWSKI: The budget process
18 typically takes 18 months. Like where we'd be
19 preparing our FY '11 budget several months from now
20 and then it will go up through the process and then it
21 would be -- FY '11 was when we get funded.

22 JUDGE JACKSON: Okay, thanks.

23 MR. BAILEY: The Corps does have -- I
24 guess one follow-up. The Corps does have certain
25 authorities to start some small projects, to construct

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1 some small projects where they -- we don't have to go
2 back to Congress to do some of those. They have
3 delegated the authority down within Department of Army
4 for small ones, but then the maintenance of those is
5 a different issue.

6 JUDGE JACKSON: Okay, and a project like
7 we're discussing here would not qualify as being a
8 small project, I take it.

9 MR. MACIEJEWSKI: No, this is an
10 authorized project.

11 JUDGE JACKSON: Okay, thanks.

12 JUDGE BOLLWERK: Is small defined by the
13 dollar value of the project?

14 MR. BAILEY: Yes.

15 JUDGE BOLLWERK: And we heard one to \$5
16 million potentially. I mean, that was very broad and
17 that would not quality as small, I think.

18 MR. BAILEY: That does meet the criteria
19 of some of these continuing authorities projects but
20 again, this one is a currently authorized project.

21 JUDGE BOLLWERK: Okay, I see because the
22 statute is in place it's a question of the
23 appropriation.

24 MR. BAILEY: Yes.

25 JUDGE BOLLWERK: Okay. And so that takes

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1 it out of that small category being used, that
2 category being used for it.

3 MR. BAILEY: Yes.

4 JUDGE BOLLWERK: Okay. All right. In
5 terms of the environmental process that you all go
6 through, how is it different than what we heard on the
7 permitting side, if at all?

8 MR. BAILEY: It's pretty similar, I think.

9 JUDGE BOLLWERK: All right, so you put out
10 a notice. You ask for comments. You may get
11 responses from state or federal entities that say, "We
12 need more time". Members of the -- you do an
13 Environmental Assessment first. If you issue a FONSI,
14 you proceed on the line. If you issue an EIS, then
15 there's an opportunity for public comment, is that --

16 MR. BAILEY: We would normally -- the
17 normal process is that we would look at -- as we're
18 evaluating the project, we would see -- we would make
19 the determination of whether we think it's an
20 Environmental Assessment or Environmental Impact
21 Statement, which it would require. And if it was an
22 Impact Statement, we would shift to that process early
23 on, because that has a separate process, a longer one
24 and asking the public to comment right from the start
25 at what they think the issues are and then reviewing a

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1 draft and then reviewing a final. So it's a little
2 bit longer process.

3 JUDGE BOLLWERK: Okay, and well, I heard
4 two years for the process if it went all the way to an
5 EIS on the permit side, if I understood that
6 correctly. I mean, and so is it about the same,
7 although I heard 18 months. I don't know --

8 MR. MACIEJEWSKI: The 18 months was the
9 budgetary process.

10 JUDGE BOLLWERK: Okay.

11 MR. BAILEY: Getting the Corps to go all
12 the way through a civil works process is pretty
13 lengthy.

14 JUDGE BOLLWERK: All right, more than 18
15 months?

16 MR. BAILEY: Yes.

17 JUDGE BOLLWERK: Okay. And do you have --
18 I take it because you don't have a -- you're not
19 issuing a quote, unquote "permit", you're basically
20 making a recommendation to Congress, it goes through a
21 process within -- you mentioned, it has to go to
22 Washington, I guess, and get approved. It then goes
23 to a congressional committee, I take it, that looks at
24 it. I mean, there's the Water and Energy
25 Appropriations Act that's all part of that process, I

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1 take it.

2 MR. BAILEY: Uh-huh.

3 JUDGE BOLLWERK: Then you -- for instance,
4 there's no -- we heard about the District Engineer who
5 may hold a hearing from time to time if somebody
6 requests one. I take it that's not part of the
7 process.

8 MR. BAILEY: The Corps, yes, that is part
9 of the --

10 JUDGE BOLLWERK: It is.

11 MR. BAILEY: -- civil works process also.
12 When we put out a document for public comment, again,
13 people can ask for a hearing. We would go through
14 some of the same evaluation process of what's the best
15 way to obtain the information that the people haven't
16 been able to provide and we may do a formal hearing
17 like Carol said, or do something less formal and we
18 normally --

19 JUDGE BOLLWERK: Letter of request or
20 issue a request, just try to get the information, a
21 phone call or send them a letter saying, "Please send
22 us the following"?

23 MR. BAILEY: Or, yes, or have just a
24 public meeting where we -- I guess a common approach
25 now is we would have Corps people around in a room

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1 that are familiar with the project that can answer
2 specific questions. We have a court reporter
3 somewhere that people can go and talk to and leave,
4 you know, a statement with them.

5 JUDGE BOLLWERK: That's a public meeting
6 process.

7 MR. BAILEY: Yes.

8 JUDGE BOLLWERK: And that's like your
9 public meeting process, I take it, same basic idea?

10 MS. BERNSTEIN: Yes, sir. We might have
11 different stations set up around the room to address
12 various issues and people could ask questions or fill
13 out comment cards, but there's a lot more interaction
14 instead of just a one-way testimony type setting.

15 JUDGE BOLLWERK: Okay, all right. And
16 it's a District Engineer that would preside at one of
17 your hearings as well or someone else?

18 MR. BAILEY: Normally, it would be
19 somebody else.

20 JUDGE BOLLWERK: All right, someone -- is
21 it regional, someone from Washington?

22 MR. BAILEY: No, it would -- it may be --
23 it may be me as the Chief of Planning.

24 JUDGE BOLLWERK: Oh, okay, all right. All
25 right.

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1 MR. MACIEJEWSKI: I'd like to clarify one
2 thing.

3 JUDGE BOLLWERK: I'm sorry?

4 MR. MACIEJEWSKI: I'd like to clarify one
5 thing. Bill was talking about going through the
6 process. This is typically how we start the process
7 to do the work. After he does -- his process is
8 defining the work to be done. After he does that,
9 then it comes over and goes into the budgetary
10 process.

11 JUDGE BOLLWERK: Okay.

12 MR. MACIEJEWSKI: You don't start both of
13 those at the same time.

14 JUDGE BOLLWERK: You have to have an
15 approved project before you go and look for money for
16 it.

17 MR. MACIEJEWSKI: And you have to know
18 what you're going to do.

19 JUDGE BOLLWERK: Okay. And I take it when
20 that project is approved, does it carry the same sort
21 of specifications as you might see in a permit in
22 terms of what exactly is supposed to be done? I mean,
23 who -- but this is the Corps doing the work, right,
24 not a private entity or private individual. So it
25 doesn't have -- I mean, the Corps, in theory, knows

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1 what's appropriate and doesn't have to have a permit
2 issued to itself that has restrictions.

3 MR. BAILEY: But it's still the Corps --
4 it's the Corps' responsible for the action so the
5 Corps is part of the coordination with the resource
6 agencies and the public we're also explaining the
7 project that is being proposed. And so the
8 environmental approvals that we get back are for the
9 project we describe.

10 JUDGE BOLLWERK: Okay, so it's basically a
11 description of the project relative to the
12 Environmental Impact Statement and any other documents
13 you might have that are going to define what the Corps
14 is supposed to do.

15 MR. BAILEY: Yes.

16 JUDGE BOLLWERK: And then that goes over
17 to the budget process and at that point you begin to
18 interact -- have you already interacted with the
19 Congress or is it when you get in the budget process
20 then it goes in that direction?

21 MR. MACIEJEWSKI: Well, if it's in the
22 budget, then it would go up.

23 JUDGE BOLLWERK: Okay.

24 MR. MACIEJEWSKI: Or start to go up.

25 JUDGE BOLLWERK: And then, I take it, it

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1 would go to the congressional committees in the House
2 and Senate that look at appropriations for water
3 projects. If they send it out, report it out, it goes
4 -- becomes part of the -- in theory, the
5 Appropriations Act and then in theory, once you've got
6 appropriated money, you're ready to move forward on
7 this.

8 MR. MACIEJEWSKI: It may not be a main
9 project. It may be just approved as an O&M line item.
10 I don't know which would it be.

11 JUDGE BOLLWERK: You mean it might be
12 conglomerated with a lot of other things under a --

13 MR. MACIEJEWSKI: The Operations and
14 Maintenance Budget for the Corps is just one --
15 they're individual line items but we're given one pot
16 of money. The Corps distributes it on down to the
17 regional --

18 JUDGE BOLLWERK: Okay, but I take it, the
19 congressional committee is aware of all the projects
20 that are sort of rolled up into this number or are
21 they just given a number and they look at it and -- if
22 you know?

23 MR. MACIEJEWSKI: I believe they look at -
24 - someone looks at each one of those. I don't know
25 the exact details.

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1 JUDGE BOLLWERK: All right, okay.
2 Anything about either the permitting process or the
3 appropriation side, the authorization process we've
4 talked about that -- anything else you want to tell me
5 about it that we -- tell us about it that we haven't
6 discussed that you think is important?

7 MR. BAILEY: I think just the -- for work
8 to be done on an authorized project, like Lyle said,
9 we will soon begin our work on our 2011 budget, so a
10 budget preparation is -- you know, is a couple years
11 down the road.

12 JUDGE BOLLWERK: Right.

13 MR. BAILEY: It's looking forward that
14 far. It takes that long to get through the process.
15 So that's just --

16 JUDGE BOLLWERK: So basically, you're
17 looking for money that will be made available as of
18 October 2010, I'm sorry, October -- I'd better get the
19 right year.

20 MR. BAILEY: 2011.

21 JUDGE BOLLWERK: Fiscal year, so it's
22 October 2010, right? FY '11? Right? Have I got
23 that right? I think I do.

24 MR. MACIEJEWSKI: There is an alternate.
25 There is an alternative. Congress would direct the

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1 Corps and say, "You will do this or this, and here's
2 the money". We have been directed --

3 JUDGE BOLLWERK: So sometimes -- how does
4 that impact then the environmental impact process that
5 you're going through? If the Congress says, "Here's
6 the money, go do this", do you kind of then look at
7 the environmental impacts or do you say, "Thank you
8 very much", and off you go?

9 MR. BAILEY: Normally, they would do that
10 after a project has already been authorized.

11 JUDGE BOLLWERK: Okay.

12 MR. BAILEY: If it's just -- then it would
13 be money to -- for maintenance money.

14 JUDGE BOLLWERK: Okay, okay.

15 MS. BERNSTEIN: But it is still a linear
16 kind of process where you go through the planning, and
17 I'm talking Bill's area, civil works. You go through
18 the planning and design and then construction, you
19 know, it takes a long time. So you're two years out
20 for budget and then you go to your planning and
21 environmental work, and then you get into your final
22 design and construction. So it's not a short process.

23 JUDGE BOLLWERK: Okay. If I were to come
24 to you and apply for a permit today, when am I likely
25 -- again, within the realm of this is a general

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1 question, but when would I likely get that permit so
2 that I could begin to do my dredging?

3 MS. BERNSTEIN: In an absolutely perfect
4 world, individual permits are issued in 120 days.

5 JUDGE BOLLWERK: Okay, and FOIA requests
6 are responded to in 10 days, yes, that's true. All
7 right.

8 MS. BERNSTEIN: Again, it depends on
9 whether we have all the information and data that we
10 need to properly evaluate it. If, for some reason, we
11 had to do an EIS, we typically are not funded within
12 the regulatory budget at all to do EIS's. We have to
13 go to headquarters and ask for that funding usually a
14 year ahead. We need to give them a heads up and say,
15 "We've got this coming down, and put us in the budget
16 for this EIS for this project".

17 Even though typically we will choose the
18 contractor that is going to prepare an EIS, the
19 Applicant pays for it.

20 JUDGE BOLLWERK: Okay.

21 MS. BERNSTEIN: So, it's another thing, an
22 unknown that could be added on to a project like this.

23 JUDGE BOLLWERK: All right, so when you
24 said two years, that's sort of what you were talking
25 about, going through that whole process is probably --

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1 as a practical matter --

2 MS. BERNSTEIN: I meant two years if we
3 had to do an EIS at all, including the public scoping
4 and the public involvement and the Federal Register
5 notices and everything you have to do for an EIS, it's
6 about two years.

7 JUDGE BOLLWERK: Okay, it might be shorter
8 than that if there were a FONSI involved and then
9 there would be --

10 MS. BERNSTEIN: Correct.

11 JUDGE BOLLWERK: And in terms of the
12 process, if I were a state -- I'm sorry, a federal
13 entity and came to you and said, "I need some dredging
14 done," how long till they could see dredges in the
15 water, as it were, in terms of your process? Two
16 years as well?

17 MR. BAILEY: For a brand new project?

18 JUDGE BOLLWERK: Yes.

19 MS. BERNSTEIN: Well, two years first to
20 get it in the budget.

21 JUDGE BOLLWERK: Okay.

22 MR. BAILEY: Just to start the study.

23 JUDGE BOLLWERK: Okay.

24 MR. BAILEY: It's --

25 JUDGE BOLLWERK: I see, all right.

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1 MR. BAILEY: -- a long time.

2 JUDGE BOLLWERK: Okay, so it might be
3 twice that long potentially.

4 MS. BERNSTEIN: Possibly.

5 JUDGE BOLLWERK: Okay.

6 MR. MACIEJEWSKI: One other thing, you've
7 eluded to the stimulus.

8 JUDGE BOLLWERK: Nuclear power plant
9 licensing is not a quick process either, so you don't
10 have to be you know, embarrassed in front of us.

11 MR. MACIEJEWSKI: One other thing you've
12 eluded to is stimulus. Anything that would need to be
13 done in the near future without talking specifics, the
14 Corps is going to be stressed in the number of
15 projects and what we're doing. So our staffing is --
16 in the near future is going to be very, very tight.

17 JUDGE BOLLWERK: Okay. Do you have a
18 question?

19 JUDGE TRIKOUROS: Well, I need just a
20 clarification. You can only do work if it's
21 authorized, such as the dredging of the federal
22 navigation channel of the Savannah River or you can do
23 work if it's requested by a government agency, state
24 or I guess a local government agency, but not a
25 private party. Is that correct?

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1 MR. BAILEY: We could study a project if
2 it was requested by a state or a county and we can't
3 even study it if it's requested by a private industry.

4 JUDGE TRIKOUROS: You could study -- you
5 could study it if it's requested by a government
6 entity and then request the funds from Congress to do
7 it if you deem it worthy to -- of work?

8 MR. BAILEY: A private entity could not be
9 a cost sharing study, couldn't share the cost of the
10 study with us.

11 JUDGE TRIKOUROS: Okay, well, you're going
12 where I was actually going to. The -- I'm trying to
13 understand your relationship with a private entity.
14 The -- a private entity would be allowed to file a
15 permit to perform work that you're authorized to do?

16 MR. BAILEY: It would be work that they
17 would want to do.

18 JUDGE TRIKOUROS: Well, let's say that a
19 private entity wanted to dredge the federal navigation
20 channel. Could they file a permit to do that?

21 MS. BERNSTEIN: They would apply to the
22 Regulatory Division to do that.

23 JUDGE TRIKOUROS: And they might be
24 allowed to do that.

25 MS. BERNSTEIN: Might be.

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1 JUDGE TRIKOUROS: But they could not
2 provide you with funds for you to do that.

3 MS. BERNSTEIN: No, not under our
4 processes.

5 JUDGE TRIKOUROS: That's interesting.

6 JUDGE BOLLWERK: And maybe, I just want to
7 make sure I'm clear one last time; the -- a state or
8 federal entity comes to you and says, "We'd like to" -
9 - "We have a project that we'd like for you to
10 consider". They have to then help you fund or take
11 responsibility as well for funding the project
12 planning portion of it as you look at it. Now, is the
13 Environmental Impact Statement done then or is it only
14 done --

15 MR. BAILEY: It could be done then.

16 JUDGE BOLLWERK: It could be done then.
17 So you've got that all in place and then you go over
18 to the appropriation process once you've gone through
19 that whole -- okay. I've got the proper sequence now.
20 Okay. Let me ask a couple of more specific questions
21 if I could. What is your -- we heard some testimony
22 about the amount of draft that a barge would need to
23 have in terms of dredging. Do you all have -- and
24 basically, we're talking about a half a foot, I think,
25 was what --

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1 JUDGE TRIKOUROS: Five point five.

2 JUDGE BOLLWERK: Yeah, 5.5 but, right, but
3 there was basically between where they wanted to
4 dredge to and the bottom of the barge is a half a
5 foot, am I right about --

6 JUDGE TRIKOUROS: I think it varies but
7 it's as low as half a foot.

8 JUDGE BOLLWERK: Do you all have any
9 protocols or requirements about how far down they have
10 to dredge?

11 MR. MACIEJEWSKI: I do not know that.

12 JUDGE BOLLWERK: Okay, all right.

13 MR. MACIEJEWSKI: I mean, I don't know.

14 JUDGE BOLLWERK: I mean, they would have
15 to tell you that and you'd look at it in terms of the
16 permitting process and say this is or isn't
17 appropriate because you don't want them not dredging
18 enough if you're going to give them the authority so
19 they basically keep grounding their boats. That
20 wouldn't make any sense.

21 MR. BAILEY: On the civil side, I know we
22 -- in looking at deep draft harbors, we do look at how
23 much -- providing a certain amount of water under the
24 keel. So that's all part of the evaluation of the
25 project.

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1 JUDGE BOLLWERK: All right. You mentioned
2 before you have -- you interact with other federal
3 agencies and state agencies, Fish and Wildlife
4 Service, I'm sure. What, at this point, is your
5 relationship with the Nuclear Regulatory Commission in
6 terms of the Memorandum of Understanding you have?
7 How does -- how are you -- in terms of a project like
8 this one or some other where there may be some
9 dredging that has to be done along a river that's --
10 to aid the construction of a nuclear facility?

11 MS. BERNSTEIN: The MOU that was recently
12 revised between our agencies is pretty specific to the
13 permitting arena and not the civil works arena,
14 because civil works is so specific and their guidance
15 is so specific, in the spirit of cooperation, they
16 can't say, "We're just going to go and dredge this
17 channel for you". They have to go through the funding
18 process in order to be able to do anything of that
19 nature.

20 So really that MOU is specific to the
21 permitting arena and I think it says, you know, we're
22 going to work together to help to streamline these
23 processes and probably the overarching thing is to
24 avoid duplication of effort and partner on the EIS
25 process and that did not happen in this case.

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1 JUDGE BOLLWERK: All right. Right, and I
2 take it part of that was a question of timing, that
3 this --

4 MS. BERNSTEIN: This is one of the first
5 projects and the MOU happened after this project was
6 underway is my understanding.

7 JUDGE BOLLWERK: All right. In terms of a
8 project, I take it, you -- my understanding under the
9 MOU and I should mention for the record, hold on let
10 me get the right page here, the MOU is published in
11 the Federal Register and it's at line 75 of the
12 Federal Register, page 554 -- I'm sorry, 55549, the
13 September 25th, 2008 issue of the Federal Register.

14 The NRC, as I understand it, under this
15 MOU is the lead agency for nuclear power plant
16 licensing projects but I take it as part of this
17 permitting process, you would be involved with the
18 Environmental Impact Statement.

19 MS. BERNSTEIN: If we had started out at a
20 gate together, we would have been able to tell NRC and
21 Southern Company exactly what we needed for our
22 documentation so that it could all be addressed
23 simultaneously.

24 JUDGE BOLLWERK: So if this MOU had been
25 placed when this application came in and was being

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1 processed by the agency, you and NRC would have
2 interacted fairly early on in the process, I take it.

3 MS. BERNSTEIN: That would have been the
4 intent.

5 JUDGE BOLLWERK: All right, and who would
6 have provided -- who would have done the Environmental
7 Impact Statement relative to the dredging that's being
8 discussed or any -- I mean, we can take it outside
9 this particular -- well, I guess we shouldn't but, in
10 terms of the dredging process, who would have done --

11 MS. BERNSTEIN: NRC, as the lead agency,
12 would have been the primary responsible -- the
13 principal for the EIS and we would have said, "But we
14 want X, Y and Z to be included in there".

15 JUDGE BOLLWERK: Okay.

16 MS. BERNSTEIN: If dredging were proposed
17 as part of the overall project, then it would need to
18 be addressed in that document.

19 JUDGE BOLLWERK: Okay, and in terms of the
20 one that you prepared and told them you needed
21 information, would you prepare something that said,
22 "This is a supplement to the EIS that deals with
23 dredging", or how would -- what would it look like?

24 MS. BERNSTEIN: I'm not sure I understand
25 your question. In terms of what I prepared --

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1 JUDGE BOLLWERK: Well, you said that you
2 wanted to make sure you have input into the process if
3 I understood you correctly or maybe I'm -- I may be
4 mischaracterizing what you're telling me. Maybe I
5 should go back and -- what -- when you and NRC
6 interacted on -- with respect to this dredging, what
7 would you send them or what would they send you?

8 MS. BERNSTEIN: The NRC would have
9 contacted the Corps and requested us to be a
10 cooperating agency on an EIS to build Plant Vogtle or
11 add the reactors to Plant Vogtle and they would have
12 to tell me what the entire scope of the project was
13 going to be. And if that included the berth and the
14 dredging, then we would be able to give them a list of
15 all the things that we would need to address in that
16 EIS.

17 JUDGE BOLLWERK: And when you say "we",
18 you mean, "we" as in --

19 MS. BERNSTEIN: Collectively, the Corps
20 and the NRC.

21 JUDGE BOLLWERK: All right, and in terms
22 of -- you would then said that, "We need this
23 information". You would expect them then to respond
24 to you by giving you the information, I take it or are
25 they gathering it and then the two of you are going to

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1 work together on another document that -- I guess
2 that's where I'm -- I'm trying to figure out what this
3 final -- what the final document looks like that you
4 all are going to prepare, whoever is going to prepare.

5 MS. BERNSTEIN: Well, if they're the lead
6 agency, then they would have the overall oversight and
7 financial responsibility for accomplishing these
8 studies that need to be done for the EIS and compiling
9 all the information. We would be basically providing
10 guidance or maybe a sample outline or -- and all of
11 the regulatory specifications, if you will. For
12 example, if we needed sediment testing, we would tell
13 them what needs to be included to meet the Corps'
14 requirements for a permit. So we would provide all
15 that information so that they could address it in the
16 EIS and then it's done once, not first with an early
17 site permit, EIS and then again for a regulatory
18 permit.

19 JUDGE BOLLWERK: All right, and would --
20 in terms of giving -- in addition to giving them
21 information they would need to include, they would
22 need to generate, would you have any additional
23 responsibility in terms of reviewing it, agreeing to
24 it, concurring in it, anything like that? I mean,
25 there's a cooperative process here. I'm just

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1 understanding, after you're given them that initial
2 document, that initial request, maybe it's not even
3 called a request, additional input as to what they
4 need to have in their EIS, what else do you do at that
5 point?

6 MS. BERNSTEIN: In most cases, we would do
7 a Record of Decision for our agency that the District
8 Engineer would sign, so that we would make a decision
9 separate from the permit or the licensing decision for
10 our 404 or Section 10 permit that we're going to
11 issue. We would tier a Record of Decision off that
12 same document because assuming that it included
13 everything that we needed.

14 JUDGE BOLLWERK: Okay. So the NRC would
15 issue probably a draft and then a final Environmental
16 Impact Statement. You have told them what needs to be
17 in that. They have analyzed it. You look at it.
18 Hopefully, it meets your requirements. Then you
19 simply take that and make that part of your record and
20 act off of that.

21 MS. BERNSTEIN: That's correct.

22 JUDGE BOLLWERK: Have I got the process
23 right? Okay.

24 MR. MOULDING: Your Honor, if I may just
25 ask a quick question here. You were asking questions

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1 about a hypothetical situation.

2 MS. BERNSTEIN: Hypothetical, yes.

3 MR. MOULDING: Okay.

4 JUDGE BOLLWERK: I'm just trying to
5 understand how the Memorandum of Understanding works.

6 MR. MOULDING: Okay, thank you.

7 JUDGE BOLLWERK: Because we already
8 established it didn't work that way here because it
9 wasn't in place, but I'm just trying to understand how
10 this document was intended to operate. Yes.

11 MR. MOORE: Your Honor, this is Grady
12 Moore here in the middle.

13 JUDGE BOLLWERK: Oh, sorry, here we go.

14 MR. MOORE: I'm not sure you read that
15 cite into the record right. Since we had a break
16 there, I thought you might want to --

17 JUDGE BOLLWERK: Is it 73 Federal
18 Register, page -- oops, I'm sorry. I think that's
19 what happened with double-sided documents, 73 Federal
20 Register, 55546, thank you. I was reading the back
21 side of the paper rather than the front side, 55546
22 but the date is September 25th, 2008. I appreciate
23 it.

24 JUDGE JACKSON: Judge Bollwerk, could I
25 try to clarify something? In a situation where

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1 Southern would put in a request, say, to the Corps
2 that they would like this to be dredged and they made
3 a case for that and you became convinced that it was
4 worthy as part of your responsibility to maintain this
5 navigation channel and you were to go forward with
6 that project. Would the permitting that we've just
7 been talking about be relevant or would it be --
8 that's what I thought because what I thought would
9 happen is they would request that under your
10 responsibilities to maintain the channel that they
11 would ask that it be done and then you would go
12 through the whole thing and you decided that the
13 project had merit. You'd put it in your budget
14 request.

15 If you did, it would go up through and see
16 if we could get congressional approval. In that case,
17 I'm -- would you then do your own EIS statement or EA
18 or whatever you're going to have to do? Okay, so that
19 would be then -- since you're doing it, you'd take on
20 that responsibility, your agency.

21 MR. BAILEY: Yes.

22 JUDGE JACKSON: Okay, and it seems like
23 then you would have a different relationship with what
24 we're talking about in trying to evaluate this early
25 site permit. When you did that, let's say you would

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1 make your own determination on impact if it was
2 acceptable.

3 MR. BAILEY: Right.

4 JUDGE JACKSON: Would it matter to you in
5 particular what the NRC had decided the level of
6 impact was at a preliminary stage as we might be
7 looking at in this early site permit where it hasn't
8 really been defined in detail and so on or would you
9 do it independently?

10 MR. BAILEY: We'd probably make our own
11 independent call on that.

12 JUDGE JACKSON: Okay.

13 JUDGE BOLLWERK: I mean, the record here
14 reflects that the NRC, given the information that was
15 in front of it, said that basically they thought the
16 cumulative dredging impacts would be moderate. I
17 don't think there's any question about that. And the
18 question will be then, if Southern came in and applied
19 for a permit with you, what, if anything, would you do
20 with that finding given what it was based on?

21 MS. BERNSTEIN: I couldn't speculate.

22 JUDGE BOLLWERK: Okay, I don't want you to
23 do that.

24 JUDGE JACKSON: But you're saying you
25 would, in essence, redo it at that time when it was

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1 defined and you had done whatever you need to do so
2 you knew exactly what the scope of the project would
3 be, you would then do a determination on the impact
4 yourself, independent of anything that is done here.

5 MS. BERNSTEIN: The scope of review would
6 be different if the Planning Division was initiating a
7 study for the authorized dredging project.

8 JUDGE JACKSON: Right.

9 MS. BERNSTEIN: It would be limited to
10 that only.

11 JUDGE JACKSON: Yeah, that's why I'm
12 saying, I think we were discussing what would happen
13 if Southern went in and applied for a permit. I'm
14 saying in the more likely situation where they would
15 come in and say, "Under your statutory responsibility
16 would your agency please do this", and you agreed that
17 it had merit and you wanted to go through your whole
18 process then of lining it up against other projects,
19 requesting funding and if it got funded and Congress
20 said, "This is good, here's the money", then you would
21 do your own independent Environmental Assessment
22 according to your own regulations and make a
23 determination.

24 MR. BAILEY: Yes.

25 JUDGE BOLLWERK: Except as I understood

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1 it, that would be done at an early stage where you're
2 actually putting together the plan, right? Am I -- I
3 don't want to --

4 MR. MACIEJEWSKI: Well, we don't have
5 funds to do the planning to do the project.

6 JUDGE BOLLWERK: You're right, okay, got
7 it. Follow the money, that's always a -- okay. Do
8 you have any --

9 JUDGE JACKSON: Well, I think I understand
10 that. And then maybe you could follow up on Judge
11 Bollwerk's question, let's say that this early site
12 permit, hypothetically, would be -- would have been
13 granted and that the NRC staff had done a
14 determination and said the impact of this could be
15 moderate, I think Judge Bollwerk said how would you
16 use that or would you or would you just independently
17 then look at the project and make your own decision?

18 MR. BAILEY: We'd make our independent
19 decision.

20 JUDGE JACKSON: Thank you.

21 JUDGE BOLLWERK: Let's -- let's see, how
22 long have we been at this? Do we need to take a break
23 for a second or do you think we're in good shape?
24 Keep going? Let me just check, anybody need a break
25 at this point? We can certainly take 10 minutes or we

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1 can continue on. Go on, all right. All right, let's
2 continue on then.

3 Let's step off the process for a second
4 and maybe talk a little bit about the impact of water
5 flow control. We've heard some testimony today that
6 there have been instances in the past that at least
7 one where there was a fairly large flow, was it 10,000
8 cfs?

9 JUDGE TRIKOUROS: Ten thousand cfs, that's
10 right.

11 JUDGE BOLLWERK: That allowed some
12 components to be barged that didn't require any
13 dredging. It was on the Savannah River. And I'm
14 trying to recollect. Was that --

15 JUDGE TRIKOUROS: It was Chem Nuclear
16 shipment of contaminated vessels, I guess it was a
17 couple of years ago, I'm not sure and to Barnwell.

18 MR. SIMPSON: Yes, sir.

19 JUDGE TRIKOUROS: And it required 10,000
20 cubic feet per second but it was able to be
21 accomplished without any dredging or any problems.

22 MR. SIMPSON: Yes, sir. At that time, we
23 were in moderate flow, less than 10,000 cfs condition,
24 not in a drought like where we are now, but we had
25 come out of the '98 to '03 drought and so we were in

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1 between droughts. But typically we would water up the
2 river, have to go to 10,000 cfs. That's kind of what
3 they requested, not based on their barge but based on
4 the tug draft. Okay. We had to water up the river
5 about a week in advance because it takes awhile to
6 fill the valley storage or the river storage with the
7 water and to get it down is about a nine-day travel
8 time when you're at low flow if you get it from
9 Thurmond down to the harbor.

10 Okay, you have to keep it watered up while
11 they transport their barge up, off-load it, turn it
12 around and ship it back.

13 JUDGE TRIKOUROS: That's about at two-week
14 period something like that?

15 MR. SIMPSON: Roughly.

16 JUDGE JACKSON: How often has that
17 happened?

18 MR. SIMPSON: Probably three or four times
19 in the last 20 years.

20 JUDGE JACKSON: And when was the last
21 time?

22 MR. SIMPSON: That's --

23 JUDGE JACKSON: That was this one.

24 MR. SIMPSON: That was a roughly
25 equivalent payload. It was a 700-ton payload is what

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1 they were referring to and a 200 by 40-foot barge
2 drafted -- the barge drafted roughly five and a half
3 feet. There have been instances where we've had more
4 water in the river and they've had opposite problems.

5 There is a bridge structure in the way that they had
6 to actually draft their barges, fill them with water
7 to get the barge low enough to go under the bridge,
8 but it was similar components that were going up to
9 Barnwell to be disposed of here, reactor pressure
10 vessels.

11 JUDGE TRIKOUROS: When you release water,
12 I assume you have very specific storage requirements.

13 You won't release below a certain elevation. Is that
14 the way it works?

15 MR. SIMPSON: We have what's called a
16 Drought Contingency Plan and any time we're in that
17 Drought Contingency Plan, we will not be making
18 releases for barge shipments. For the most part in
19 the last 20 years, all navigation has been incidental
20 to other operations, just our normal operation. So in
21 times of flood control that's when they would make
22 their shipments, when we had ample water to provide
23 them with -- there have been instances where we knew
24 something was coming up and we actually stored some
25 water in the flood pools for them.

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1 JUDGE JACKSON: Let me clarify. On this
2 shipment that you spoke about, the shipment to
3 Barnwell that involved the 10,000 cfs, you did not
4 release that flow or create that flow for the purpose
5 of that shipment.

6 MR. SIMPSON: We did.

7 JUDGE JACKSON: All right, because I
8 thought you just said that it was because you were not
9 in drought contingency at that time.

10 MR. SIMPSON: Right. There are other
11 instances where we've had ample water and we hadn't
12 had to do anything out of the ordinary. In that
13 instance, we put water in the flood control pool to
14 allow us to release for that period of time without
15 getting down out of the flood control pool.

16 JUDGE JACKSON: Gotcha, thanks.

17 JUDGE TRIKOUROS: This flood control pool,
18 is that located near Thurmond Dam or --

19 MR. SIMPSON: Each of our projects has a
20 separate authorized pools. One's called flood
21 control, that's the top portion. It's usually -- in
22 our case, it's top five feet because between 330 and
23 335 elevation at Harwell it's 660 and 665. That water
24 is water that is -- or space that we like to keep
25 available for managing floods. When you have a high

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1 storm event, high inflow event, we store water up in
2 that zone and release it at a non-damaging rate rather
3 than just passing the storm on through.

4 JUDGE TRIKOUROS: Do you keep -- is there
5 some requirement that you have to do soundings of the
6 channel at some frequent intervals or infrequent
7 intervals?

8 MR. SIMPSON: No, sir, not that I know of.

9 MR. MACIEJEWSKI: We tried to do a -- like
10 a line of soundings. I think we did one in '07. We
11 may do another one next year but it's only really just
12 sort of a general guide. It's not really as tightly
13 controlled as regular hydro-surveys.

14 JUDGE JACKSON: If you started to receive
15 -- let's say this area started to receive normal
16 average precipitation year after year. How many years
17 would it take to get yourself out of drought level
18 status?

19 MR. SIMPSON: Well, we've come out of
20 drought from previous droughts, the '98 to '03 drought
21 came out in about two to three months. Okay, usually
22 it comes out pretty hard. We kind of transition
23 almost from a drought to a flood, okay, and we're full
24 in that amount of time. We've been working on
25 refilling our lakes for about three and a half years

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1 now.

2 JUDGE JACKSON: Ergo the expression, "When
3 it rains it pours".

4 MR. SIMPSON: That's right, that's right.
5 But there's no telling when this drought will be
6 over.

7 JUDGE JACKSON: Okay, but it isn't
8 something where if it were normal or it wouldn't take
9 you 25 years to --

10 MR. SIMPSON: The weather service will not
11 comment on whether or not this is a climate change.

12 JUDGE JACKSON: Yeah, no, I didn't mean
13 that. I just meant if you start -- the thing is
14 returned to normal, it wouldn't be that long for you
15 to recover.

16 MR. SIMPSON: That is correct. That is
17 correct.

18 JUDGE JACKSON: That was the question.

19 JUDGE TRIKOUROS: So does every barge have
20 to file a plan with you? I mean, do they have to get
21 approval before they can proceed up the river?

22 MR. SIMPSON: They coordinate it with us
23 because of our need to make a release for them it may
24 be necessary or it may not be necessary, but usually
25 they'll coordinate it regardless and it's not just

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1 with us, it's with the Coast Guard.

2 JUDGE TRIKOUROS: Is that an option or is
3 that just -- do you require that?

4 MR. SIMPSON: Probably not. I think I
5 heard earlier that some of the pilots have taken
6 barges up river and we never knew about it.

7 MR. MACIEJEWSKI: We have no navigational
8 control in that sense.

9 JUDGE JACKSON: If you were out of the
10 Drought Contingency Plan, if you were out of the
11 drought categories, what kinds of conditions would you
12 need in order to grant a request to someone like
13 Southern if they -- if they then wanted to barge in
14 some materials similar to what you did with Barnwell?

15 MR. SIMPSON: Just adequate flow to get
16 their barges up there. I mean, in the past they would
17 send a pilot up ahead of time and he would make a
18 decision on how much flow he needed to get the barge
19 up there because it's his tug, his push.

20 JUDGE JACKSON: Okay, so you're saying if
21 you had the water in the system, and you were not in a
22 drought control situation, then you would be inclined
23 to meet a request like that if you could.

24 MR. SIMPSON: Yes, sir.

25 JUDGE JACKSON: Thank you.

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1 JUDGE TRIKOUROS: The problem I'm having
2 is trying to understand the relationship or let me
3 back off -- how in your mind do you understand how
4 much water needs to be released to allow a barge to
5 come up river if you don't know the depth of the
6 channel at any given time. In other words, would you
7 just release as much as you could each time?

8 MR. SIMPSON: We actually would release as
9 little as we could to provide that service. What the
10 pilot comes back with helps us a lot in determining
11 what he thinks the necessary depth should be with
12 respect to his condition. We do have some gauges on
13 the river at Clyo, Millhaven and Jackson. We can kind
14 of judge based on those gauges how much additional
15 stage he needs for his trip or depth.

16 JUDGE TRIKOUROS: So you have some
17 understanding of what the navigation channel situation
18 is at any given time.

19 MR. SIMPSON: Just from what he tells us.

20 JUDGE TRIKOUROS: Would he normally do a
21 sounding?

22 MR. SIMPSON: In the case of the Duratek,
23 I believe that's Chem-Nuclear, the same folks, they
24 had the USGS do a rough survey prior to their
25 transport.

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1 JUDGE BOLLWERK: I think they have an
2 interest in not getting stuck, so they do a good job,
3 I would suspect, I mean.

4 JUDGE TRIKOUROS: Right, and you have an
5 interest in not releasing any more water than you have
6 to release.

7 MR. SIMPSON: Correct.

8 JUDGE TRIKOUROS: But it's not within your
9 charter to ascertain the status of the navigation
10 channel.

11 MR. SIMPSON: Not in mine.

12 JUDGE TRIKOUROS: In any given year let's
13 say.

14 MR. SIMPSON: Correct.

15 JUDGE BOLLWERK: And again, whether it's a
16 governmental entity or a private entity that asks you,
17 you will consider them equally in terms of if you have
18 the water and the --

19 MR. SIMPSON: I would say, yes, sir.

20 JUDGE BOLLWERK: And we heard, I guess,
21 testimony today there may be as many as 30 of these
22 trips that may be necessary; does that --

23 MR. SIMPSON: Cause a problem?

24 JUDGE BOLLWERK: -- cause you any concern
25 one way or the other? Anything you want to comment

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1 on?

2 MR. SIMPSON: That would be a concern,
3 especially if we were not in a wet situation because
4 when we use up 10,000 cfs over a couple of weeks,
5 we've probably drafted the pools two to three feet.

6 JUDGE TRIKOUROS: Are there any
7 environmental impacts associated with water release?

8 MR. SIMPSON: Sure.

9 JUDGE TRIKOUROS: Just the big picture,
10 what are they?

11 MR. SIMPSON: We have concerns about the
12 way we make the release, the time that we make the
13 release. If it's a spawning season or that time of
14 year. The water is coming off of the lakes at roughly
15 30 meters depth so it's rather cold. So it kind of
16 shocks a lot of fish into not spawning in the river.
17 Sturgeon will turn around and leave.

18 The Fish and Wildlife folks typically want
19 us to follow kind of a natural hydrograph in the way
20 we raise and then follow up the release. They don't
21 want us just to shut off the river and let it come
22 back down to a low flow situation. It tends to strand
23 a lot of habitat out of the banks and up into the
24 pools that are adjacent to the banks.

25 Also, if we leave it watered up for too

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1 long, we might be damaging certain species of
2 vegetation or whatever.

3 JUDGE BOLLWERK: If anyone here knows,
4 when was the last time this channel was dredged again,
5 if you're --

6 MR. MACIEJEWSKI: I think it was '79.

7 JUDGE BOLLWERK: Okay. Would you all have
8 any reason to dredge the channel again other than the
9 request by someone to do it or someone who came in and
10 either sought a permit or had a project? I take it
11 there's nothing -- I mean, I don't know, I'm just
12 asking.

13 MR. MACIEJEWSKI: I can think of no reason
14 that we would dredge unless you have the two active
15 users.

16 JUDGE BOLLWERK: Okay.

17 JUDGE TRIKOUROS: Well, does that mean --
18 I mean, I'm just -- you said two active users. So if
19 Southern -- if Plant Vogtle were considered one active
20 user, does that mean that the channel would not get
21 dredged?

22 MR. MACIEJEWSKI: I can't say no, but the
23 Corps typically does not do maintenance for one user.
24 Again, in certain places, I don't know, but it's not
25 typical.

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1 JUDGE TRIKOUROS: I take it that when you
2 say two active users you mean in order to institute
3 frequent and, you know, normal dredging over time, you
4 know, in other words, reinstitute a normal dredging
5 program as opposed to maybe a one-time dredging.

6 MR. MACIEJEWSKI: Yes.

7 JUDGE BOLLWERK: Mr. Simpson, your
8 testimony in answer two, you indicated that you
9 maintain and implement a state of the art computer
10 program to manage the multipurpose projects of the
11 river. What's involved with all this? What exactly
12 are you doing?

13 MR. SIMPSON: We gather a lot of data from
14 the gauges on the river and kind of maintain status,
15 publish it to the public on the web page. We do
16 forecasts and when I say forecasts, we take the
17 Weather Service forecast with respect to the way they
18 see the river to recede, but we make decisions as to
19 how much to release based on their rainfall forecast
20 and what's coming into our projects.

21 JUDGE BOLLWERK: And what kind of
22 information would you have on there that would be
23 relevant to what we've been talking about there in
24 terms of the river flows and dredging and that sort of
25 thing?

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1 MR. SIMPSON: The status of the project
2 with respect to the drought plan or what the lake
3 levels are at the time, how much water is in the
4 river. Then look at all the gauges typically for our
5 system or USGS maintains so they're out there. We
6 kind of look -- a pilot can look at them and get an
7 idea from those what the conditions are with respect
8 to when he's been there.

9 JUDGE BOLLWERK: All right. Either of the
10 Board members have any other questions? Think about
11 it.

12 I'm going to suggest, we've been going for
13 quite awhile here. Why don't we go ahead and take a
14 10-minute break. It may well be -- you all if you
15 haven't already, generate some questions. We may have
16 a couple more questions for the panel when we get back
17 but you all should be thinking about what you're going
18 to -- what you want us to ask, if anything. All
19 right, let's take a 10-minute break. Thank you.

20 (Whereupon, a short recess was taken.)

21 JUDGE BOLLWERK: Let's go ahead and go
22 back on the record, please. The Board does have a
23 couple more clarification questions. Mr. Simpson, I
24 believe you talked about when the Corps releases
25 water, although again, in non-drought situation,

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1 obviously, to help navigation, and you mentioned the
2 environmental impacts that are involved, does the
3 Corps operate -- when it does that, does it operate
4 under some kind of a generic Environmental Impact
5 Statement or how is that in terms of the NEPA side of
6 the house?

7 MR. SIMPSON: In that case, they're more
8 of environmental concerns. In other words, it's still
9 -- it's nothing that's outside of our current
10 authorities. We're not exceeding channel capacity.
11 We're not releasing in any manner that we wouldn't
12 normally release in. We're just taking some
13 environmental suggestions into concern when we're
14 getting ready -- we're building the plan.

15 We're listening to our resource agency
16 friends and acting accordingly.

17 JUDGE BOLLWERK: So you've essentially
18 done whatever environmental analysis you needed
19 already and this just falls within the parameters of
20 that.

21 MR. SIMPSON: Yes, sir.

22 JUDGE BOLLWERK: All right, do you know,
23 is it covered under some kind of Environmental Impact
24 Statement that was done years ago or in a rule or how
25 does it -- or if you know?

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1 MR. SIMPSON: It probably was with respect
2 to the high end and the low end's probably covered
3 under an Environmental Impact or EA associated with
4 our drought plan.

5 JUDGE BOLLWERK: Okay, all right. I think
6 we also wanted to get -- I think there was a little
7 bit of confusion about the process still and we want
8 to make sure that's clear to us. In an instance when
9 a private entity like Southern would want to come into
10 a river like the Savannah which also has -- you
11 already have authorization to dredge but no
12 appropriation, they're a non-federal entity, so they
13 can't be involved in a planning process, which is one
14 of the things you need, but there still is an
15 authorization for the Corps to do dredging, just no
16 appropriation.

17 So in an instance like that, how would the
18 process again, work in terms of any decisions the
19 Corps might make to dredge or not to dredge?

20 MR. BAILEY: Let me try.

21 JUDGE BOLLWERK: Okay.

22 MR. BAILEY: For an authorized -- existing
23 authorized project --

24 JUDGE BOLLWERK: Right, which we have here
25 because we've got the authorization from the statute.

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1 MR. BAILEY: -- right, then it's a
2 question of having the money to do something.

3 JUDGE BOLLWERK: Okay.

4 MR. BAILEY: The Corps could initiate a
5 budget request and send it up through the process to
6 ask Congress to fund it.

7 JUDGE BOLLWERK: To fund a study.

8 MR. BAILEY: A maintenance -- just
9 maintenance of an authorized project.

10 JUDGE BOLLWERK: Okay, now, does that
11 involved a study first or is it just maintenance of --

12 MR. BAILEY: No.

13 JUDGE BOLLWERK: You say, "We have this
14 authorization. We need to maintain it, give us some
15 money."

16 MR. BAILEY: Unfortunately, it depends.

17 JUDGE BOLLWERK: Okay, all right.

18 MR. BAILEY: For a project that has not
19 been maintained in awhile, then we'll have to go back
20 and look and see do we have all the environmental
21 approvals that we would need to maintain it again. So
22 that may be a separate action that we would have to do
23 independent of having the money to actually do the
24 work.

25 JUDGE BOLLWERK: Okay, so it might take

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1 another EA or an EIS depending on how you assess it?

2 MR. BAILEY: Yes.

3 JUDGE BOLLWERK: What is the status of the
4 river? What's transpired since the time it was last
5 maintained? You'd have to look at all that and decide
6 did it fall within the parameters of the last
7 Environmental Assessment you did or do you need to do
8 something different?

9 MR. BAILEY: Yes.

10 JUDGE BOLLWERK: Okay, and so in doing
11 that, you would have that -- you look at that
12 environmental process, which would be over here and
13 you'd also be asking Congress for the money to
14 actually perform the maintenance.

15 MR. BAILEY: Yes.

16 JUDGE BOLLWERK: But you don't have to
17 have -- do you have to ask Congress for money to do
18 the study to decide whether you're within the
19 environmental envelope or not? Is there two money
20 processes here or one? We're following the money.

21 MR. BAILEY: We would have to have some
22 money --

23 JUDGE BOLLWERK: Right.

24 MR. BAILEY: -- to be able to even look at
25 it at all.

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1 JUDGE BOLLWERK: Okay.

2 MR. BAILEY: It depends, again, on how
3 long it would have been, how much effort is required.

4 If it was just someone, you know, a day's worth of
5 looking through, you know, files that are readily
6 available, that's one thing. If it was something
7 that's going to take another field study, then --

8 JUDGE BOLLWERK: Another FTE something,
9 right.

10 MR. BAILEY: -- then that would be
11 something that we would have to have a separate
12 appropriation just for the study.

13 JUDGE BOLLWERK: Right. Basically, if you
14 can't cover it under what you have now, and the
15 Federal Government always has some little bit here and
16 there, then you have to go back and get the --

17 MR. MACIEJEWSKI: There are provisions for
18 moving funds, like the old dam, from one project to
19 another, but it's done at a fairly high level and not
20 done frequently. The other thing that Bill didn't
21 mention that in an older project, we'd have to go back
22 and look at real estate actions, too, if any were
23 needed. That could be --

24 JUDGE BOLLWERK: Look at what? I'm sorry?

25 MR. MACIEJEWSKI: Real estate actions for

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1 -- we need containment areas or access for any of the
2 plant as such, if the government was to do it. That
3 might be quite time intensive.

4 JUDGE BOLLWERK: In terms of disposal
5 sites?

6 MR. MACIEJEWSKI: Disposal sites, access
7 sites, anything to do with real estate.

8 JUDGE BOLLWERK: Okay. When you say
9 access sites, you mean, you have to have some way to
10 get on to the river to do the work, right. And does
11 that involve having to rent access, you know, so we
12 can have a right of way?

13 MR. MACIEJEWSKI: I would imagine it would
14 be right of ways yes, whatever we found we needed.

15 JUDGE BOLLWERK: Right, you've got to get
16 the dredge in the river somehow.

17 MR. MACIEJEWSKI: Well, the dredge would
18 come up through the river, but it's -- the people that
19 work on the river drive there. They park cars and
20 supplies, you know, fuel deliveries and such.

21 JUDGE BOLLWERK: Right, plus you have to
22 get whatever the sediments you're taking out up onto
23 the bank, wherever you're going to put it, the same
24 idea, okay.

25 JUDGE JACKSON: Does the Corps do its own

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1 dredging activities or do you hire contractors?

2 MR. MACIEJEWSKI: The Savannah District
3 hires all contract dredging. There are only several
4 Corps of Engineers dredges left in the United States,
5 none of them in this region.

6 JUDGE JACKSON: Well, the Corps does an
7 enormous amount of dredging, I assume, in this
8 country, if you'll look on a national level. So if I
9 take advantage of kind of your being here, did you see
10 the report prepared by Southern that did the survey
11 and estimated the level of dredging that was estimated
12 to bring these barges up the Vogtle site?

13 MR. MACIEJEWSKI: We have not been --
14 again, we have not been funded to analyze that.

15 JUDGE JACKSON: I didn't -- excuse me, I
16 just wondered if you were aware of it and had seen it.

17 MR. MACIEJEWSKI: We're aware of it.

18 JUDGE JACKSON: It estimates that there
19 would be I think it's 36,000 cubic yards of material
20 may be involved in this. My question was, would that
21 be -- would that be a big project, a kind of a small
22 project if you were to look at all the dredging
23 projects that go on in this country? Is this -- I'm
24 just trying to get a feel for it. Is this a big deal?
25 Is this kind of a small deal?

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1 MR. MACIEJEWSKI: Well, again, speaking
2 hypothetically, this would be in the range of --
3 depending on the size of the dredge, probably small to
4 medium project. If you had a very small dredge, it
5 would be big for that, but a medium sized dredge would
6 be a probably small project because dredges come in
7 various sizes and production rates.

8 JUDGE JACKSON: Okay, do you have any idea
9 how many cubic yards the Corps might dredge in an
10 average year?

11 MR. MACIEJEWSKI: It's in millions if not
12 multi-millions. Savannah Harbor itself is -- I think
13 we dredged three and a half million yards from the
14 harbor and about a million from the entrance channel
15 these last contracts just in the harbor itself and in
16 the entrance channel.

17 JUDGE JACKSON: All right, that gives me a
18 feel for it, thank you.

19 JUDGE BOLLWERK: Judge Trikouros, did you
20 have any other questions? No? Anything else, Judge
21 Jackson? No? All right, anything from the parties
22 then? You were being more efficient than we were.
23 The staff has one as well, all right. Can we take a
24 second and go back and look at these? One of these is
25 fairly extensive, so let us take about -- we'll commit

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1 to doing certainly five minutes or less and take a
2 quick look at these so we can talk about which ones we
3 need to ask. We'll be right back, thank you. Take a
4 brief recess.

5 (Whereupon, a short recess was taken.)

6 JUDGE BOLLWERK: All right, if we could
7 have everybody come back to order, we're going to go
8 back on the record, please. All right, we have a
9 couple of questions, some in the nature of
10 clarification. Others have raised something a little
11 different. I think this is in the nature of
12 clarification. Mr. Bailey and Mr. Maciejewski, did I
13 pronounce that correctly? Close enough?

14 MR. MACIEJEWSKI: Close enough.

15 JUDGE BOLLWERK: Thank you. I'm bad with
16 names. Could you please describe the difference
17 between an authorized project where you're doing
18 maintenance dredging and work on a new federal
19 dredging project? And I think we talked about this a
20 little bit before but could you just give us one more
21 -- whoever wants to try it? The difference between an
22 authorized project doing maintenance dredging and work
23 on a new federal dredging project.

24 MR. BAILEY: For a new federal dredging
25 project, we would have to go to Congress for several

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1 things but I guess an important one is for the
2 authority to construct the project, to dredge the
3 project, so the authority to dredge it and the money
4 to dredge it, that would be for a new project.

5 JUDGE BOLLWERK: Okay, two money aspects
6 to it. You've got to do the study. You have to get
7 the money to do the project.

8 MR. BAILEY: Yeah, and then once they have
9 authorized it, we only go back to them for money and
10 that's just through the normal agency budget process.

11 JUDGE BOLLWERK: Now I think I've confused
12 myself, one more time. I should have been quiet. I'm
13 sorry. I apologize.

14 JUDGE TRIKOUROS: Once it's authorized,
15 then it's only an appropriations request.

16 JUDGE BOLLWERK: Got it, okay. And the
17 authorization goes with the project plan. In other
18 words, the project plan goes up the process. It gets
19 authorized and then the appropriation. Okay. That's
20 a new federal project. Okay, and then in terms of
21 maintenance dredging.

22 MR. BAILEY: Maintenance dredging would be
23 just an appropriation issue where we would ask for the
24 money to maintain that certain project.

25 JUDGE BOLLWERK: Because you already have

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1 the authorization.

2 MR. BAILEY: Yes.

3 JUDGE BOLLWERK: All right.

4 MS. BERNSTEIN: Unless it was a change in
5 depth or width or something of that nature, which
6 would require a new study and a new authority.

7 JUDGE BOLLWERK: Okay, and if it required
8 a new study and a new authority, do you have to go
9 back and get the money for the study first?

10 MS. BERNSTEIN: Yes.

11 JUDGE BOLLWERK: Yes.

12 JUDGE TRIKOUROS: And I guess I would add
13 to that, then, that if there are two continuous users
14 of the navigation channel, you would be routinely
15 going back for appropriations yearly or whatever you
16 do.

17 MR. BAILEY: Yes.

18 JUDGE BOLLWERK: All right, anything else
19 we need to do to clarify that? Okay, all right. Has
20 the Corps made any funding requests for dredging the
21 Savannah River since 1979?

22 MR. MACIEJEWSKI: I believe we have. I
23 can't talk specifically, but I believe it's there and
24 at a very -- the priority would be very low.

25 JUDGE BOLLWERK: So you put requests into

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1 the Congress and you haven't gotten any money; is that
2 what you're --

3 MR. MACIEJEWSKI: Again, I'd go back to
4 the process. We have -- we would put it in like at
5 the local level and then we would compete but it would
6 probably be there but pretty much dropped out at the
7 local level and much of that is regional because it
8 had been out-competed.

9 JUDGE BOLLWERK: Okay, and so -- but you
10 certainly haven't gotten any appropriated money to do
11 anything.

12 MR. MACIEJEWSKI: Not dredging, no.

13 JUDGE BOLLWERK: But you have made -- at
14 least within the local level, made requests that have
15 not gone --

16 MR. MACIEJEWSKI: Well, it's -- let me
17 back up a second then. The Savannah River below
18 Augusta Project itself includes the New Savannah Bluff
19 Lock and Dam. So there are funds coming down
20 specifically for work -- the work done on that dam.
21 So it's a line that is active. I don't want to
22 mislead you there.

23 JUDGE BOLLWERK: But in terms of the type
24 of maintenance dredging we're talking about here,
25 there have been local funding requests made by the

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1 local Corps office but they have not -- they've sort
2 of fallen out in terms of the --

3 MR. MACIEJEWSKI: I wouldn't even say
4 requests. It may be just a line item, lowest priority
5 so it wouldn't have gone anywhere.

6 JUDGE BOLLWERK: All right. Is the Corps
7 considering seeking funds for dredging that navigation
8 channel in the 2011, FY 2011 budget that's currently
9 being prepared?

10 MR. MACIEJEWSKI: I think we can't comment
11 on that.

12 MR. BAILEY: We can't say what's in the --

13 JUDGE BOLLWERK: All right. Has the Corps
14 sought stimulus money to fund dredging the navigation
15 channel?

16 MR. MACIEJEWSKI: Can't comment on that.

17 JUDGE BOLLWERK: All right. Would
18 dredging such as that described by SNC be considered
19 routine operation and maintenance of the channel?

20 MR. BAILEY: I think because we haven't
21 done -- because we haven't maintained for close to 30
22 years it would not be routine.

23 JUDGE BOLLWERK: But it would be
24 maintenance.

25 MR. BAILEY: It would be maintenance.

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1 JUDGE BOLLWERK: All right. Prior to the
2 2008 Memorandum of Understanding that's been revised,
3 I believe there was a previous MOU that was in place
4 relative to cooperation between the Corps and the NRC.

5 Did you have any contact with the NRC staff regarding
6 Vogtle under that prior Memorandum of Understanding?

7 MS. BERNSTEIN: No, I didn't.

8 JUDGE BOLLWERK: All right. And your
9 first contact with the NRC staff on this project came
10 approximately when?

11 MS. BERNSTEIN: I think it's in the
12 testimony but I want to say it's that same time frame
13 that Tom referred to about August of '08.

14 JUDGE BOLLWERK: All right, and the -- and
15 the Memorandum of Understanding went in the Federal
16 Register in September so it was fairly contemporaneous
17 with that.

18 MS. BERNSTEIN: I believe so but they came
19 in several times for informal meetings with navigation
20 and regulatory.

21 JUDGE BOLLWERK: Before August of 2008?

22 MS. BERNSTEIN: I believe so. I'd have to
23 check -- I'd have to look at my calendar. I can't --

24 MR. BAILEY: Is your question about NRC?

25 JUDGE BOLLWERK: Yes, NRC.

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1 MS. BERNSTEIN: No, this would have been
2 Southern Company.

3 JUDGE BOLLWERK: Oh, I'm sorry, it was
4 NRC, yes. So NRC was August of 2008, you said I think
5 or is that --

6 MS. BERNSTEIN: I don't believe I had any
7 direct contact from NRC.

8 JUDGE BOLLWERK: Okay, all right, I'm glad
9 you clarified that. Thank you. All right, I think
10 that's all the questions that the Board has unless
11 either Board members have anything further. All
12 right, did those generate anything from the parties?
13 No? All right, at this point then, it's going on --
14 it's 5:30 and we have two panels left. I don't think
15 we're going to get two of them done this evening. So
16 I don't know that it's going to be a useful exercise
17 to try to press ahead. So probably the best thing to
18 do would be to adjourn at this point and come back
19 tomorrow morning.

20 We can go ahead and start at 8:30 and
21 hopefully be down well within a half a day. So I
22 think we're a little bit ahead of schedule, as we were
23 looking at four days. With respect to this particular
24 panel, on behalf of the Board, I want to thank all of
25 you for coming before us and providing the

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1 information. You've been very forthright with us and
2 we appreciate that. And I believe we can -- was there
3 a plan that they should stay here or do you want us to
4 dismiss them?

5 MR. MOULDING: I just wanted to know if it
6 is appropriate to release them or whether you believe
7 it's necessary to recall any of the Corps witnesses
8 tomorrow.

9 JUDGE BOLLWERK: I -- at this point, I
10 don't see a reason, do you?

11 JUDGE TRIKOUROS: I don't.

12 JUDGE BOLLWERK: I don't think so. I'd hate
13 to have them stay around here for -- they're welcome
14 to stick around if they want to and watch, but why
15 don't we go ahead and release them and that way they -
16 - I think we've gotten the information we needed.

17 MR. MOULDING: Okay, thank you.

18 JUDGE BOLLWERK: Unless there's some
19 reason the staff believes they need to be here for
20 some other reason, that's up to you all.

21 MR. MOULDING: We'll confirm, but we'll
22 take it under advisement that you don't believe it's
23 necessary to recall them.

24 JUDGE BOLLWERK: That will work. But,
25 again, thank you very much. Unless for some reason

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1 the staff has a reason for you to stay here, as far as
2 we're concerned, you've provided a great service to
3 the Board and we appreciate it. Thank you very much.

4 All right, then, why don't we go ahead and
5 plan on starting tomorrow morning at 8:30 and
6 hopefully, we'll have about a half a day. I think
7 with two panels, that should be very manageable and
8 achievable. So we'll start in the morning with the
9 staff panel and then move onto the joint intervener
10 panel and that will, unless there's something else I'm
11 not aware of, I think that would conclude this
12 contested part of the hearing.

13 Again, I should mention, next week we will
14 be -- if there's anyone here -- probably everybody
15 here knows about this but mandatory hearing next week
16 in Waynesboro, starting on Monday morning at 8:30 and
17 we will also be doing limited appearances, five -- I'm
18 sorry, 3:00 to 5:00 on Sunday afternoon and 7:00 to
19 9:00 on Monday night. And we do have some folks
20 signed up for both sessions, not a lot yet, but if you
21 know someone that wants to sign up, we definitely
22 would encourage them to do so.

23 All right, thank you, everyone. Not too
24 long a day today, but hopefully we'll get done
25 tomorrow. Thank you.

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(Whereupon, at 5:32 p.m., the matter recessed,
to reconvene at 8:30 a.m. on March 19, 2009.)

CERTIFICATE

This is to certify that the attached proceedings
before the United States Nuclear Regulatory Commission
in the matter of: Southern Nuclear Operating Co

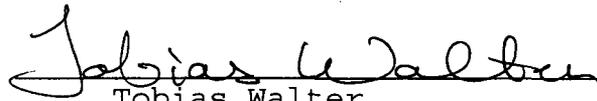
Name of Proceeding: Early Site Permit

Docket Number: 52-011-ESP;

ASLB No. 07-850-01-ESP-01

Location: Augusta, Georgia

were held as herein appears, and that this is the
original transcript thereof for the file of the United
States Nuclear Regulatory Commission taken by me and,
thereafter reduced to typewriting by me or under the
direction of the court reporting company, and that the
transcript is a true and accurate record of the
foregoing proceedings.



Tobias Walter
Official Reporter
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