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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

September 6, 2006

The contents of this transcript of the proceeding of the United States Nuclear Regulatory Commission Advisory Committee on Reactor Safeguards, taken on September 6, 2006, as reported herein, is a record of the discussions recorded at the meeting held on the above date.

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

1 UNITED STATES OF AMERICA

2 NUCLEAR REGULATORY COMMISSION

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4 ADVISORY COMMITTEE ON REACTOR SAFEGUARDS (ACRS)

5 SUB-COMMITTEE ON EARLY SITE PERMITS

6 + + + + +

7 WEDNESDAY,

8 SEPTEMBER 6, 2006

9 + + + + +

10 The meeting was convened in Room T-2B3 of

11 Two White Flint North, 11545 Rockville Pike,

12 Rockville, Maryland, at 1:00 p.m., Dr. Dana V. Powers,

13 Chairman, presiding.

14 MEMBERS PRESENT:

15	DANA V. POWERS	Chairman
16	GRAHAM B. WALLIS	Vice-Chairman
17	J. SAM ARMIJO	ACRS Member
18	THOMAS S. KRESS	ACRS Member
19	MARIO V. BONACA	ACRS Member
20	OTTO L. MAYNARD	ACRS Member
21	WILLIAM J. SHACK	ACRS Member
22	JOHN D. SIEBER	ACRS Member

23

24

25

1 NRC STAFF PRESENT:

2 DAVID FISCHER ACRS Staff

3 CHRISTIAN ARAGUAS

4 CLIFF MUNSON

5 TONY HSAI

6 DAN BARSS

7 PAUL PRESCOTT

8 BRAD HARVEY

9 NAN GILLES

10 BOB WEISMAN

11

12 ALSO PRESENT:

13 MARVIN SMITH

14 EDDIE GRANT

15 GUY CESARE

16 DAYNA HERRICK

17 GEORGE ZINKE

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1 A-G-E-N-D-A

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

2 1:02 p.m.

3 CHAIRMAN POWERS: The meeting will now
4 come to order. This is a meeting of the Advisory
5 Committee on Reactor Safeguards, Subcommittee on Early
6 Site Permits. I'm Dana Powers, chairman of the
7 subcommittee. Members in attendance are Sam O'Neill,
8 I guess Mr. Bonaca is not quite with us yet, Otto
9 Maynard, Bill Shack, Jack Sieber, Graham Wallis.

10 The purpose of this meeting is to discuss
11 and develop lessons learned as a result of the North
12 Anna, Grand Gulf, Clinton early site permit reviews.
13 The subcommittee will hear presentations by and hold
14 discussions with representatives of the NRC staff,
15 Dominion Nuclear North Anna, System Energy Resources,
16 Exelon Generation Company, Southern Nuclear Operating
17 Company, and other interested persons regarding this
18 matter. The subcommittee will gather information,
19 analyze relevant issues and facts, and formulate
20 proposed positions and actions as appropriate for
21 deliberation by the full committee to the best we can
22 over the impending jackhammering that is evidence that
23 we're working on our site, at least. Mr. David
24 Fischer is the designated federal official for this
25 meeting.

1 The rules for participation in today's
2 meeting have been announced as part of the notice of
3 this meeting previously published in the Federal
4 Register, August 15, 2006. Let me just comment, this
5 is a subcommittee meeting, and so it can be relatively
6 informal as far as participation, and in fact I
7 encourage discussion as the presentations go along,
8 both the subcommittee and the speaker, and with the
9 audience and the speaker. However, to do that kind of
10 informal discussion, you have to recognize a
11 transcript of the meeting is being kept, and will be
12 made available as stated in the Federal Register
13 notice, so you speakers, especially impromptu
14 speakers, should come to a microphone, they should
15 identify themselves, and speak with sufficient clarity
16 and volume so they can be readily heard. And so if
17 you want to make a comment, somehow get our attention,
18 and there are microphones here and there. And I
19 encourage that to happen because we can't have free-
20 flowing discussion in a full committee meeting, but we
21 can in a subcommittee meeting. And this is an
22 opportunity to have discussions to clarify and to
23 better understand what people are discussing if ever
24 there were one.
25 We've received no written comments or

1 requests for time to make oral statements from any
2 members of the public regarding today's meeting. That
3 doesn't preclude them from making comments in the
4 subcommittee meeting, so if you want to make a
5 comment, again, just get our attention, be recognized,
6 and arrive at a microphone.
7 Let me say that it is my perception that
8 on the part of both the licensees and the staff the
9 early site permit exercise we've been through was just
10 outstanding. Exceptional quality work on both
11 parties. And so in looking at lessons learned, it's
12 not because we identified any catastrophic flaw that
13 needs to be cauterized, we need to - we're simply
14 taking an opportunity to look if we can refine what
15 already appears to be a functional regulatory process,
16 one that was well exploited by the applicants, and
17 well executed by the NRC staff, in my perception. I
18 compliment everyone that, though the documentation was
19 voluminous, I found it very readable. And when I say
20 very readable, I'm even talking about the geology
21 sections which truthfully strain my vocabulary and
22 Webster's Dictionary to explore. So I myself am
23 relatively excited about what was done for the ESPS,
24 and this is again more refinement, and a chance to
25 brag on yourselves for a job well done on all parts.

1 Licensees' presentations to the subcommittee were
2 exceptional as were the staff presentations.
3 With those introductory comments I will
4 turn to the subcommittee and ask if any of the members
5 have comments they would like to make to open up the
6 presentations. And with that, I think we're in a
7 position to proceed ahead with the agenda. And Chris,
8 I think you're up.
9 MR. ARAGUAS: Okay. Good afternoon, my
10 name is Christian Araguas. I work in NRR, and I'm one
11 of the newer members to the early site permit team.
12 So forgive me if I don't have all the answers to your
13 questions, but I do have the technical staff here to
14 support a full discussion.
15 CHAIRMAN POWERS: There is no forgiveness
16 here. We are a merciless crowd.
17 (Laughter)
18 MR. ARAGUAS: Okay.
19 CHAIRMAN POWERS: And so you better hope
20 your staff can save you, otherwise.
21 MR. ARAGUAS: I'm hoping on it, sure.
22 CHAIRMAN POWERS: We'll see how your
23 relationships are. Let him squirm a little bit.
24 MR. ARAGUAS: Before we move on to lessons
25 learned, I just wanted to capture a comment regarding

1 the tone of what I plan to present today, and that is
2 that the staff is currently working on updating the
3 standard review plan. Those updates are due out March
4 2007. Along those lines we're also updating
5 regulatory guides to support the new reactor
6 licensing, what we see coming in the future for COLs
7 and for ESPS.
8 CHAIRMAN POWERS: Let me see, what you're
9 upgrading is the RSO2?
10 MR. ARAGUAS: No, we're going to update
11 the standard review plan, which is the guidance for
12 our COL applications.
13 CHAIRMAN POWERS: Yes.
14 MR. ARAGUAS: And within that guidance
15 we'll also have the guidance for what the reviewers
16 need for an early site permit as well as design cert.
17 Right now it doesn't contain any guidance for what is
18 required for an ESPECIALLY. That's though what RS-002
19 was attempting to capture.
20 CHAIRMAN POWERS: Right.
21 MR. ARAGUAS: But what the staff is
22 proposing to do is to capture everything into one
23 document, one review guidance document. And what will
24 happen to RS-002 is the information that's located in
25 Attachment 2, which is essentially all the criteria,

1 review criteria, will be taken out of RS-002, and will
2 be replaced with a matrix pointing to all the
3 applicable sections in the standard review plan that
4 our reviewers should be looking at.
5 There is a plan for the RS-002. What
6 we'll do is, aside from any guidance that we would
7 capture in the standard review plan, we would
8 incorporate certain things like what I plan to touch
9 on in a bit here, which would be definitions, or any
10 certain criteria that - general comments that would
11 help out that we would want to capture in the RS-002.
12 CHAIRMAN POWERS: Let me just point out
13 our executive director has shown his power and control
14 over the construction activities, so thank you John -
15 Then we put him right up with Chris, let him squirm a
16 little bit. Didn't do any good. Brag on him and look
17 what happens.
18 MR. ARAGUAS: Thank you, Dan. The first
19 lesson learned that we identified, and I did want to
20 stress that what I plan to talk about right now is
21 really just what the staff feels like it can improve
22 for future applications, for review of future
23 applications.
24 So, with that, first lesson learned that
25 we identified was to establish criteria for

1 identifying site characteristics and controlling plant
2 parameter values included in an ESP. During the
3 review of the North Anna, Clinton and Grand Gulf ESP
4 applications, there was some confusion regarding what
5 should be included in a permit. We didn't have a
6 clear picture as the end goal, what would go on that
7 permit. And to support that, to support the issuance
8 of the FSER, the staff drafted with the help of OGC,
9 drafted some guidance as far as criteria for what
10 would establish a site characteristic, and what would
11 establish a controlling PPE. These criteria were
12 presented at a May 5, 2005, NEI meeting as well as I
13 think here at the ACRS meeting. And the staff is
14 planning to incorporate these criteria in its updates
15 to the SRP as well as including these criteria in the
16 RS-002.
17 The next lesson learned that we had was
18 also establishing criteria for identifying permit
19 conditions and combined license action items in an
20 ESP.
21 CHAIRMAN POWERS: Let me just interject
22 and say I thought that this was one of the finer hours
23 of the staff, where they recognized that they were
24 just going hog wild on permit conditions and action
25 items and whatnot, and caught themselves up, and

1 rethought this whole issue, and came up with the
2 criteria. I give you guys big strokes for that, that
3 recognition, and then the subsequent definitions of
4 some pretty crisp criteria for what's a permit
5 condition, what's an action item.
6 MR. ARAGUAS: Right. I think early on we
7 recognized that that was certainly a need to get that
8 out before we issued the FSER. And as you mentioned,
9 once we had that criteria, we certainly scrubbed the
10 SERs to make sure that we did have a clear line as to
11 what fell under a permit condition and what fell under
12 -
13 CHAIRMAN POWERS: You might just go over
14 those conditions.
15 MR. ARAGUAS: I have those here if you
16 want me to read those to you.
17 CHAIRMAN POWERS: I think that would be
18 useful.
19 MR. ARAGUAS: Okay. What we have, or what
20 we propose to put in the standard review plan reads as
21 follows, and this is for permit condition. The
22 Commission's regulation in 10 C.F.R. § 52.24
23 authorizes the inclusion of limitations and conditions
24 in an ESP. The staff should recommend a permit
25 condition in only three circumstances. Number 1, the

1 staff's evaluation in the SER rests on an assumption
2 that is not currently supported, and which is
3 practical to support only after ESP issuance. An
4 example that we have here is subsurface conditions
5 discovered upon excavation for foundation
6 construction.
7 The second criteria we have a is a site
8 physical attribute is not acceptable for the design of
9 site safety - sorry, SSEs important to safety, such as
10 condition may call for action for remedy to remedy the
11 deficiency. For example, cracked or weathered rock
12 that is not acceptable for bearing foundational loads
13 is replaced or filled with lean concrete, or otherwise
14 treated so as to be acceptable. The attribute may be
15 deficient only with respect to the particular type of
16 reactor.
17 The third is the staff's evaluation
18 depends on a future act, for example, a state
19 regulatory approval may be called for. The permit
20 condition is not needed when an existing NRC
21 regulation requires a future regulatory review and
22 approval process to ensure an adequate safety during
23 design, construction or inspection activities for the
24 new plant.
25 CHAIRMAN POWERS: I think that codicil at

1 the end where it says this is criteria for what not a
2 permit condition is, is as important as criteria for
3 what are.
4 MR. ARAGUAS: Right.
5 CHAIRMAN POWERS: I think you guys did a
6 good job there.
7 MR. ARAGUAS: Do you want me to go through
8 what we have -
9 CHAIRMAN POWERS: Please.
10 MR. ARAGUAS: Okay. The combined license
11 action items identify certain matters that shall be
12 addressed in the final safety analysis board. And
13 that's the key distinction, is that it's just only
14 asking that they be addressed by an applicant who
15 submits an application referencing an ESP. These
16 items constitute information requirements, but do not
17 form the only acceptable set of information in the
18 FSER. An applicant may depart from or omit these
19 items, provided the departure or omission is
20 identified and justified in the FSER. In addition,
21 these items do not relieve an applicant from any
22 requirement in 10 C.F.R. Parts 50 and 52 that govern
23 the application. After issuance of a construction
24 permit or COL, these items are not requirements for
25 the licensee unless such items are restated in the

1 FSER.

2 Oh, and as I said, those criteria and

3 definitions will be incorporated into the SRP for

4 reviewers to make sure that they have a clear

5 understanding as to what falls where.

6 CHAIRMAN POWERS: And I certainly invite

7 the speakers to comment on these criteria as well

8 because I attach great significance to them, and I'd

9 like to make sure that everybody is happy with them.

10 MR. ARAGUAS: The third lesson learned, I

11 think this is more a combination of a comment that we

12 had and something that the staff is certainly

13 undertaking to support high-quality applications. The

14 first is a comment to future applicants, and that is

15 that the Commission is expecting that they'll

16 incorporate the lessons learned from these three ESPS

17 into their applications, whether that be going through

18 the RAIs from this process, the open items, how they

19 were resolved, and any other review issues that came

20 about. And that's obviously to incorporate

21 efficiencies for the later applications that may be

22 coming in.

23 The other is that with the staff

24 undergoing the SRP updates, the proposed Part 52

25 rulemaking, and the updates to the reg guides, we're

1 hoping that that provides sufficient guidance, both to
2 the reviewers and to the applicant, on what's required
3 for application and what we should be reviewing.
4 CHAIRMAN POWERS: I think there are a
5 couple of points come up in connection with this.
6 Certainly when we look at the license renewal process,
7 we found it took a long time for people to digest the
8 RAI - the request for additional information - into
9 subsequent applications. You know, I have no idea how
10 many times we had to debate whether pony pumps were in
11 the scope or not for the license renewal. And it's
12 relatively important in the ESP to learn from the
13 RAIs.
14 MR. ARAGUAS: Right.
15 CHAIRMAN POWERS: Well, I toss that out as
16 a point to bear in mind. It's worth emphasizing.
17 MR. ARAGUAS: Right, and I think that's
18 key, I mean, for future applications, like you said,
19 to look at those kinds of things, because you really
20 gain some efficiencies in recognizing what kind of
21 questions the staff plans to ask, or so that we can
22 anticipate, you know, putting them in a response.
23 CHAIRMAN POWERS: I mean, one of the
24 problems of the subcommittee is of course we don't see
25 the applications till that's all been done.

1 MR. ARAGUAS: Right.

2 CHAIRMAN POWERS: And whatnot. And so I
3 think they set a fairly high standard for future
4 applicants. But it is my perception a fairly high
5 standard.

6 MR. ARAGUAS: The fourth item that I had
7 on the list here was comprised of several different
8 areas of where the staff feel that we need to update
9 the review guidance in regards of the first-of-a-kind
10 review process that we underwent. The first that I
11 have listed here I've already discussed, which is the
12 criteria for identifying site characteristics,
13 controlling PROBLEMS, and COL action items, and permit
14 conditions. And I just put that on there to reiterate
15 the fact that this is something that is currently
16 going to update its review guidance in those areas.

17 The second issue falls under the
18 performance-based methodology for seismic hazards.
19 And this came out of the review of the Clinton ESP
20 application. The staff recognized that there was a
21 new performance-based methodology approach for
22 determining safe shutdown earthquake ground motion for
23 the site. And this was not consistent with the
24 staff's approved methodology in Regulatory Guide
25 1.165. The staff had not previously reviewed this

1 methodology and informed the applicant the choice to
2 use this method would result in a delay in the
3 completion of the staff's seismic review of the ESP
4 application. Exelon elected to continue to rely on
5 this new methodology, and on the 17th of February 2006
6 the staff issued its final safety evaluation report
7 where it documented that the performance-based
8 methodology implemented at the Clinton site was
9 acceptable.
10 So to avoid future delays in the upcoming
11 ESP and COL applications, the staff has decided to
12 write a regulatory guide to capture this new
13 performance-based methodology. And this is going to
14 be what we call right now Draft Regulatory Guide 1146.
15 CHAIRMAN POWERS: Is it a substantive
16 guide, or is it just endorse the standard?
17 MR. ARAGUAS: My understanding is it's a
18 substantive guide. And this is scheduled to be issued
19 March 30, 2007.
20 CHAIRMAN POWERS: Is there a draft?
21 MR. ARAGUAS: I think it should go out
22 final March 30, 2007, and if there's - I don't know
23 if, Cliff, you wanted to clarify on that?
24 MR. MUNSON: Over the din of noise -
25 CHAIRMAN POWERS: I know, John's failed

1 us. He seems to have only provoked them.

2 MR. MUNSON: This is Cliff Munson, I'm a

3 geophysicist with NRR. The only correction I would

4 like to make is the new regulatory guide is not

5 replacing Reg Guide 1.165, it's an alternative.

6 CHAIRMAN POWERS: It's supplemental.

7 MR. MUNSON: Yes, it's an alternative.

8 It'll cover much of the same material, but incorporate

9 the latest methodologies, including the performance-

10 based approach.

11 CHAIRMAN POWERS: The question, of course,

12 is there a draft available on that?

13 MR. MUNSON: Not yet. We're working on

14 that.

15 CHAIRMAN POWERS: I bring it up just

16 because I've decided I don't understand the new

17 methodology as well as I should, so I'm struggling to

18 understand it a little better.

19 MR. HSAI: Dr. Powers?

20 CHAIRMAN POWERS: Yes.

21 MR. HSAI: Hi. Tony Hsai from Research.

22 That draft regulatory guide is prepared to be sent out

23 - scheduled to be sent out for public comment in

24 October this year. It's called DG 1146.

25 CHAIRMAN POWERS: Okay. Thanks Tony.

1 MR. ARAGUAS: To support the staff's
2 guidance, we're also going to capture this in the SRP
3 updates as well.
4 The second item, or the third item I had
5 listed under where the staff feels it needs to update
6 its guidance is in regards to the major features of
7 the emergency plan. During the review of the previous
8 three ESP applications, several questions were raised
9 regarding the level of review being conducted under
10 the major features option for applicants that
11 reference an approved emergency plan for an existing
12 nuclear plant co-located to the ESP site.
13 Another question that was raised was
14 regarding the definition of major features that
15 industry felt there wasn't a clear definition in the
16 regulations regarding that major features. We also
17 received several comments regarding the level of
18 finality that an applicant can receive regarding the
19 major features route. In regards to the first issue,
20 the staff recognizes that the need for updating the
21 existing review guidance in NUREG-0654, Revision 1,
22 Supplement 2, and that's the guidance for the major
23 features option. Currently Supplement 2 calls for a
24 review of the description of the proposed emergency
25 plan for the major features option. This review

1 guidance in Supplement 2 we think should be revised to
2 provide additional guidance relating to the level of
3 review required under a description, as it's required
4 for the major features option. The caveat to that is
5 the staff feels that, even though we recognize that
6 this update is necessary, we haven't had any
7 commitments from industry to come in to submit an
8 application supporting the major features option. So
9 right now this has sort of fallen to the back burner
10 in terms of priority. There is a plan to update it,
11 but there isn't a schedule associated with when that
12 update will occur.
13 Regarding the definition of major
14 features, the staff feels that it's adequately defined
15 in NUREG-0654, Revision 1, Supplement 2, and that
16 reads that major features include the exact sizes of
17 the EPZs, and the planning standards and evaluation
18 criteria located in Section 5 of Supplement 2. To
19 further that, the proposed Part 52 will capture
20 language clearly defining what the major features of
21 emergency plans are. And to address the third issue
22 that we encountered, which was regarding the level of
23 finality that an applicant can receive with the major
24 features option, the staff is proposing to add
25 additional language to 10 C.F.R. § 52.18, which

1 specifies the review of major features of emergency
2 plans will be against 10 C.F.R. § 50.47, and Appendix
3 C to 10 C.F.R. § 50, which are the basic emergency
4 planning requirements that are directly associated
5 with the reasonable assurance determination. Which is
6 different from what's currently regulations, which
7 states that the staff will determine if they're
8 acceptable.
9 CHAIRMAN POWERS: You're not taking - I
10 mean, all of the early site permits that we have gone
11 through now have been for sites that are adjacent to
12 an existing power plant which has an emergency
13 planning plan in place that's reviewed and tested. So
14 it seems to me it'll be relatively unlikely that there
15 would be a major flaw in anything planned for the new
16 site. I mean, a high probability of having a good
17 emergency plan if a plant were built on the new site.
18 So you don't see making any distinction between that
19 kind of site and, say, a greenfield site where there's
20 nothing else around it?
21 MR. ARAGUAS: I'd ask that Bruce, do you
22 want to step up and address that question? Or Dan?
23 MR. BARSS: Dan Barss, senior emergency
24 preparedness specialist. If I understood the question
25 right, it was do we see a distinction or a difference

1 between a greenfields site and a site which may have
2 an existing -
3 CHAIRMAN POWERS: Well, I'm sure you see
4 a distinction, but the language that was quoted to us
5 here makes no such distinction. I mean, you could
6 say, well, if you've got a plant next door, just say
7 see theirs, or reproduce the major features out of
8 that. I mean, you could do something very much more
9 summary if, you know, Grand Gulf is Grand Gulf. I
10 mean, it's not going to change very much.
11 MR. BARSS: I think the answer lies in
12 that the criteria is the same, whether or not you're
13 a greenfield site or an existing site asking for a new
14 reactor. The criteria that we use is the same because
15 it's a new licensing action. Now, that criteria may
16 be easier for them to meet in that they can reflect or
17 show something in the existing plant that has already
18 met that criteria so that it should be easier for them
19 in the application to show that. But the criteria
20 that we put forward I don't think is going to be
21 different from one site to another. It's still the
22 same basis criteria.
23 CHAIRMAN POWERS: Well, I mean the
24 difficulty that was encountered is in just exactly
25 what you wanted to hear about. That's, I mean we

1 ended up counting hospital beds at one place, which is
2 clearly not a major feature. So the confusion is over
3 what you want. I think that's - is my understanding
4 of where the confusion lay? Not what was acceptable,
5 but what was needed for the application.
6 MR. SMITH: I think it was -
7 CHAIRMAN POWERS: You'll have to come to
8 a microphone. Because I think I understand exactly
9 what you're saying.
10 MR. SMITH: It's Marvin Smith with
11 Dominion. And I think the concern we had was that you
12 have an existing site with an existing site emergency
13 plan, and we simply intended to reflect the fact that
14 a new plan on that same site would basically have the
15 same major features of its emergency plan as the
16 already existing one. And it wasn't a question of the
17 criteria being different, it was a question of what we
18 were surprised by is the amount, level of detail in
19 terms of the review process required to find that a
20 new plant could apply those same major features that
21 had been there for years and been in use. And so it
22 was really the level of review required to do that
23 demonstration, not the criteria.
24 CHAIRMAN POWERS: I think that's - I mean,
25 that's where the confusion was, or the challenge that

1 the applicant faces, is he just doesn't know what he's
2 going to write, and how much you're going to demand,
3 and it becomes a 'bring me a rock' exercise.
4 MR. ARAGUAS: Right.
5 CHAIRMAN POWERS: And that's what you want
6 to avoid is a 'bring me a rock.' You want something -
7 I mean, we can use what finally came out if you'll
8 just say, yes, use what finally came out, and the guy
9 from the greenfield site is kind of stuck. He doesn't
10 know what to do. But at least the guys that are
11 asking for ESPS near existing reactors by example
12 know.
13 MR. ARAGUAS: Dan, do you have any follow-
14 up to that?
15 MR. BARSS: I don't. Is there still a
16 question I need to answer there?
17 CHAIRMAN POWERS: I'm still struggling to
18 know how - I guess I still don't know what the answer
19 is, except by case study.
20 MR. ARAGUAS: Right. I guess what he's
21 asking is some clarification as to why there was such
22 a detailed review.
23 MR. BARSS: Well, one, it's a learning
24 process. So we're all learning. Two, the criteria
25 that we used were applied uniformly to the three

1 different applicants in the review process. The three
2 different applications, though, varied considerably in
3 their degree of information provided. Just page
4 count, if I remember right, one was about 38 pages,
5 and another was 240-some pages, or something close to
6 that. So a magnitude of, you know, 10, the difference
7 there, as to what was provided. So the applicants
8 didn't give us the same level of detail to begin with.
9 But we did hold the same standard in each of those
10 reviews to make sure, again, independent licensing
11 action. We needed to make sure that those criteria
12 were addressed, and that they were clearly addressed
13 in the application so that we had a basis for making
14 the decisions. That's why I think there were a lot of
15 questions, and there was a lot of detail looked for in
16 our review to make sure that we could see where those
17 criteria were clearly met in the applications, or in
18 the reference plans that may have already existed.
19 CHAIRMAN POWERS: But you can - what I'm
20 struggling with is this. When I read the words "major
21 features," I would have expected three pages at most.
22 Three pages plus a map. That's what I would have
23 expected. So, I mean you're reading it to a different
24 degree of detail than I would *a priori* interpret the
25 words. And I think the applicants had the same

1 problem, and I think it's reflected in the fact in one
2 case you've got 20, and in one case you've got 240,
3 where they didn't know what it is that you wanted.
4 Okay? And they probably suffered as a result of that.
5 And it's not because of any unwillingness on their
6 part, it's they didn't know. And again, the next guy
7 coming down the pike can learn by case study if he
8 wants, but it's better if he just said here's what I
9 want.
10 MR. BARSS: And we are attempting, I
11 guess, to clarify that or do that in the standard
12 review plan rewrite which is ongoing. And although
13 it's more focused towards the COL, against the reg
14 guide, or DG-1145 that was just recently published, to
15 try and make clearer what we're asking for and when.
16 So that applies to COL, not so much to ESP. So we
17 recognize that need and we're attempting to clarify
18 that for the applicant.
19 CHAIRMAN POWERS: Ordinarily I would say,
20 yes, ESP is kind of a subset of COL. But here's one
21 where for COL I would expect a great deal more
22 detailed and major features. You know, much more than
23 three pages and a map.
24 MR. BARSS: I'm sorry.
25 CHAIRMAN POWERS: I know. We soldier on

1 here. And that's fine. We're going to get a lot of
2 things, a lot of COLs are promised to us. Are you in
3 a position to give us a thumbnail sketch of what it is
4 that you are going to put in this reg guide?
5 MR. BARSS: Concerning ESPS or COLs? Or
6 both?
7 CHAIRMAN POWERS: Emergency planning.
8 MR. BARSS: Emergency planning.
9 CHAIRMAN POWERS: Yes.
10 MR. BARSS: Well, the reg guide is fairly
11 well drafted. In fact, we hope that it will go out
12 for comment in the near future. And it lays out in
13 fairly, I think, deep detail the regulatory
14 requirements, and ties them to guidance documents,
15 most of them, I would say almost all of them in the EP
16 area are existing guidance documents, NUREG-0654. And
17 those are the criteria that have existed for more than
18 20-some years, and they continue to be the criteria
19 that we will expect applicants to address. And they
20 need to make clear in their application where and what
21 part of their application and other plan meets those
22 criteria, because that's what the staff is going to
23 use to look for both internal to the NRC and also,
24 since the offsite parts of those plans are reviewed by
25 DHS, DHS will use that same criteria.

1 CHAIRMAN POWERS: Okay, so what you're
2 saying, I think, and I could be wrong about this, is
3 that for an ESP permit you're requiring the same level
4 of detail and explanation, justification, et cetera,
5 that you require for an operating license.
6 MR. BARSS: It depends on what they ask
7 for. Remember, in the early site permit process there
8 are three options in the emergency preparedness area.
9 The early site permit only requires that we make a
10 finding of no significant impediments, and that there
11 be evidence that the state and local governments have
12 agreed, or signed some kind of certifications that
13 they agree to participate further in the emergency
14 planning process. That basically clears the hurdle
15 for an early site permit in the emergency preparedness
16 area.
17 The applicant is given two options. One,
18 they can ask for the major features option, or they
19 can ask for the complete and integrated plan at the
20 early site permit stage. It's the staff's position,
21 and understanding that if they ask for a complete and
22 integrated plan at the early site permit stage, that
23 is equivalent to asking for a complete and integrated
24 plan at the COL stage. Because they should get the
25 finality in that finding. So the answer would be yes,

1 we expect to the same level of detail in an early site
2 permit that asked for a complete and integrated plan
3 as there would be in a plan for an operating reactor,
4 the only difference being if it's an early site
5 permit, nothing has been built yet. There will be a
6 few items that will be ITAC'd, or have ITACs
7 associated with them, because obviously they haven't
8 built anything, they can't demonstrate some of the
9 things that are needed, and some of the implementing
10 procedures that come later may be necessary. But the
11 planning level of detail would be equivalent to what
12 an operating reactor would have.
13 CHAIRMAN POWERS: And certainly for a
14 complete and integrated plan I agree with you. What
15 is the guy that just wants major features to apply?
16 MR. BARSS: Well, currently the way the
17 regulations are written, and the way our guidance is,
18 RS-002 directs you to NUREG-0654, Supplement 2, and as
19 was mentioned, that talks about a description of the
20 planning, and not seeing the implementation. So what
21 we would expect, using the current guidance and
22 regulation, is we would expect to see a description of
23 those items that are identified in Supplement 2 that
24 meets the criteria that's in Supplement 2. I caveat
25 that by saying what's there now because the proposal

1 in Part 52 is to I would say broaden the major
2 features option to allow them to apply for more than
3 what's in Supp 2 now, and to make it so that they can
4 get - well, if you're familiar with the 16 planning
5 standards, they could provide us information on one or
6 several of those 16 planning standards, and give us a
7 complete description of that planning standard, and
8 get approval for that. That may go beyond just a
9 description of the plan, but may even talk about, you
10 know, the implementation, and particularly for an
11 operating site, that is a feasible possibility and
12 something that they could do, give you more than just
13 description, because they have established programs
14 that they can describe more fully. So with the
15 rulemaking, assuming it goes forward the way that it's
16 proposed, the major features option would be broadened
17 to allow a lot more latitude, a lot more items to be
18 approved at that early stage than what is currently in
19 the guidance, and we think in the regulation the way
20 it's written.
21 CHAIRMAN POWERS: And I think that's fine
22 to do that. I'm still more concerned about the
23 minimum set criterion. Like I say, when I read the
24 word "major features," three pages including a map.
25 I mean, that's just the way I interpret the words as

1 written in the regulation. That may not be a fair
2 interpretation, but just sitting down, saying major
3 features, that's what I see is three pages and a map.
4 MR. BARSS: I guess my quick view of that
5 is under the existing guidance and the existing
6 regulation, three pages and a map probably today would
7 not be enough. However, in the future, assuming
8 things are approved the way that we have drafted them
9 and proposed them, three pages and a map probably
10 would buy them a couple of major features, or maybe
11 part of a major feature, but it may not buy them a
12 whole lot. But whatever they propose would be found
13 acceptable. They may get the size of the EPZ if
14 that's what the map is, and that's one of the major
15 features. They could get that approval, but they
16 wouldn't get much more beyond that if that's the only
17 information they provided us. So the answer is three
18 pages and a map may be enough, but how much they will
19 get with that just depends on what they are able to
20 cover in those three pages. If they're double-sided,
21 they may get a little more.
22 MR. GRANT: Dr. Powers, if I might jump
23 in, it's Eddie Grant with Exelon. I think you've hit
24 upon a key issue in that part of our difficulty in the
25 emergency planning area for the early site permits was

1 the lack of a common understanding when we started the
2 process, particularly on major features. We could
3 have read it the same way you did, the way you do. We
4 could have read it a different way, which Exelon did,
5 which was, you know, we ought to be able to provide
6 you as much information as we can, and get credit for
7 that, and call those major features. Now, the
8 understanding of the staff was somewhere in between
9 with 0654 and Supplement 2, and there was some
10 difficulty on exactly our understanding then even of
11 that guidance, and did you have to meet all of the
12 planning standards, could you break it down by
13 criterion which are sub-pieces of the planning
14 standard, and where would it go from there. And
15 because we didn't have a good, solid common
16 understanding when we began that process, I think we
17 ran into some of these difficulties.
18 Another related piece of that is the end
19 game, the finality, and what did we get out of a major
20 feature. I think we also did not have a good common
21 understanding of what a major feature approval, once
22 we determined what it was, was going to buy us. Where
23 were we - and I'm not sure we still do, until we
24 actually try to implement the finality in a COL
25 application under a major features ESP approval,

1 exactly where we're going to be. I think we're going
2 to learn some more lessons as that occurs. So we
3 still have a little ways to go, I think, on major
4 features.
5 But we've made great strides, with the
6 staff's help, on where we can go, and what we can do
7 with regard to emergency planning, particularly in the
8 area where Exelon tried to go, which was to provide as
9 much information as we can because we do have that
10 site next door with a great deal of emergency planning
11 information available. And get as much credit for
12 that as possible, which would now occur under the full
13 and complete plan with open items that was discussed.
14 Thank you.
15 CHAIRMAN POWERS: I guess I too am coming
16 out saying I don't know what a guy now sitting down
17 looking at things is going to do. You know? I mean,
18 one option is always do everything as thoroughly and
19 completely as you possibly can, and get approval for
20 as much as you possibly can. I'm still more concerned
21 about what the minimum acceptable set is, because it's
22 entirely possible that somebody would say 'I don't see
23 a utility in doing it now because I'm not going to -
24 I'm going to get this site approval, but I'm not going
25 to make a building decision for 15 years. I know that

1 now. I'm not going to make it, so there's no point in
2 me going to great heroic efforts now.'
3 MR. GRANT: Yes and no.
4 CHAIRMAN POWERS: And so I'm struggling
5 with is he going to come in without a good
6 understanding of what the staff wants for the minimum
7 set. I mean, I think he knows exactly what the staff
8 wants if he's going to do the best he possibly - as
9 complete as he possibly can. I mean, there's a huge
10 amount of guidance out there, some of which is being
11 reexamined now. And as well we might expect, given
12 some recent emergency contretemps. But I'm not sure
13 the minimum set really knows this common understanding
14 you speak of. Now, we'll get to this finality issue
15 a little later, but just what do I put down?
16 MR. GRANT: If I might add just a little
17 bit more then. Again, Eddie Grant, Exelon. That
18 certainly is a valid concern with regard to the
19 minimum set. However, I would say I doubt that you'll
20 see - personal opinion here thrown in - I doubt that
21 you'll see many ESPS coming in with the minimum set.
22 Given the basis for an ESP is to get as much
23 information off the table with regard to possible late
24 litigation, typically I think you will see early site
25 permits going with the full and complete plan get as

1 much emergency planning information approved, and
2 again, off the table at the early site permit stage.
3 CHAIRMAN POWERS: Maybe that's the answer.
4 MR. BARSS: If I could - this is Dan Barss
5 again. If I could, to I guess amplify or play off
6 that. I think it was correct, as Mr. Grant said, that
7 you know there was differences on the applicants as to
8 what they applied for, what they thought they would
9 get, and the staff was somewhere in the middle. RS-
10 002 and Supp 2 was the line we held because that was
11 the guidance that was out there for the first three.
12 And the lesson learned, since that's what we're
13 talking about, and hopefully we've implemented that in
14 the rulemaking that's going forward, was to broaden
15 that major features option, to retain it and to
16 broaden it so that an applicant when he comes in now,
17 and you say what's the minimum, under the rule change
18 as we hope it will go forward they can choose that
19 minimum. They can choose how much they want to apply
20 for in the major features area, or how much or how
21 little they want. And we have, I think, provided them
22 that opportunity to make that a much broader spectrum
23 for them than the first three applicants experienced.
24 So since we're talking about lessons learned, I want
25 you to leave with that clear understanding, that we've

1 learned that lesson, and we've tried to broaden the
2 major features option to allow the applicants that
3 flexibility in a regulatory space and a guidance space
4 to provide both the avenues they need, to give them a
5 clear picture of what they can apply for and what they
6 can expect to get in that application. And we've also
7 tried to make sure we tie it clearly to the
8 regulations that will be used when we make the
9 reasonable assurance finding. That was a flaw that
10 the staff recognized as we went through the process
11 when we tried to write these things was, okay, what do
12 we write them back to. We don't have a regulatory
13 tie. It wasn't clear in the regulations to us, and
14 working through counsel we identified where we could
15 tie that. But as the regulations hopefully will be
16 when they're changed, the tie is very clear that it
17 goes back to, as Christian said, to 10 C.F.R. § 50.47
18 and Appendix E, which is the same criteria that the
19 applicant will need to meet at the COL stage.
20 CHAIRMAN POWERS: Any other comments on
21 this topic?
22 MR. ARAGUAS: Okay, the next item I had
23 was an issue that came out early on before the ESPS
24 were actually submitted, and that was the
25 applicability of 10 C.F.R. Part 21, Reporting

1 Requirements to ESP Applicants. Back in 2003 during
2 a workshop on the construction inspection program
3 framework document, there was a question that was
4 asked about the applicability of 10 C.F.R. Part 21
5 reporting requirements to ESP pre-applicants and to
6 ESP applicants. In response to that question, on June
7 22, 2004, the staff clarified its position in a
8 letter, stating that the 10 C.F.R. reporting
9 requirements as far as pre-applicants are concerned is
10 that it's not directly applicable in the sense that
11 the pre-applicant does not have any obligation under
12 the regulations during the pre-application phase to
13 comply with 10 C.F.R. Part 21 reporting requirements.
14 For both the ESP applicant and the ESP holder, the
15 staff stated that 10 C.F.R. Part 21 reporting
16 requirements do apply, and because site
17 characteristics form part of the basis for the design,
18 and because this in turn forms the basis for the
19 license, the staff feels it is appropriate to require
20 that an ESP applicant and ESP holder have in place a
21 10 C.F.R. Part 21 program.
22 Another issue that came out through the
23 reviews was the applicability of Appendix B to 10
24 C.F.R. Part 50 to ESP applicants. And this is similar
25 to what we said for 10 C.F.R. Part 21 in the sense of

1 why we feel that they should have some sort of quality
2 controls. The current regulations in 10 C.F.R. Part
3 52 do not require that a 10 C.F.R. Part 50 Appendix B
4 quality assurance program be implemented in support of
5 the ESP application. However, the staff determined
6 that the ESP activities associated with site safety
7 must be controlled by quality assurance measures
8 sufficient to provide reasonable assurance that future
9 safety-related systems, structures and components of
10 a nuclear power plant or plants that might be
11 constructed on the site will perform adequately. The
12 staff believes that the level of quality used to
13 control activities related to SSEs should be
14 equivalent in the ESP and COL phases. The staff's
15 position is that applicants must apply quality
16 controls to each ESP activity associated with the
17 generation of design information for safety-related
18 SSEs that meet the criteria in Appendix B. The
19 reasoning Again for this is that site characteristics
20 approved at the ESP stage will form part of the basis
21 for the design which in turn will perform part of the
22 basis of the license. To avoid any problems in the
23 future, the staff is proposing to modify 10 C.F.R.
24 Part 50.55(f) Appendix B, and 52.17, and make these QA
25 requirements applicable to ESPS. The staff is also

capturing this proposed change in the rule in the SRP updates.

CHAIRMAN POWERS: Let me - To a significant extent, the quality assurance requirements of Appendix B are in QA 1. And now we have these ISO standards coming out for quality assurance. Are you broadening or finding acceptable ISO standards?

MR. ARAGUAS: Paul, did you want to address that?

DR. PRESCOTT: Sure. This is Paul Prescott of the Quality Assurance branch. For as far as the ISO standards, we took a look at that based on a request for Commissioner Merrifield. In SECI 03117 we essentially found that ISO standards would not be an acceptable alternative to Appendix B. If you take a look, and it's in the paper, if you take a look at industries where safety is of concern, such a aerospace and automotive industry, they apply a substantial number of standards over and above the requirements of ISO. And so, as far as what we've seen so far, nobody tried to apply that, but our general view is right now that - and we supplied options to licensees that they could - of ways to implement it, but it'd be rather onerous to try and apply ISO to nuclear safety.

1 CHAIRMAN POWERS: I think I'm aware of
2 this, and I bring the issue up because I think you
3 want to capture that, if nothing else by reference.
4 Because you are going to have people considering
5 things like the EPR, and that's going to be rooted to
6 some extent in the ISO kinds of standards. And I
7 think you want to alert them to this kind of challenge
8 that they face in ISO'ing it, as opposed to Appendix
9 B. It's just a guidance kind of thing, okay? Because
10 you're - what you did for Merrifield was in a
11 different context.
12 DR. PRESCOTT: Right, absolutely.
13 CHAIRMAN POWERS: But I don't think it's
14 going to be different. I don't think you'll come to
15 a different conclusion in this context.
16 DR. PRESCOTT: No, I don't believe so.
17 CHAIRMAN POWERS: Yes. That's good.
18 Because I think that's - we're seeing a lot of this
19 ISO'ing, and it's a different, it's a little
20 different. It's not the same.
21 DR. PRESCOTT: We've already done some
22 overseas vendors and taken a look at them, and we're
23 not seeing issues with the big suppliers such as
24 AREVA, Mitsubishi Heavy Industries. It's the sub-
25 suppliers that are of concern, that we're going to

1 have issues with them.

2 CHAIRMAN POWERS: That's right.

3 MR. ARAGUAS: Okay, the last item I had
4 under what the staff needs to update in its review
5 guidance is criteria for computing probable maximum
6 flood. This was an issue that was captured during the
7 proprietary review period for the FSER for the Clinton
8 ESP application. During this proper view, Clinton
9 identified - or Exelon identified a discrepancy
10 between the calculated probable maximum flood
11 elevation, and what the staff had included in its
12 FSER. After several discussions with EGC, and after
13 performing several independent analyses, the staff
14 concluded that EGC's revised analysis conservatively
15 estimated the probable maximum flood elevation at the
16 Clinton ESP site.

17 The result of this was two lessons
18 learned. And the first of that was that it's not the
19 job of the staff to impose a bounding type of analysis
20 and a staff value on the permit itself as a method to
21 characterize the site. The other lesson learned was
22 that the staff needs to update its guidance on -
23 guidance and data used for computing the probable
24 maximum flood elevations. And to my understanding
25 that is part of the ongoing SRP updates. We are going

1 to incorporate review guidance on how it should be
2 calculated.
3 That concludes what I have for staff
4 lessons learned. What I've attempted to do here next
5 was based on the list of lessons learned that had been
6 sent to me. I think, Dana, you had drafted that list.
7 What I've attempted to do here was capture somewhat of
8 the discussions that were had from previous ACRS
9 subcommittee and full committee meetings, and to touch
10 on where the staff dispositioned these in terms of
11 lessons learned.
12 The first item I have was regarding the
13 review - reviewing the staff's analysis of hazards
14 posed to the proposed site by explosions and
15 transportation accidents on the Mississippi River.
16 And just to provide a little bit of background
17 regarding this, during the December 8, 2005, ACRS
18 meeting on that SERI ESP application and the staff's
19 FSER, the ACRS identified a concern on the evaluation
20 conducted for potential hazards along the Mississippi
21 River that could impact the ESP site. In light of
22 ACRS's concern, the staff determined that the
23 applicant did not meet Regulatory Guide 191, and
24 therefore the staff requested additional information
25 from the applicant to demonstrate compliance with 10

1 C.F.R. Part 100.

2 On March 8, 2006, SERI submitted Revision
3 3 to the ESP application, where it decided upon an
4 alternate approach to meeting the regulations with
5 respect to potential hazards along the Mississippi
6 River. SERI performed a risk assessment to
7 demonstrate the low probability for exceeding a peak
8 positive over-pressure of 1 psi at the ESP site, as
9 recommended by Reg Guide 191. The staff reviewed this
10 analysis and performed its own confirmatory analysis
11 to verify SERI's conclusions. On April 6 the staff
12 met with the ACRS to present its analysis of SERI's
13 submittal, and on the 14th the ACRS issued the staff
14 its final letter report on the FSER documenting the
15 satisfaction of the conclusions the staff drew.

16 This was, and what I wanted to point out
17 here was this was an example where the staff made a
18 mistake, and the NRC review process demonstrated its
19 functionality regarding the ACRS ASLB commission. In
20 this case, the ACRS identified a mistake in which the
21 staff relied on engineering judgment when it should
22 have conducted a confirmatory analysis to identify the
23 flaws in the applicant's earlier methodology. As far
24 as the review guidance for this, the staff feels that
25 this was not an indication of poor or inadequate

1 review guidance, but merely a mistake on the staff's
2 part. I just wanted to point that out. And that's
3 all I have.
4 CHAIRMAN POWERS: I think a "mistake" is
5 a stronger term than I would have used. What you find
6 in all these applications is there will be statements
7 made. Sometimes those statements are substantiated by
8 quite a lengthy defense, and sometimes they're not.
9 And there's a judgment involved in writing any
10 technical document of where you go into a great deal
11 of detail and where you assert something. And in this
12 case, I mean it came to mind because an assertion was
13 made, and I said, gee, I don't understand that. And
14 the subcommittee pursued it, and we still couldn't
15 understand it. And when we brought it to the staff's
16 attention, they realized they couldn't understand it.
17 Okay? And apparently when it was brought to the
18 applicant's attention he couldn't understand it, and
19 revised his analysis.
20 And the issue here is do we all have a
21 common understanding of when we can make assertions
22 and when we can't. Now, I don't know if you can ever
23 write anything down that's definitive on that. That's
24 a skill and a craft of engineering, I suppose. But
25 yes, I mean, and congratulations to all parties on

1 resolving the issue well and completely, and we were
2 very happy with the resolution, and thought a risk
3 assessment was an excellent way to resolve this, by
4 the way.
5 MR. ARAGUAS: Okay. Moving on to the
6 second to last topic I had here was the review of the
7 development and study of climate change for the next
8 20 years. And to my understanding this was a very
9 familiar topic of the ACRS subcommittee and full
10 committee meetings for all of the ESP applications.
11 The staff recognizes the ACRS concern, but
12 does not endorse revising the ESP review standard or
13 the SRP to develop new review procedures and
14 acceptance criteria to account for climate change.
15 And I'm sure this doesn't come as any surprise to you
16 as a result of all the responses to the ACRS memos.
17 CHAIRMAN POWERS: It surprises me that
18 you're not going to review the review standard,
19 because that's what causes the problem. The problem
20 is inherently a statement that we will examine the
21 data for its applicability.
22 MR. ARAGUAS: Right.
23 CHAIRMAN POWERS: That's where you get
24 into trouble on this. Because that's a broad and
25 overencompassing thing, is it applicable, not only in

1 space but in time. That's what has to be revised. I
2 mean, I don't think you can get out of this one
3 without revising RS-002.
4 MR. ARAGUAS: I'm going to ask that, Brad,
5 did you want to address that?
6 MR. HARVEY: There was a lengthy
7 discussion between yourself - this is Brad Harvey, by
8 the way, with the NRC staff, physical scientist -
9 between the subcommittee and Dave Matthews back in
10 July 6, 2005, on the review of the North Anna final
11 SER where several points were made. One of them is
12 that there is a lot of uncertainty involved with
13 projecting climate change, and that it seemed that it
14 would be inappropriate to potentially look at
15 increasing the margin that you had asked the
16 applicants to put in the site characteristics based on
17 a fairly large measure of uncertainty involved with
18 the current state-of-the-art with climate change.
19 Just like you wouldn't ask them to reduce - or you
20 wouldn't expect the applicant to come to us and ask
21 for a reduction of a safety margin based on an aspect
22 that had a large uncertainty to it.
23 The second point I wanted to make is that
24 a lot of our climatic site characteristics are based
25 on industry standards. The American Society of Civil

1 Engineers and ASHRAE, which is American Society of
2 Heating and air conditioning ventilation, and a lot of
3 building codes come out of those standards. And we
4 would expect that these industry standard committees
5 would be looking at climate change as things go
6 forward, and adjust accordingly the standards that
7 they would expect new facilities, not just power
8 plants, but any major industrial and building done in
9 the country to address. For instance, I do know that
10 after the '91 - '92 hit of Hurricane Andrew on south
11 Florida, that the ASCE had done a study of the effects
12 of hurricanes potentially in coastal regions, and
13 revised their wind load standards accordingly. And so
14 I would expect this effort potentially to undergo as
15 well in the future as the state-of-the-art knowledge
16 in climate prediction unfolds. And also, there's also
17 a lot of uncertainty among the climatic experts still
18 today as to whether or not this is a real phenomenon
19 that is going to impact and how it would impact the
20 weather patterns throughout the country and throughout
21 the world. So the staff position has been that
22 basically it's up to the applicant after the ESP is
23 issued to identify any potential major changes to the
24 site. And that would involve, for instance, or
25 include any significant climatic changes when they

1 come in at the COL to use the ESP as a basis for their
2 COL application if there is changes in the methods and
3 process and advances in climate change that would be
4 incorporated at that point in time and identified as
5 part of their COL in that application process.
6 CHAIRMAN POWERS: Well, a couple of
7 responses here. First of all, I'm not sure that
8 everything the staff does is an absolute prescription
9 and devoid of any uncertainty. I don't think the
10 staff is unfamiliar with uncertainty in its analyses.
11 I'm equally not aware of too many things the staff
12 does where it bases it on the assumption that a third
13 party will do something, revise its standards. In
14 fact, I can think of no example where the staff does
15 that.
16 That's not the issue. The issue is in the
17 RS-002 the staff said it would look at the
18 applicability of the data. And here what you're
19 looking at, I mean the thesis is we will look at
20 historical climate data and assume that the next 50
21 years looks a whole lot like the past 50 years. And
22 the question is, does it? And I have right here whole
23 sets of papers that say no, especially on the Atlantic
24 Coast and to some extent the Gulf of Mexico, the
25 intensity of hurricanes goes through cycles. And

1 there are a couple of cycles. And sometimes those
2 cycles are in phase, and sometimes they're out of
3 phase. We happen to be entering an era when they're
4 in phase. And some people say there's going to be
5 more storm activity. And there seems to be no debate
6 about this. This is based especially on the Atlantic
7 Coast they have a history essentially since 1750, and
8 it's about a 50-year cycle, and so there's a huge
9 amount of, it's simply drawing a curve there. What
10 the technical debate gets into is does more storm
11 activity translate into more hurricanes of about the
12 same size, more hurricanes with some of them including
13 more very intense hurricanes, Category 5 hurricanes,
14 or in fact more hurricanes but they're all weaker.
15 And so yes, there is a very big challenge in looking
16 at the consequences of these predictions.
17 And the staff might well take the position
18 of, gee, that's in the scientific world. They've got
19 to sort this out before I know how to react to it, and
20 I will take the next 50 years, in which case all you
21 have to do is set that down in the review standard,
22 and say when we're looking at the applicability, we're
23 looking at the geographical and not the temporal, but
24 people ought to take a big enough history to make sure
25 they capture this cycle effect, because that's

1 established and real. How it affects the intensity of
2 hurricanes or the frequency of hurricanes is not
3 established. That's - the inherent problem is the
4 statement you wrote down in the RS-002 of reviewing
5 the applicability. You know, the practical thing, am
6 I going to do anything about this, or modify the
7 historical data in some sense, the staff has probably
8 taken a reasonable position. It says wouldn't know
9 how to do it, could find an expert to move the curves
10 up, move the curves down, leave the curves the same.
11 Kind of at a loss here, so stay tuned and we'll see
12 how things work, and if it works to the detriment
13 we're going to have to make some changes. That's
14 essentially your position. Fair enough. But you've
15 got to change the words in the RS-002. I just don't
16 see how you get out of it. And it seems to me it's a
17 modest change.
18 MR. ARAGUAS: Right. Brad, do you have
19 any follow-up comments to that?
20 MR. HARVEY: No, that sounds reasonable to
21 me.
22 MR. ARAGUAS: Certainly we'll take into
23 consideration any recommendations that you would have.
24 CHAIRMAN POWERS: I mean, your job is not
25 to become experts in weather, though it's fascinating.

1 I will tell you, I've really enjoyed pursuing this
2 issue. You will learn how happy you are not to have
3 a job as a weather forecaster. Long-range weather
4 forecaster. It's a very difficult field. And when
5 you say it's uncertain, yes, you're right, but it's
6 uncertainty, and you can make - you can solidify that
7 by saying, gee, we've looked at this data (and
8 actually do look at the data) and say it does not look
9 like anything moves outside the bounds that we find
10 tolerable, and I think you'll find that's probably
11 true. It's more frequency. I mean, you already
12 prescribe things that are Hurricane 4's and 5's, or
13 maybe super-5's in some cases. And so you can
14 tolerate a lot. It's more of a frequency thing. You
15 could say, look, we're not taking any huge risk here
16 by deferring in time. I mean, I don't think you've
17 come up with an unreasonable approach to this, but
18 again, your review standard which we took as, in
19 looking at, which you provided us, as kind of gospel.
20 It says you're going to do something you don't want to
21 do.
22 MR. ARAGUAS: The last item I have here is
23 I think we've touched on quite a bit, so I'm not sure
24 if there's any more that needs to be added, but I'll
25 read it. It's just that RS-002 should clarify how an

1 ESP application can rely on emergency plans for an
2 existing nuclear power plant. But I think we've
3 exhausted that one.
4 CHAIRMAN POWERS: I don't know if we've
5 exhausted it, but we've certainly discussed it.
6 MR. ARAGUAS: Sure.
7 CHAIRMAN POWERS: And I come away not
8 entirely clear on what you've done, but it may be it's
9 simply a practicality. What you're doing is going to
10 meet 90 percent of the cases you actually address.
11 MR. ARAGUAS: And I think that's an
12 appropriate way to look at it. That concludes the
13 staff's presentation.
14 CHAIRMAN POWERS: Now let me ask you a
15 question you probably don't want to answer. I have
16 been effusive in my praise of the licensees'
17 applications and whatnot, as well as your SERs. I'll
18 ask you now, what do you think of the applicants that
19 you've gotten?
20 MR. ARAGUAS: As far as the three
21 applications? I think, and this is my opinion, I
22 think that they were pretty good, but there's
23 certainly some room for improvement, some things that
24 they could have been incorporated that we now realize
25 are important. Small things like incorporating tables

1 of what they are identifying as site characteristics.
2 Maybe in some cases they didn't follow exactly the
3 sections that we called out in RS-002, or what was in
4 the SRP. But beyond that I thought that they were
5 pretty good.
6 CHAIRMAN POWERS: I assume that every time
7 you write a request for additional information there's
8 been a failure on someone's part. That either the
9 staff's failed to explain things correctly on their
10 expectations, or the licensee has failed to live up to
11 those expectations.
12 MR. ARAGUAS: Correct, but I think that
13 it's kind of hard to characterize because it is a
14 first of a kind review.
15 CHAIRMAN POWERS: Sure.
16 MR. ARAGUAS: Putting that aside, pretty
17 good.
18 CHAIRMAN POWERS: Pretty good, okay.
19 Well, thank you. Members have any questions they'd
20 like to pose? Very nice summary. Very nice summary.
21 Well done. Looks like we're in good shape here.
22 MR. ARAGUAS: Thank you.
23 MEMBER SHACK: Just a question. Looking
24 ahead, you know, is it clear what you're going to do
25 with the ESP application and how well it's going to

1 fit in when somebody actually comes in with a combined
2 license application?
3 MR. ARAGUAS: Nan, did you - Nan or Bob,
4 did you want to take that one? I'll give you the
5 expert in Part 52 here.
6 MS. GILLES: Nan Gilles with Division of
7 New Reactor Licensing. And actually we are very much
8 focusing on those issues right now as we are preparing
9 for some of the combined license applications that are
10 going to be referencing ESPS. And as we are preparing
11 to possibly issue some of these very first ESPS. And
12 we are looking at just those issues. We are looking
13 very closely at the comparison that we're going to
14 need to do at the combined license stage to ensure
15 that the design that was chosen by the applicant is
16 actually bounded by the parameters that were
17 identified at the early site permit stage. And we are
18 trying to carefully consider what exactly - what of
19 those parameters exactly need to be discussed in the
20 permit itself so that at the time that we do that
21 comparison the staff has everything that it needs to
22 perform that comparison, and the applicant knows what
23 will be expected at the combined license stage.
24 MEMBER SHACK: Will this be incorporated
25 by reference? How will the information be used in the

1 combined license?

2 MS. GILLES: Well, the site safety

3 analysis report that was prepared at the early site

4 permit stage will actually become a part of the

5 combined license final safety analysis report. And

6 that's really the largest piece of information from

7 the early site permit work that will be used in the

8 combined license stage. The information in the permit

9 itself will be the site characteristics and design

10 parameters that were used at the early site permit

11 stage, and those will be used for comparison to actual

12 values at the combined license stage, but the bulk of

13 the information that will be used in the combined

14 license review, or in the combined license application

15 is the site safety analysis report, because that will

16 actually become a part of the combined license final

17 safety analysis report.

18 MEMBER SIEBER: It's the same as current

19 plants. You find all this stuff in the first few

20 chapters of the FSAR now.

21 MS. GILLES: That's correct.

22 CHAIRMAN POWERS: It's going to be an

23 interesting set of feedback here. We'll learn a lot

24 I suspect. I guess on my list I have Mr. Hegner next?

25 MR. SMITH: It's Marvin Smith.

1 CHAIRMAN POWERS: Okay.

2 MR. SMITH: Well, first let me say that I
3 think several of the points that we'll be discussing
4 here have already been covered probably more than
5 adequately. So perhaps we can go through some of
6 these fairly quickly.

7 I think one thing that I wanted to start
8 with, again, my name is Marvin Smith and I'm the
9 project director for Dominion for our early site
10 permit project. And so I wanted to really kind of
11 emphasize, I think it was perhaps partly something you
12 brought out in your question, but you know, if you
13 look at what we're talking about here today in terms
14 of early site permit lessons learned, I really think
15 that we need to sort of broaden that to think about
16 this as lessons learned on site-related issues.
17 Because there's going to be a lot of COL applications
18 coming in. We think and we hope, in fact, that by
19 going through this early site permit process as
20 Dominion that we've had a little bit of a jumpstart on
21 resolving some of those, and so when we do get into
22 the COL we in fact, and there's always some question
23 of finality, but we certainly do expect to benefit
24 from that. And I think beyond that that it would be
25 good for the COL applicants that are not doing early

1 site permits to pretty carefully review what happened
2 for these early site permits, because I think a lot of
3 the issues that were identified here and hopefully
4 resolved or at least improved upon as part of this
5 process will be directly applicable to COLs that will
6 have to have the same material included in their COL
7 applications. In fact, as you say, it's basically the
8 early site permit can be thought of as essentially
9 Chapter 2 of the FSAR. So you know, in essence, if
10 you don't deal with it in an early site permit you're
11 going to have to deal with it at COL.
12 And I think one of the things we feel like
13 was a benefit of this ESP process is getting some of
14 those issues discussed and evaluated, getting some of
15 the RAIs issued and answered and responded to in the
16 early site permit stage is at least getting it done,
17 you know, before you're quite as far along as you
18 might be in terms of a COL application. One example
19 of that is in our case we did end up changing our
20 cooling system methodology for our plant. And one of
21 the things that meant, for example, is that the actual
22 location on the site where you put the plant is
23 therefore different. So you know, if you had deferred
24 those kind of issues until a COL was submitted, you
25 know, it's comparatively easy to relocate the

1 containment center line before you've located it.

2 (Laughter)

3 CHAIRMAN POWERS: A paper plant is really

4 easy to relocate.

5 MR. SMITH: Well, you know, beyond a paper

6 plant. Right now we're out there doing initial core

7 borings, one of which is right down the middle of the

8 containment center line, and so, you know, it was

9 really a very good thing as part of this ESP process

10 to realize when you're going to use cooling towers

11 versus a lake for cooling, then that changes where the

12 containment center line is going to be. So even

13 beyond just the paper plant issue there is the

14 physical exams and all that sort of thing, the

15 geotechnical work that you do, et cetera, you know,

16 for the COL, really do need to be a little more

17 specific and exact. So again, I think one of the

18 lessons learned we have from ESP is that it really

19 does work. It gives you the opportunity to examine

20 and think through and resolve some of these issues a

21 bit earlier, and while there's some schedule pressure,

22 it's less than you see in a typical COL application

23 where you're actually planning on and have a schedule

24 to build a plant and want to get on with it, et

25 cetera. So, I guess that's the first point I really

1 wanted to make out of this is that's probably one of
2 the biggest lessons learned from our viewpoint that we
3 have in this whole process.
4 CHAIRMAN POWERS: The COL's going to be
5 more demanding because you don't have the option of
6 deferring things to the COL.
7 MEMBER SIEBER: Well, one of the issues is
8 you do all this up-front thinking and planning before
9 you spend a lot of money.
10 MR. SMITH: Right.
11 MEMBER SIEBER: That's obviously an asset
12 to your construction plan.
13 MR. SMITH: Very much so, yes.
14 MEMBER SIEBER: It allows you to separate
15 issues so that you can deal with the site issues with
16 a good focus on it as opposed to typically putting it
17 in the background while you worry about the plant,
18 which is the old way of doing things.
19 MR. SMITH: Right.
20 MEMBER SIEBER: So I think that the logic
21 is clearly here to do this.
22 MR. SMITH: Right, and I think, you know,
23 a lot of companies have looked at this and said, well,
24 gee, I can just skip past ESP and deal with this at
25 COL.

1 MEMBER SIEBER: Not that easy.

2 MR. SMITH: But a lot of companies are
3 going to do that, and I think you can do it, but what
4 it's going to mean is that, you know, you really
5 better look at the lessons learned from this early
6 site permitting process because if you're not going to
7 deal with it early, and you deal with it later, then
8 the consequences of having to deal with it later can
9 be more significant than having gotten it out of the
10 way early.

11 Again, just you know, we discussed seismic
12 a bit. Certainly Dominion is very supportive of this
13 development of ASCE methodology. Just a little bit of
14 a clarification. In our case we kind of looked at the
15 older methodology and the ASCE and came up with an SSE
16 that really bounded both. And we ended up using the
17 older, more current methodology to support that final
18 SSE. But what we wanted to do is have one that we
19 were confident really could kind of work under either
20 methodology. So that's sort of the approach we ended
21 up taking, so we're very supportive of that.

22 We still believe there's some need to have
23 some additional clarification on where you set the
24 SSE. You know, one of the issues we feel like is not
25 completely clear is, you know, is this something

1 that's important that the free ground surface or the
2 foundation level. You know, if you look at a rock
3 site like North Anna, it just seems sort of to me that
4 the SSE that's the real issue is that ground motion
5 that occurs at the foundation level, not what occurs
6 at the free ground surface. But I still think there's
7 some lack of clarity in the NRC guidance on this
8 particular issue that we would recommend be clarified.
9 Again, it gets back to this issue of, you know, if
10 you're going to deal with this at COL versus ESP I
11 think it's really important that you know exactly what
12 you're doing from Day One on that. So.
13 MR. MUNSON: Can I comment on that?
14 MR. SMITH: Yes.
15 MR. MUNSON: This is Cliff Munson. We
16 were bound by the regulation 100.23 defines SSE as
17 free surface motion. Now, there is further
18 explanation of this in the Standard Review Plan
19 Section 3.7.1, and we agree with Dominion's comment
20 that we need to provide additional clarification on
21 this issue. And we are doing that in the regulatory
22 guide we're developing currently. But we have to be
23 careful that we follow, you know, what's in the
24 regulation. So it is defined at the free surface.
25 It's free surface motion.

1 CHAIRMAN POWERS: And you have to do that
2 because it's the regulation, but we don't have to do
3 that. We can say the regulation needs to be changed.
4 MR. MUNSON: Well, but what we end up
5 doing for rock sites like North Anna that have thin
6 soil layers that are considered incompetent that are
7 going to be removed before the building is siting
8 there is we allow them to define the SSE on a
9 hypothetical outcrop of the competent material, which
10 is in the free surface. That outcrop is defined as
11 free surface ground motion. So I think we're not far
12 apart on agreeing with industry on this issue. And as
13 I did say, we will provide clarification in the new
14 regulatory guide on this.
15 MR. SMITH: Thank you, I appreciate that.
16 It just was an issue that caused us some confusion as
17 we were going through the process, if you will.
18 Again, we've - one of the things that has been
19 apparent in a lot of the recent work on seismic is
20 that, particularly for rock sites in the central and
21 eastern U.S., you have a lot of high frequency content
22 in your seismic, and you know, there's still - and
23 there's a seismic issues task force, and a lot of
24 ongoing work to really deal with and resolve that.
25 And I guess my understanding, I'm not a seismic expert

1 to any extent at all, and I have more than enough fun
2 reading through the geotech -
3 (Laughter)
4 CHAIRMAN POWERS: It's quickly becoming
5 everybody's favorite section.
6 MR. SMITH: Have your dictionary with you,
7 it certainly expands your vocabulary. But the high
8 frequency, if you just look at it, you know,
9 accelerations and peak ground accelerations that occur
10 at very high frequencies involve extremely tiny
11 displacements. And just sort of inherently you think
12 that those are not likely to be all that damaging, but
13 there's still a lot of equipment qualification and
14 other issues that hinge on that that I just urge, you
15 know, NRC and the industry to continue to work to
16 clarify and resolve. As I say, I think in particular
17 as you go into the COL aspects of this, that's going
18 to be extremely important to get some of that work
19 through.
20 MR. MUNSON: And just to comment further
21 on that, we are interacting with industry on that
22 right now on the high frequency effects, but we don't
23 view that as an ESP issue because at ESP we are only
24 evaluating the SSE as determined by the seismic
25 hazard, the regional and local seismic hazards. So

1 that's more a design issue which is going to happen at
2 the COL stage.
3 MR. SMITH: I understand, I just - we're
4 approaching COL stage now, so.
5 CHAIRMAN POWERS: Living large in your
6 imagination here.
7 MR. SMITH: Again, I understand it's
8 really not per se an ESP issue, but like I'm pointing
9 out here I think -
10 CHAIRMAN POWERS: Is it -
11 MR. SMITH: I think some of the things
12 that we see in ESP, like that one, carry over to COL.
13 And really I think, again, it's a good part of the ESP
14 is that we've identified that issue, even though it's
15 not necessarily resolved at the ESP stage, you know,
16 it clearly brings it to the forefront. And as you
17 say, I think we are working together towards resolving
18 it. But it's the kind of thing that takes awhile, you
19 know. You just can't, you know, resolve something
20 like that in a very short period of time.
21 CHAIRMAN POWERS: Is the concern one of
22 lack of knowledge, or is it a regulatory issue?
23 MR. SMITH: A little bit of both, I would
24 say.
25 CHAIRMAN POWERS: I think maybe the

1 answer's yes.

2 MR. SMITH: I think the answer is yes.

3 You know, it's - you know, if you're dealing with the

4 high frequency issue, you know, there's the question

5 of how much of that high frequency, and how does it

6 actually get into the structure, et cetera. So there

7 are technical and regulatory aspects, and I think that

8 the answer's yes, and they both have to be worked

9 through. So as I say, sort of inherently you have to

10 think that such tiny displacements are not likely to

11 be a significant risk or significant damage with

12 perhaps, you know, some rules to say you don't use

13 particularly vulnerable equipment, if you will, to

14 relay chatter and things like that that can be

15 affected by that. But most things are not going to

16 be, so to me it's more a matter of, you know, you need

17 to understand that this is going to occur, and you

18 need to have it taken into account in your design in

19 a reasonable way, and so forth.

20 MEMBER SIEBER: Well, it's sort of

21 interesting, though. You look at the only design

22 certification that we've done which is 600 and 1000.

23 The seismic characteristics are already built into the

24 plant design, so the question is you take your ESP

25 seismic characteristics and match it to the plant

1 design, it's already been approved to see if it
2 matches or not. You're not going to be redesigning
3 for soil liquification or liquefaction or high
4 frequency response. The plant is going to come as a
5 box from some factory, and its seismic structure is
6 already going to be there. So you'll just put the
7 puzzle together.
8 CHAIRMAN POWERS: It seems to me some of
9 the most vulnerable parts of the plant, the pipe
10 laying out and whatnot, is deferred to the COL.
11 MEMBER SIEBER: Hangers and supports are,
12 and probably the - well, I know that in APPLICANT 1000
13 the electronic part of the control room is high tech.
14 That will have gone through 10 more evolutions before
15 we ever get to - somebody will invent a new chip and
16 the whole control room will change.
17 CHAIRMAN POWERS: That's right, that's
18 right.
19 MR. SMITH: I think it's one case where,
20 you know, we're looking at ASPWR rather than APPLICANT
21 1000. So we sort of have an advantage of working with
22 GE up front to know what our SSE is. And so they've
23 sort of got a little bit of an advantage to build some
24 of that in.
25 MEMBER SIEBER: You can sort of force

1 them.

2 MR. SMITH: Right.

3 MEMBER SIEBER: It's like forcing

4 Chevrolet to give you something that looks like a

5 Dodge, you know what I mean?

6 MR. SMITH: I understand. So I guess the

7 next thing is the plant parameters envelope. There's

8 been a little discussion of this already. I think it

9 was a little bit of a difficult concept on all sides.

10 And the guidance was really not per se structured to

11 support it, and I think we've learned a lot about how

12 to do this, and I think a lot of the comments that

13 were made by the NRC in their presentation addressed

14 that. So I still think that, you know, we'd like to

15 see the PPE provide the same level of finality as the

16 specific design, as long as the design you choose

17 falls within the envelope. And I think that as was

18 discussed by the NRC, we do need and have learned how

19 to pare down the list of parameters to the important

20 ones. I think when we started we just sort of had an

21 envelope that described a lot of things, many of which

22 weren't used, or did not end up being important. So

23 you know, we didn't know going in what was going to be

24 important at the end, and so we kind of perhaps

25 included a few too many things in Dominion's case, and

1 I think now understand that we could probably do a few
2 less.
3 I think we've, again, talked through
4 emergency planning in great detail. Again, our only
5 thought was that, you know, it did take a lot more
6 review effort to get major features for an existing
7 site than we expected going in.
8 Again, some other areas that we found.
9 You know, this one is just sort of a little example,
10 and I think we eventually worked through it, but it
11 took a little bit of effort, and it just goes to show
12 how, you know, when you see guidance it can make
13 things a little interesting. You know, you talk about
14 - the guidance talks about essentially adding the
15 weight of a hundred years' snow pack to the weight of
16 the 24-hour winter PMP. Well, the 24-hour winter
17 probable maximum precipitation here in Virginia as you
18 might imagine is a lot of rain, like 19 inches of
19 rain. And if you converted that into snow it would
20 be, what, 19 feet. So you know, I don't think really
21 the intent of that guidance was to, you know, sort of
22 combine two unlike quantities, but if you looked at
23 it, that's sort of what it stated or implied.
24 CHAIRMAN POWERS: We had the same problem
25 at Grand Gulf, didn't we?

1 MR. SMITH: I think so, yes.

2 CHAIRMAN POWERS: That we were combining
3 an improbable event with another improbable event to
4 get a maximum that was never going to occur because
5 you don't get 19 feet of snow in Mississippi. Since
6 the dinosaur age it hasn't occurred.

7 MR. SMITH: Well again, it was like I say,
8 really the maximum winter season precipitation is not
9 one that's going to fall as frozen snow. It's going
10 to be rain. And so certainly you need to take that
11 rain into account in designing your structure so that
12 if you have a snow pack on there, you don't rely on
13 things to remove the water that might fall in the
14 winter. You don't want to rely on gutters and down
15 spouts that are clogged, if you will, in the sense of,
16 you know, you might have in your house. So you
17 certainly want to consider both as part of your design
18 process, but the way you do that isn't, you know, to
19 add two unlike quantities to come up with something
20 that is not reasonable itself.

21 MR. HARVEY: May I make a comment here?
22 It's Brad Harvey with the staff. I recognize the
23 confusion that this issue caused for both the staff
24 and for the applicants. And so the standard review
25 plan 2.3.1 on regional meteorology that went out for

1 public comment earlier this year in February I think
2 attempted to address this concern, and to give more
3 guidance as to exactly what the intent here is in
4 terms of adding these two unlikely events, and how
5 they would potentially impact design.
6 MEMBER SIEBER: So what is the intent?
7 MR. HARVEY: Basically what it is is that
8 if the design of the roof is such that the combination
9 of both a 100-year snow load and the 24-hour winter
10 problem - I think it's actually 48-hour, not 24-hour -
11 probable maximum winter precipitations. You look at
12 the design of the roof there and say it's just not
13 realistic that that amount of, volume of water, liquid
14 and snow could stand on top of the roof. But that's
15 more really a Chapter 3 issue, not a Chapter 2.
16 MEMBER WALLIS: So what should they
17 assume? What should they assume?
18 MR. HARVEY: They need to show that the
19 roof can withstand, either through, again, assuring
20 that your down spouts aren't clogged, or if you've got
21 a containment that's dome-shaped it's an obvious
22 situation where, you know, that's not a concern. But
23 if you do have a flat roof, maybe some sort of
24 measures need to be taken to assure that it would
25 drain properly. And this is identified as a severe

1 environmental load.

2 CHAIRMAN POWERS: Is the staff just

3 getting too prescriptive here? Maybe you should say

4 show that your roofs can stand up to the loads that

5 they would have historically experienced over some

6 period of time. A hundred years is as good as any

7 other number. And not tell them how to define that.

8 MR. HARVEY: Well, my challenge here is to

9 put together site characteristics that need to be

10 input to the design of the plant.

11 CHAIRMAN POWERS: Sure. Tell me how you

12 define the maximum load that historically has shown

13 up, and show me that your structure will stand up to

14 it. Rather than prescribing add this plus this other

15 thing and put it all on Tuesday or something like

16 that. I mean, it just seems to me that you've just

17 gone too prescriptive here.

18 MR. HARVEY: Well, this is based on a 30-

19 year-old branch position that I relied.

20 CHAIRMAN POWERS: Sure. And we can say

21 30-year-old branch positions are open to discussion

22 here. They're not sacrosanct.

23 MR. SMITH: I think sort of where we ended

24 up on this is the 100-year snow pack, and then you

25 define the liquid precipitation you expect separately,

1 and then say that your structure has to be designed
2 for the combination of those two. So in other words,
3 you have to design that if you have that kind of heavy
4 rainfall on top of a roof already loaded with snow, at
5 the design phase you take those two loads into
6 account.
7 CHAIRMAN POWERS: Sure.
8 MR. SMITH: And but the branch position
9 would have specified that you do that by adding the
10 two together. That's what we have the difficulty
11 working through.
12 MR. HARVEY: Well, if you see the way the
13 site characteristics are presented, they are presented
14 as two separate.
15 MR. SMITH: They're presented now
16 separately. I think that resolved it.
17 MR. HARVEY: And we did not add them as
18 site characteristics.
19 MR. SMITH: Correct.
20 MR. HARVEY: To address your concerns.
21 MR. SMITH: We ended up I think exactly
22 where we should have been, and I think that was,
23 again, one of the lessons learned.
24 MEMBER WALLIS: Well, taking them
25 separately doesn't help. I mean, it's the water

1 that's the load, isn't it. It's the 19 inches of
2 water that's the load. The snow is irrelevant. All
3 the snow does is to block the drain. This is sort of
4 Grand Gulf, you're going to get six inches of snow as
5 the maximum. That weight is nothing compared with the
6 weight of water you're talking about. The question is
7 how do you treat all that water.
8 CHAIRMAN POWERS: See here the problem is
9 that the conception was that the winter precipitation
10 would be in snow. So he was forced to convert 19
11 inches of water in 24 hours into the equivalent amount
12 of snow. It's a God awful amount of snow.
13 MR. SMITH: Right.
14 CHAIRMAN POWERS: But it would never
15 occur.
16 MR. HARVEY: I don't think that was our
17 intent, and hopefully the SRP will expand upon that.
18 MR. SMITH: Again, I think this is a
19 lesson that we learned, and I'm just saying that, you
20 know, if you - one of the things, you know, like I
21 say, it was based on the 30-year-old branch technical
22 position, it just took awhile to work through. I
23 think we've resolved it, and it was one of the lessons
24 learned that came out of this ESP process. So as long
25 as it's clear now how you establish, and I think the

1 two separate conditions we ended up with is the
2 appropriate answer to that. You have to deal with
3 both of them.
4 MEMBER SIEBER: What about chi over Q?
5 MR. SMITH: Well again, we looked at /Q,
6 and really I think this might even be, you know,
7 particularly for an early site permit this was
8 important because, you know, typically with /Q you
9 look at exactly where the release points are going to
10 be, and you measure the distance from there. You
11 consider things like building lake effects, et cetera.
12 MEMBER WALLIS: I'm sorry, I'm going to go
13 back to this snow load thing. I don't understand what
14 you're doing here. Snow accumulates on roofs in cold
15 climates unless you take it off. So how many
16 snowstorms are you allowing to accumulate on the roof?
17 There's all kinds of questions about snow load that
18 seem to be sort of raised if you can simply take a
19 hundred year snow load. Over How long a period of
20 time? A whole month of snow, or what?
21 MR. HARVEY: Well, the hundred year snow
22 load is I think by definition -
23 MEMBER WALLIS: By a winter of snow?
24 MR. HARVEY: No, it's the maximum amount
25 of snow that you would expect to be on the ground at

1 any time over a hundred year period. So it may not be
2 one storm. It may be a combination of several storms
3 that would eventually to that snow.
4 MEMBER WALLIS: If you travel in a cold
5 climate you may have five feet of snow, and then
6 you've got rain, and a whole lot of rain. So anyway,
7 I don't think you can leave this whole thing too iffy.
8 MR. HARVEY: Well, actually this may not
9 be the designing parameter. I wish Guton was still
10 here. But I think the probable maximum precipitation
11 at the site is a much higher number, and that's what
12 you need to design your roof for. And that's liquid
13 water. So you need to show that the roof can be
14 designed for that. And I think that's probably going
15 to be a higher load in a lot of situations than the
16 snow load.
17 MEMBER WALLIS: Chi over Q.
18 MR. SMITH: Okay, one of the things we
19 looked at on /Q was to, especially for an early site
20 permit, you know, you don't have a design chosen, or
21 an exact location for the plant within your site.
22 Basically you define an area in which the building
23 would be located, and then you - what we thought was
24 a conservative approach that says a release could
25 occur at any point within that. So you take the

1 closest point from the corners of that to your site
2 boundary, and you don't take any credit for building
3 lake effects, et cetera. So that gives you a /Q that
4 - and it turns out not to be actually that much
5 conservatism to it, not a great deal, but it gives you
6 a little bit more conservative /Q so that when you
7 come up with that for your site, then regardless of
8 the selection of the actual design, or the building
9 locations, or the precise point in that building where
10 the release might occur, you've got a bounding set of
11 /Q's for your analyses.
12 MEMBER SIEBER: But that's only applicable
13 when you're looking at the site boundary.
14 MR. SMITH: Correct.
15 MEMBER SIEBER: /Q within the site, for
16 example, shielding the control room, or intake through
17 ventilation ducts is an altogether different thing.
18 MR. SMITH: Altogether different thing and
19 that's basically -
20 MEMBER SIEBER: Not affected by this.
21 MR. SMITH: Right, and that's basically -
22 that necessarily is deferred until a COL, because you
23 can't do that until you know the site's geometry of
24 the structure. Correct. But for the off-site effects
25 at the site boundary and beyond, I think you can use

1 this fairly simplified and conservative approach, and
2 it really, as I say, it doesn't even add that much
3 conservatism, but it makes life a little easier than
4 trying to hypothesize, you know, various locations for
5 the building before you know them. So I think it was
6 a good approach to doing that analyses, and having it
7 then carry over hopefully directly into the COL, so
8 you can just say that's the /Q for the site for any
9 plant that's located there.
10 CHAIRMAN POWERS: This next one, I am so
11 happy you brought this next item up. It has escaped
12 me, but this is one we need to discuss, and I'm
13 grateful to get your opinions on this.
14 MEMBER SIEBER: Well, everybody knows that
15 internet data is never wrong.
16 CHAIRMAN POWERS: But the difficulty is
17 this. This is a problem, I mean an issue that's just
18 going to become more and more pervasive as time goes
19 on.
20 MR. SMITH: Yes. Again, there really is,
21 just as we say, some guidance clarification here
22 really would be helpful. You know, certainly we all
23 use the internet all the time, and you know I think as
24 you say, it's a source of a lot of very useful
25 information. And you know, for many types of

1 information I think a reasonable documentation of
2 exactly where and how you got the data and so forth is
3 again, depending on what you're using it for, is
4 probably okay. But you know, some guidance on when
5 it's appropriate to use it, and when you have to go
6 back and get certified data versus simply documenting
7 where that internet data came from, really just to
8 avoid confusion or later on finding out that you
9 relied too much on the internet, et cetera, would be
10 helpful.
11 CHAIRMAN POWERS: I can't endorse what you
12 say more. There's got to be some sort of guidance on
13 this because the internet's going - internet sources
14 of data, the Google sources and things like that, are
15 just going to become more and more important, and more
16 used all the time. And the problem is retrievability.
17 In 20 years, can I go back and get that same data set
18 and look at it. And that's really up in the air. I
19 just don't know the answer to that. I think it's a
20 problem for the NRC period, not just the ESPS or the
21 COLs or anything else. It's just a problem. It's got
22 to be dealt with.
23 DR. PRESCOTT: This is Paul Prescott of
24 the quality branch again. Yes, from a quality
25 assurance standpoint we were very interested in this.

1 As a matter of fact it was one of the open items that
2 we had on all three applicants. And we went to OGC
3 and got an answer. And the answer, to be honest with
4 you I didn't like the answer, but we had to live with
5 the answer because we were pushing for guidance on
6 this. Essentially the response came back from OGC
7 that it's up to the staff to make the determination of
8 whether or not they felt that the internet data that
9 they got was adequate. We were looking more from,
10 again, from a quality assurance standpoint that, you
11 know, if it's going to be used for safety significant
12 - potentially safety significant data or parameters
13 for SSEs at a future date, that there be some kind of
14 certification as what you would normally see for legal
15 documents, for any data that's used in legal
16 documents. And we were hoping more for guidance along
17 those lines. But anyway, we did get guidance on that,
18 and applied it as we could.
19 CHAIRMAN POWERS: Well, I mean it seems
20 like you're only halfway there. Seems to me the
21 Office of General Counsel has thrown the ball back
22 into your court, and says, okay, you make the
23 judgment, staff, you make the judgment, and they're
24 inviting you to set up the criteria. And it seems
25 like you've hit upon the issues there. Is that if I

1 get data over the internet, I'm going to use it in the
2 future for something that's safety significant, I've
3 got to be able to go look at that data again. It's
4 got to be retrievable, and it's got to be
5 reproducible, and it's got to be scrutable. I mean,
6 it seems like they've just tossed the ball over to you
7 to do something about it.
8 DR. PRESCOTT: Yes.
9 MEMBER SIEBER: I think another way to
10 deal with that, though, is to treat it as though the
11 internet wasn't there. Then you would be forced to go
12 to the scientific library or standards institute or
13 something like that to gather the data. That's when
14 you use the internet, when you know what the source
15 already is, and you know it's a reputable source and
16 reputable data. Then you use the internet to capture
17 the numerics of that I think is fine.
18 CHAIRMAN POWERS: Yes, but the problem is
19 -
20 MEMBER SIEBER: Search for stuff, you can
21 get good stuff and bad stuff.
22 CHAIRMAN POWERS: What you're talking
23 about is correct now as we speak today. But there's
24 this movement going on within the technical community
25 that goes by various names, sometimes it's web

1 publication, sometimes it's called self-publication.
2 MEMBER SIEBER: Right.
3 CHAIRMAN POWERS: In which there's not
4 going to be an archival source, but it's only going to
5 be on the internet. That's the only place you will
6 find these publications.
7 MR. HARVEY: Can I make a comment? Brad
8 Harvey with the staff again. I know a case in at
9 least climatology, if there are any references that I
10 cited from the internet I put them in ADAMS. And so
11 all my references, they were either publicly available
12 in hard copy, or if it came off the internet there's
13 a copy of what that webpage looked like within ADAMS.
14 CHAIRMAN POWERS: And that may be a useful
15 way to approach the problem. The applicant can say,
16 okay, I'll take this as I see it on the screen and do
17 something with it that's archival in nature.
18 MR. SMITH: And that's generally what we
19 did. It's just better guidance and understanding of
20 that I think is - all I'm saying is we need to better
21 understand as a technical community how we rely on the
22 internet or don't, when we have to get certification.
23 You know, it's one thing if it's safety significant.
24 It's perhaps a little different if it's strictly for
25 environmental. But in either case, you have to have

1 some assurance of the quality of the information.

2 MEMBER SIEBER: And hopefully every

3 licensee will recognize that, because that's not

4 clearly stated in the rules.

5 CHAIRMAN POWERS: And that's the problem.

6 MEMBER SIEBER: And that's something that

7 needs to be addressed.

8 CHAIRMAN POWERS: This is an issue that

9 just, you just have no idea. This movement on

10 publishing only on the internet is getting to be very

11 strong because of the cost and the delay of

12 publications. The sponsoring agencies are not

13 providing adequate funds to publish in the archival

14 literature. The archival literature is getting very,

15 very long lead times for doing things. And if it's

16 useful information, it's the only information that

17 exists, why shouldn't we use it? And eventually all

18 journals are going to be electronic.

19 MEMBER SIEBER: Sooner or later.

20 CHAIRMAN POWERS: The reason that page

21 charges are so high is it costs a lot of money to

22 print things on dead trees. And whereas it costs very

23 little to print. it on electrons. Interesting

24 concept. And it's just going to grow and grow and

25 grow. I mean, libraries are becoming things of the

1 past.

2 MEMBER SIEBER: They're becoming

3 electronic.

4 CHAIRMAN POWERS: They're becoming

5 electronic beasts. And therefore, hackable,

6 changeable, destroyable.

7 MEMBER SIEBER: Yes, it disappears.

8 CHAIRMAN POWERS: Yes. Well, I mean the

9 most insidious thing is to go in and change a few

10 critical numbers and leave no footprint. Now what do

11 you do? I mean, you could well imagine. Suppose you

12 put a number you got from an internet site, somebody

13 hacked in and changed those numbers and said you wrote

14 down the wrong number. See, it's changed. Those are

15 the kinds of issues that have to be addressed.

16 MR. SMITH: But Again, we just bring it up

17 as something, and I think it applies more broadly than

18 just early site permits.

19 CHAIRMAN POWERS: Yes, it is much broader,

20 and I really appreciate you bringing it up. It's one

21 that's just going to have to be addressed.

22 MEMBER SIEBER: And it goes far beyond

23 this application.

24 CHAIRMAN POWERS: Yes. It's pervasive to

25 all technical disciplines right now.

1 MR. SMITH: The final one I have down here
2 is, again it's not per se the internet issue, but just
3 sources of site information. An example of this was
4 on that data we ended up going back and, you know,
5 North Anna is located relatively close to Richmond,
6 but there's another station at a higher elevation than
7 North Anna. And one of the RAIs from the staff was
8 to, well gee, if you're looking at, you know, maximum
9 winter freezing that could occur, it's more
10 conservative to base that on, you know, in other words
11 North Anna is at elevation between that of Richmond
12 and somewhere in Piedmont, probably a little closer to
13 Richmond's elevation. But an RAI came in, well let's
14 go look at this sediment data. Gives you a little
15 more degree cooling days than Richmond. Okay, not an
16 unreasonable thing to do, but you know, it would have
17 been far better for us and the NRC if we could have
18 agreed on that, and understood that before we did it,
19 rather than, well gee, we based it on Richmond.
20 Richmond is not conservative enough. Let's go look at
21 another weather station.
22 MEMBER SIEBER: Yes, but you have your own
23 towers there.
24 MR. SMITH: We do, but -
25 MEMBER SIEBER: Why not use your own data?

1 MR. SMITH: Because you're looking at a
2 longer historical record. In other words, you know,
3 we have only got those towers there for 30 years or
4 so, and you know, you need, you know, the full U.S.
5 MET station data set over as long of an historical,
6 you know, a longer historical period. Like you say,
7 there's changes and so forth that occur, and you don't
8 want it too narrowly.
9 MEMBER SIEBER: But then the accuracy of
10 that is important. You could go to the Richmond
11 airport and get. They've probably been doing it there
12 for 75 years.
13 MR. SMITH: Well, we did. And that's
14 exactly where we went. But you know, Richmond airport
15 is a few feet lower elevation, and you know, I would
16 say -
17 MEMBER SIEBER: Three degrees, 1,000 feet.
18 MR. SMITH: Yes.
19 MEMBER SIEBER: All we have to do is
20 apply.
21 MR. SMITH: We could probably have done
22 that, but what the NRC asked us to do in fact was to
23 look at another MET station that was a higher
24 elevation than North Anna versus taking the Richmond
25 data and making some adjustments. So there are

1 different ways that you could approach this, it would
2 have just been, you know, obviously better on both
3 parts if we could have, you know, understood better
4 going in. And as I say, heading into a COL, I think
5 that's even more important. So you know, if you're
6 going to be developing a COL application, and you're
7 going to be talking about, you know, what is your
8 maximum winter degree cooling days if you will, I
9 think you want to know in advance, you know, which MET
10 station you want to use, or if you're going to use one
11 that's a few feet lower than the site that you have,
12 as you say, you make the three degrees per thousand
13 adjustment and you're done. But I think that would
14 all, you know, it would be more helpful if that kind
15 of thing could be discussed and worked out ahead of
16 the application being filed.
17 CHAIRMAN POWERS: This is well ahead.
18 This is well ahead of the application being - I mean,
19 it should precede doing an awful lot of work.
20 MR. SMITH: Yes. Right.
21 CHAIRMAN POWERS: I mean, what you're
22 bringing up is we need a pre-pre-application phase
23 where we can sort some of these things out is what
24 you're saying.
25 MR. SMITH: Well, either that, or you know

1 like I say, have a little more -

2 CHAIRMAN POWERS: Some clarification, some

3 way to find out.

4 MR. SMITH: Right. Some way of knowing

5 before you go do this, you know, how do you make these

6 adjustments, or you know, how do you bound it, how do

7 you look at it.

8 CHAIRMAN POWERS: I think it's a terrific

9 point.

10 MR. SMITH: Again, we agree that we came

11 up with a reasonable approach, it would have just been

12 probably better if it had been done earlier.

13 CHAIRMAN POWERS: Yes, but you can easily

14 forecast coming up with an agreement that you'd done

15 an unreasonable approach.

16 MR. SMITH: True.

17 CHAIRMAN POWERS: In which case it would

18 have been a huge amount of work on everybody's part.

19 I think it's a terrific point.

20 MR. SMITH: Okay.

21 CHAIRMAN POWERS: Any other questions

22 posed here? I really appreciate these points. These

23 were really great.

24 MR. SMITH: Thank you.

25 MEMBER SIEBER: Appreciate it.

1 CHAIRMAN POWERS: I think we can stop for
2 a break here for - do we have a 15-minute break? Why
3 don't we return at 3:15.
4 (Whereupon, the foregoing matter went off
5 the record at 2:59 p.m. and went back on the record at
6 3:17 p.m.)
7 CHAIRMAN POWERS: We are going to continue
8 our discussion of the lessons learned in the early
9 site permit process. And George, you're going to
10 continue us on?
11 MR. ZINKE: Yes, and I will, like Marvin,
12 try to skip things that we've already talked about.
13 CHAIRMAN POWERS: Well, don't skip them -
14 don't hesitate to put your particular spin on things.
15 MR. ZINKE: I thought it'd be beneficial
16 on the - of how we looked at lessons learned relative
17 to how we look at the early site permit and the
18 project. And for Entergy we had specific purposes for
19 doing an early site permit that then gets
20 characterized into lessons learned that up front, you
21 know, prior to the submittal in 2003, several years
22 before that when we made the decision we recognized
23 that the state of the licensing process at that point
24 in time, which this many years later we may have
25 forgotten what it really looked like then.

1 CHAIRMAN POWERS: Yes, sure.

2 MR. ZINKE: But that's - so our lessons
3 learned are relative to that. And then some of the
4 things that, you know, that was all inherent to the
5 ESP project because we felt that anything that we
6 would learn or develop or experience would be directly
7 applicable to any other ESPS and to any COL that we
8 would prepare. So we also wanted to capture all of
9 the lessons learned for the pre-application, post-
10 application, safety, environmental. And I understand,
11 you know, if we're here we're only talking about the
12 safety side, even though for us we ended up more
13 lessons learned in environmental than we probably did
14 in the safety.

15 CHAIRMAN POWERS: Yes, it's been a
16 practice for the ACRS to focus mostly on the safety
17 and less on the environmental. But we're not opposed
18 to listening to what you might have learned,
19 especially if you think we'd learn something from it.

20 MR. ZINKE: Yes, I might cross over a
21 little bit into areas when I think it'd be beneficial
22 to talk about it.

23 CHAIRMAN POWERS: Please do so.

24 MR. ZINKE: Entering into - in the next
25 slide, entering into this process in preparing early

1 site permits we had certain expectations that again
2 the lessons learned are focused around. Up front we
3 wanted to have high quality submittals, and we
4 recognized to have that we also wanted timely
5 preparation of an application, which that presumed
6 some things would exist that we recognized did not
7 exist. We wanted to be able to have a fixed
8 application content, that everybody would know exactly
9 what goes into an application, and it doesn't change
10 from application to application from year to year. We
11 wanted to know what the NRC acceptance criteria for
12 everything that we were going to put in the submittals
13 would be. We wanted everything to be consistent with
14 regulations, and everything focused on public health
15 and safety. That was our expectations. We wanted to
16 end up with a stable and predictable licensing
17 process, and we expected to have some kind of
18 reasonable schedule supportive of business needs.
19 So when you look at our lessons learned in
20 the context of these things, you know the first one
21 that I'll mention before I go to the next page in the
22 last, you know, it's three years now, and we still
23 don't have a permit. We are here today looking at
24 lessons learned, but that's a major lesson learned for
25 us of three years, no permit on a site that was

1 already approved to have another plant. And when you
2 step back and look at that, and you defend that to
3 your CEOs, it becomes real hard to defend of why does
4 it take so long to approve something or say
5 something's okay that years before everybody had
6 already said was okay.
7 A number of the lessons learned we'll talk
8 about. We call them lessons learned, but it was also
9 things that we knew up front going into. So it wasn't
10 surprises, it was things that we knew the situation
11 existed, and unless you turn in an application, the
12 situation will never change. So we get into some
13 examples of what I call lessons learned, but in the
14 NRC guidance documents RS-002 was developed by the
15 NRC, and we appreciate that, and that's good. What we
16 may forget is that by the time RS-002 came out our
17 applications were already written. The only thing we
18 were waiting for was the completion of the seismic.
19 So you know, in hindsight had an RS-002 been out there
20 our applications would have looked different. But it
21 didn't look out, and we made a decision not to delay
22 submittal by going back and trying to review and see
23 where we needed to supplement. But, again, we knew
24 that up front. But that still ends up a major lesson
25 learned that I think that the staff has done much

1 better in the COL area. The same situation exists -
2 MEMBER WALLIS: Can I ask you there, you
3 do make this application and then out comes the
4 guidance.
5 MR. ZINKE: Actually the guidance came out
6 before we submitted it.
7 MEMBER WALLIS: Do you find there's very
8 much inconsistency, or was the guidance pretty well in
9 line with what you expected? Presumably you didn't go
10 back and revise it because you decided it was good
11 enough.
12 MR. ZINKE: In history what we did, when
13 we started the couple of years before the application
14 went in, starting to prepare. We touched, you know,
15 we got with the NRC -
16 MEMBER WALLIS: You had some verbal
17 guidance.
18 MR. ZINKE: - had a lot of pre-application
19 interactions. So we brought up with the NRC those
20 areas that we thought we needed guidance, and we had
21 good pre-application interactions that in one way
22 substituted for not having the guidance. So we had
23 some indications on certain technical areas. But
24 there were some areas that we missed, and we didn't
25 find out until after the RS-002. So it was a

1 substitute way of approaching it. And then we had
2 prepared our application, we were waiting on seismic.
3 RS-002 came out I think a few months before we
4 actually submitted, and we didn't change anything
5 during those few months and went ahead and submitted
6 it.
7 MEMBER WALLIS: You didn't suffer because
8 you didn't change anything?
9 MR. ZINKE: No.
10 MEMBER WALLIS: So the guidance was pretty
11 well conforming to what you expected?
12 MR. ZINKE: Yes.
13 MEMBER WALLIS: Okay.
14 MR. ZINKE: So it's -
15 MEMBER SIEBER: They ended up with a cow
16 instead of a horse. Right?
17 CHAIRMAN POWERS: Camel instead of a
18 horse.
19 (Laughter)
20 MR. CESARE: George, this is Guy Cesare
21 with Entergy and Enercon. The two issues I might add
22 to that would be the RS-002 did not recognize the PPE
23 approach, so that made it - there were issues that
24 were dealt with in pre-application, like Part 100 does
25 calculations that made it a little more challenging,

1 but the fact that RS-002 did not address it didn't
2 really hurt us any. And the other was emergency
3 planning, which we thought the day would be carried by
4 0654 Supp 2, and you've already talked about how that
5 played out. So those were two places I think where
6 RS-002 might have fallen a bit short, but we worked
7 around it.
8 MR. ZINKE: But in one important way that
9 this plays out then is that for our COL, which has the
10 same situation that we need the guidance out there,
11 the staff recognized that much earlier than for the
12 early site permit, and has put a staggering amount of
13 resources in working on that. Which is really good.
14 CHAIRMAN POWERS: To a certain extent I
15 think the early site permit process snuck up on
16 everybody that was kind of diverted off looking at
17 license renewal. So, recognizing we're talking in
18 time frames where decades are units of time measure,
19 this was kind of an abrupt thing.
20 MR. ZINKE: That's right. And who would
21 have thought that we'd be where we are today with so
22 many companies interested.
23 CHAIRMAN POWERS: That's right. That's
24 right. And in the face of this, again, I give you
25 guys just all the credit in the world for having

1 produced such good applications in the face of
2 uncertainty. Uncertainty. So you know,
3 congratulations again.
4 MR. ZINKE: The other area in the NRC
5 guidance documents that were, again, things we thought
6 we would come across, we did, but didn't get changed
7 for early site permit, but is being changed for COL is
8 that there's a number of guidance that was only
9 applicable during early siting efforts. And since no
10 nuclear plants were built for so many years, kind of
11 lay stagnant. And then there were some areas that
12 were brand new on the other side for which some of the
13 guidance was either out there or was untested like in
14 the seismic area. So both of those presented
15 challenges that the lesson learned out of that that's
16 being implemented for the COL area is the reg guides
17 are being looked at, the SRPs are being looked at,
18 revisions coming out. So again, that's a lesson
19 learned that will help the COL effort, but it was out
20 of the ESP effort.
21 Quality assurance is, and the Part 21 that
22 was mentioned earlier. This is an area that one
23 lesson learned is that sometimes we talk past each
24 other.
25 CHAIRMAN POWERS: Gee, I can't imagine

1 that ever happens.

2 MR. ZINKE: So both in the QA and the Part

3 21 area, this is still an area that we are tending to

4 talk past each other that it has, part of the

5 industry's problem with the QA and the Part 21 for

6 early site permit was not so much a legal issue of is

7 it applicable or not, but it was some practical

8 problems of how do you do it, given some strange

9 things about an early site permit being just siting

10 things, and particularly an early site permit that's

11 looking at parameters where you haven't specified a

12 design. So when you carried that through in both QA

13 and Part 21 space, the practical says, well, QA says

14 you have a list of what your safety-related components

15 are so that you can see their relationship throughout

16 all these processes, and their relationship to the

17 site. But if you don't have that it becomes much more

18 difficult to implement certain aspects of a QA that

19 you would - at least in a way that you would

20 traditionally think about. Same way with the Part 21

21 that, you know, we understand the importance of the

22 concept of Part 21 in reporting and looking for things

23 that might affect safety, but the practical

24 implementation of the Part 21, given the way the

25 rule's actually written, you end up in a problem

1 because again you don't have a design, so what could
2 affect safety isn't defined. You end up with a
3 practical problem in implementation. So the solutions
4 for this were the lessons learned still don't match
5 the problem, because most of the solutions so far
6 coming out have to do with the rule changes to make it
7 applicable, both QA and Part 21, to the ESP processes,
8 which doesn't address the practical problems of how do
9 you make it work if all we do is just say, well now
10 we're going to make this applicable. So we will
11 continue to have conversations to try and come to some
12 real resolution on how do we get to where we need to
13 be.
14 CHAIRMAN POWERS: You really need some
15 sort of guidance on how you do what's being required
16 of you in an ESP context.
17 MR. ZINKE: Yes.
18 MEMBER SIEBER: Actually, there are some
19 obvious applications of both Part 21 and QA. For
20 example, the safety of the plant relies in one aspect
21 on its seismic design. Part of site characterization
22 is things like doing bore holes, and analyzing the
23 subsurface, and obviously that's a product that's
24 subject to defects, and should be subject to QA, and
25 should be reportable if you make a mistake. And so

1 the aspects of the ESP that formulate how you're going
2 to design the safety-related portions of the plant to
3 me are pretty clear.
4 MR. ZINKE: And there are parts of the ESP
5 that are much clearer in that area than some other
6 parts.
7 MEMBER SIEBER: Yes, there's, you know,
8 counting the trees and that kind of stuff is
9 different.
10 MR. ZINKE: Emergency preparedness, I
11 think we talked about that. We don't really have
12 anything more to add. We took the minimal approach
13 which was a balance between trying to figure out what
14 things in the emergency preparedness area that we
15 thought we would have to do over again, even if there
16 was some finality associated with it. So it was a
17 struggle for us to figure out, well, we didn't just
18 want to put things in the application for bigness'
19 sake if we thought we were going to have do them over
20 again. And that was the major feature. That was our
21 struggle with, well what is a major feature. And we
22 understood the staff's - after we submitted and had a
23 lot of discussions, we determined what the staff's
24 definition of major features were.
25 The real lesson learned or the, I don't

1 know if the benefit that we saw coming out of the
2 early site permit was working with the staff in
3 developing what a full and integrated plan submittal
4 would look like.
5 CHAIRMAN POWERS: Oh, I see.
6 MR. ZINKE: Because what came out of that
7 was something that looked like to us might have
8 actually, had we had that two years earlier, that
9 knowledge, we might have gone that way instead,
10 because it was things that - the reasons we had for
11 not going that way were things that the staff had
12 figured out, well those would be ITACs, and we said
13 well we had decided we won't go that way because this
14 is information we wouldn't have. So again, it was one
15 of those things -
16 MEMBER WALLIS: So you already have a
17 plant there?
18 MR. ZINKE: We already have a plant there,
19 yes.
20 MEMBER WALLIS: You already have emergency
21 preparedness.
22 MR. ZINKE: Yes.
23 MEMBER WALLIS: What needs to be added for
24 this?
25 MEMBER SIEBER: Well, there are things

1 that are different. For example, part of your EPP is
2 a classification scheme. That depends on the plant
3 design. On the other hand, you know, the warning,
4 what you do at unusual event site area, alert and
5 general is the same regardless of what the plant is.
6 And the warning system is the same.
7 MEMBER WALLIS: Right.
8 MEMBER SIEBER: And so a lot of it is need
9 not be repeated, but perhaps referenced. But there
10 are some parts of it that are plant-specific.
11 MR. ZINKE: Some of the things that we
12 struggled with that led to our decision not to go that
13 way prior to any discussions with the staff about what
14 a way of doing it were the pieces of the emergency
15 preparedness that deal with the off-site, the state
16 agencies and the local agencies, their emergency
17 plans. Because we didn't want to try to initiate them
18 in revising their plans when we hadn't even made a
19 decision to build yet. And so trying to think that
20 through, you know, three years ago, four years ago,
21 led us to try to go through the major features.
22 MEMBER SIEBER: But their plan won't
23 change.
24 MR. ZINKE: Yes, it will.
25 CHAIRMAN POWERS: It would have to.

1 MEMBER SIEBER: Why?

2 MR. ZINKE: Because their plans are
3 specific to have things like phone numbers of who they
4 would contact, the organization, the plant names.
5 There are things about their plants that won't change,
6 but there are things that actually will change in the
7 plans.

8 MEMBER SIEBER: You probably already have
9 a provision to update the phone numbers and that kind
10 of stuff on a regular basis?

11 MR. ZINKE: For? In our case, dealing
12 with Mississippi and Louisiana, getting changes to
13 those plans, even minute, is ....

14 MEMBER SIEBER: A challenge.

15 MR. ZINKE: Is a real challenge, and we -

16 MEMBER WALLIS: But you can't do that now,
17 so.

18 MR. ZINKE: Right.

19 MEMBER WALLIS: Why worry about it?

20 MR. ZINKE: But that was why we went down
21 the road we did.

22 CHAIRMAN POWERS: Yes, okay.

23 MEMBER SIEBER: I'm still struggling a
24 little bit over this, and I've had an offer of some
25 clarification here.

1 MR. BARSS: Thank you. Dan Barss again,
2 senior emergency preparedness specialist. I wanted to
3 make sure that you the subcommittee understood the
4 staff's, I guess, position on understanding the first
5 three ESPS and where we're heading in the rulemaking
6 that's been put forward and the guidance that we're
7 developing now. Two years ago we looked at the
8 regulations as written and RS-002 which led us to
9 Supplement 2, and basically if I could draw a mental
10 bar chart, if you came in and took NUREG-0654 which
11 lays out the 16 planning standards and expands I think
12 to 190-some criteria, line items criteria. If you
13 came in with 20 percent of them and said we want major
14 features, and here's 20 percent of the information you
15 need. And if another applicant came in with 40
16 percent, and another one came in with 60 percent, and
17 another came in with 80 percent, okay, all asking for
18 a major features plan, each describing a different
19 amount of information or different criteria, the
20 staff's position was that Supplement 2 set a line that
21 said you had to meet this let's say it was 45 percent.
22 If you came in with 40 percent, you didn't meet that
23 bar, you couldn't get that major feature. If you came
24 in with 80 percent, you had excess, which we really
25 didn't care about because it was more than we could

1 provide because we were only looking at a description
2 of the plants at that point as we understood
3 Supplement 2 at that point in time.
4 The lessons we've learned is that you can
5 come in with 20 percent, or you can come in with 80
6 percent and get a major feature, either with 20
7 percent or 80 percent. You'll get a different part of
8 the major feature, or different things you're
9 describing. So there is a continuum that could be
10 allowed. The staff's view of the 45 percent was I
11 guess in hindsight we believe it was the right thing
12 from the guidance and the regulation as written, but
13 going forward we don't think it's the right thing. We
14 think there is a broadened spectrum that the applicant
15 should be able to address. And that's what we've
16 attempted to address in the rulemaking that's gone
17 forward, and the guidance needs to be revised to
18 recognize that, that an applicant could come in and
19 say, you know, take the 16 planks. I want to address
20 Number 2 and Number 14, and that's the only ones I
21 want to get, we could do that. Somebody else could
22 come in and say I want everything but Number 14, and
23 I'm going to give you all the information you need
24 now, or Number 4, which is the EAL it's the
25 classification.

1 MEMBER WALLIS: When he has an existing
2 plant, doesn't he have 40 percent already or more?
3 MR. BARSS: Potentially, yes.
4 MEMBER SIEBER: But he has to give it to
5 them.
6 MR. BARSS: Yes.
7 MEMBER SIEBER: Or they didn't give him
8 credit for extra credit, or do give extra credit, it's
9 either pass or flunk. Now they're giving extra
10 credit.
11 CHAIRMAN POWERS: But I'm still - it seems
12 to me that at the ESP stage you really honestly want
13 to know is there any major impediment to creating an
14 emergency plan. At the minimalist level, is there any
15 major impediment. In other words, is there some
16 reason to think that I can't set up an emergency
17 preparedness zone. Is there some reason to think that
18 I cannot get the state to cooperate with me. Is there
19 some reason to think that emergency evacuation times
20 are going to be heroic. That's really what you want
21 to know.
22 MR. BARSS: And that's what 52.17(b)(1),
23 that's the minimum to get an early site permit. And
24 that does not invoke 52.17(b)(2)(I) or (2)(ii) which
25 are the major features or the complete and integrated

1 plan. That's where the applicant has the option. You
2 can just submit an early site permit, and you can do
3 as you said, show there's no significant impediments
4 and that the state and locals have agreed to play with
5 us and to develop the emergency plans. With that
6 information, you can get an early site permit. The
7 only thing you're getting at that point in time is
8 approval from us that there's no significant
9 impediments. But there is no planning done at that
10 point in time.
11 CHAIRMAN POWERS: Yes, and that may well
12 be what I want. I mean, I can see.
13 MR. BARSS: That you can get. There's no
14 planning developed, but you can get that. But then
15 what is left to the applicant to choose is if you want
16 the major features or the complete and integrated
17 plan, you can invest the time and the money and the
18 resources to say here's the plans that I think I can
19 implement. And if you think you have enough to give
20 us the complete and integrated, you can go that route
21 and get the reasonable assurance based on that, or you
22 can give me what pieces and parts you think you now
23 have and get that. If you came in and say you
24 excluded the Criteria Number 4, which is the emergency
25 classification, you could get major features on

1 everything else, but you couldn't get classification
2 schemes if you didn't know what you're EALs are going
3 to look like today. And if that's the case, you could
4 get major features approval for pretty much all of
5 that stuff, but you could not get a complete and
6 integrated plan until you provide me the last piece,
7 which would be the EALs or the classification scheme
8 that the state agrees to and we agree to as being
9 complete.
10 CHAIRMAN POWERS: To the extent you wanted
11 to clarify things for me you've succeeded.
12 MR. BARSS: Okay, good.
13 CHAIRMAN POWERS: George?
14 MR. ZINKE: The next problem we had
15 lessons learned was electronic submittals. And that
16 was just extremely difficult. We're still working
17 with the staff to try to come up with how to
18 electronically submit. And hopefully by the time we
19 get -
20 CHAIRMAN POWERS: You're not alone. I
21 have tried to electronically submit things to this
22 organization and find that it defies my ability
23 anyway.
24 MEMBER WALLIS: Getting anything sent back
25 to you.

1 MEMBER SIEBER: Yes, that's where the
2 problem is.
3 MR. ZINKE: Yes. Or calling and saying
4 they can't accept this, and pre-flight compatibility
5 problems, and Acrobat versions, and a lot of lessons
6 learned in that area.
7 CHAIRMAN POWERS: Well, in fairness to
8 people that operate computer systems here, I think
9 this file transfer protocols and whatnot just haven't
10 been stabilized very much.
11 MEMBER SIEBER: Well, they've stabilized
12 on the wrong stuff.
13 CHAIRMAN POWERS: Maybe that's the answer
14 is that we're stabilizing on BetaMax instead of Sony
15 or something like that.
16 MR. ZINKE: So, the major lesson learned
17 out of that is we just have to continue to work real
18 close to the staff. Because it certainly isn't a
19 simple process yet. But it's - improvements are being
20 made.
21 Next item, a permit template. Our vision
22 of what was going to occur and what has occurred is
23 different. We felt that a draft of what the actual
24 permit looks like should have come to the ACRS, should
25 have come to the ASOB, should have kind of accompanied

1 the final SER and the final EIS, and we still don't
2 know what the actual permit's going to look like. We
3 just - that just -
4 MEMBER WALLIS: Isn't it just a little
5 card with your picture on it which says you now have
6 a permit?
7 (Laughter)
8 MEMBER SIEBER: Can't drive at night
9 without an adult present or something?
10 MR. ZINKE: And that's, you know, having
11 lived with what the exact words that come with a
12 license, an operating license, we felt that's an
13 important - what the actual words that go into the
14 permit really are kind of fundamental, and we just
15 believe the process as it exists today.
16 MEMBER SIEBER: You still don't know, do
17 you?
18 MR. ZINKE: No, we don't know.
19 MEMBER WALLIS: You'll know when you get
20 it, right?
21 MR. ZINKE: Yes, and then because then
22 that becomes important, the question you asked which
23 is real good of well does this get incorporated by
24 reference. What gets incorporated? We don't know.
25 We don't know how the conditions, what are they going

1 to look. The lesson learned right now is that we just
2 don't think is the way it ought to be.
3 CHAIRMAN POWERS: You must have a pretty
4 good idea of the conditions.
5 MR. ZINKE: We think we do. Until you
6 actually see how they're presented in the permit. We
7 know the technical kinds of things.
8 CHAIRMAN POWERS: I mean, that's always
9 going to be the case. Somebody's going to parse the
10 language probably more deeply than it was ever
11 intended to be parsed, and it's going to change a word
12 here or there.
13 MR. ZINKE: We just felt, and we still do,
14 that it's - if that's what you're going for.
15 MR. ARAGUAS: George, I want to chime in.
16 I think you do have a pretty good representation as to
17 what will go in the permit as far as terms and
18 conditions. If you look at Appendix A to the FSERs
19 you'll see there what the site characteristics staff
20 has approved as well as the permit conditions that
21 will go on the permit itself. So those you can count
22 on, as well as the bounding PPEs that will go on the
23 permit.
24 CHAIRMAN POWERS: I thought - I mean, in
25 putting down my notes, I said, gee, I thought the

1 staff did a bang-up job making very clear what it's
2 COL action items were, and its permit conditions were.
3 I mean, they highlighted, they put them in the front,
4 and things like that. The precise wording, I assume
5 that goes through a concurrence process that changes
6 things here and there, but the general area is pretty
7 well specified. I mean, that's not going to change.
8 It's going to be -
9 MR. ZINKE: I think we would have less
10 consternation if there was one out there.
11 CHAIRMAN POWERS: Sure.
12 MR. ZINKE: Because then you could say
13 well ours is going to kind of look like that.
14 CHAIRMAN POWERS: That's the problem of
15 going first.
16 MR. GRANT: George, if I might jump in
17 just a bit. Eddie Grant again with Exelon. The staff
18 did a much better job on the safety side of
19 identifying what the proposed permit conditions and
20 action items are. One real concern is the
21 environmental side. Environmental finality has been
22 an ongoing continuing discussion that we still don't
23 have the final result of. And again, as you said, the
24 actual wording that might go there, is it going to be,
25 as George indicated, the permit gets incorporated? Is

1 it incorporated by reference? Is it just referenced?
2 Is it - there's much more detail and finality on how
3 to deal with a DCD than there is with how to deal with
4 an ESP. There's a good chance that some of that is
5 going to be incorporated into the permit, and as
6 George says, we don't know what it's going to say. So
7 we're very concerned about that. We just don't know
8 what we're getting.
9 CHAIRMAN POWERS: That may be a
10 consequence of going first.
11 MR. ZINKE: And Eddie's right that on the
12 safety side we have a much better idea. So this is
13 one of those that is kind of outside your scope
14 because it's really on the environmental side that is
15 our most uncertainty.
16 CHAIRMAN POWERS: Yes, ACRS is - just as
17 to keep our work scope practical has kind of avoided
18 the environmental side because we don't purport to be
19 environmental experts, and so we don't delve into
20 that. I mean, I'm happy to note this down and
21 communicate it to the Commission, but I can't say very
22 much about it.
23 MR. ZINKE: We've talked some about plant
24 parameter envelope. I didn't really have anything to
25 add to that. Put down here ACRS review process. The

1 first time that we met with the ACRS subcommittee, we
2 really did not know what you wanted us to present.
3 CHAIRMAN POWERS: Neither did we.
4 (Laughter)
5 MR. ZINKE: I learned as Entergy because
6 I didn't have to be first. I got to come after you
7 had met with North Anna and Dominion.
8 CHAIRMAN POWERS: Well, George, I hate to
9 disappoint you, but you haven't learned anything,
10 because if you came in the next time, it'd be
11 different.
12 MR. ZINKE: It's lessons learned, so we
13 give you feedback and you can take it or not take it.
14 CHAIRMAN POWERS: I mean, to the extent
15 people are interested, the ACRS wants to hear what you
16 think we ought to hear. And then we'll decide what we
17 want to hear. But you did, by the way, in every case
18 you were superb. We loved your presentations.
19 MEMBER WALLIS: Part of your job is to
20 figure out what you need to tell us.
21 MR. ZINKE: Well, we did our best.
22 CHAIRMAN POWERS: And I think you did just
23 great. And in fact, I would say just across the board
24 everybody did great on their presentations. I had no
25 complaints from any of the subcommittee members on

1 what was presented to the ACRS. The level of detail
2 you went to was just about right, the scope was just
3 about right, the quality of the presentations was, I
4 mean, many of the members remarked on this, that it
5 was just very good.
6 MR. ZINKE: But as a feedback, when we
7 come before you with COL applications, it might be
8 beneficial if -
9 CHAIRMAN POWERS: Ain't gonna happen.
10 MR. ZINKE: That we talk a little bit
11 about what would you like to hear. Because I can
12 assume we're going to be talking about something huge.
13 CHAIRMAN POWERS: You can always talk to
14 the staff engineer, and he can give his best shot.
15 MEMBER KRESS: I guess I'll be interested
16 in what deviations you might have from the certified
17 design, and what action items were left to the COL
18 stage, and if any ITACs, what were they. You know,
19 it's that sort of thing. We don't want to go over the
20 whole certified design again, we just want to know how
21 you deviate from it.
22 MEMBER SIEBER: I think one of the issues
23 you have to understand our review process, while
24 you're trying to figure out what to tell us, we're
25 trying to read the application and the SER, and we're

1 trying to figure out what to ask you. And the chances
2 of that meeting -
3 CHAIRMAN POWERS: Is zero.
4 MEMBER SIEBER: - is zero, okay? And so
5 everybody gets a different kind of a situation when
6 they get here. On the other hand, the issues that
7 jump out get covered.
8 MEMBER MAYNARD: Well, I think that by the
9 very nature of our committee and our role, I think
10 it's going to be somewhat undefined. In fact, I think
11 we're wrong if we end up with a template where we're
12 always asking the same things of the same people. I
13 don't think that's consistent with our role. I
14 believe that we do owe it to the applicants that if
15 there's something specific we want them to address, we
16 need to let them know ahead of time.
17 CHAIRMAN POWERS: And we usually do.
18 MEMBER MAYNARD: I do think we owe them
19 that. But I think by the very nature of it it's not
20 always going to be the same thing.
21 CHAIRMAN POWERS: Similarly, we can and
22 often do ask for things that have nothing to do with
23 the licensing process itself. I mean, we go beyond
24 that because our job is to advise the Commission, and
25 among that advice is things that they needed to worry

1 about that they're not worrying about, or things that
2 they are worrying about that are a waste of time to
3 worry about. Whatever it is, again, your judgment,
4 your engineering judgment in this case was just
5 superb. So fear not, I'm sure you'll do great on the
6 COL as well.
7 MEMBER SIEBER: You'll do just as well.
8 MR. ZINKE: We will do better. And the
9 last thing I just need to -
10 MR. CESARE: George, Guy Cesare. Dr.
11 Powers, I first appeared before you in 1980 for the
12 initial license in Grand Gulf. I think this is the
13 first time this is going to happen. It's going to be
14 a difficult evolution for the review. All the things
15 you said certainly understand the nature of the
16 committee. If I felt that we didn't get feedback
17 timely enough, we could be better prepared I think,
18 just looking ahead. We presented Chapter 2 of the
19 FSAR to you. Now we have Chapter 1 through Chapter
20 19. It's a much broader scope. This item is give
21 some thought to us working with the staff engineer two
22 to three weeks, four weeks prior to on some treetop
23 areas, and we'll always be open to those other
24 interesting topics that you'll bring up that we didn't
25 prepare for.

1 CHAIRMAN POWERS: Like I say, you should
2 feel free to talk to the staff engineer. That's what
3 he's there for.
4 MR. CESARE: It's a much broader scope,
5 and hasn't been done in a long time.
6 CHAIRMAN POWERS: A long time.
7 MEMBER SIEBER: But the certified design
8 process helps you quite a bit because we will have
9 reviewed the generic design in quite a bit of detail.
10 And we will not need to go into every nut and bolt of
11 your specific plant design just those features that
12 are either items that need to be closed, or
13 differences between your plant and the standard design
14 that was approved. I think the process should be more
15 efficient even though it's not going to be short.
16 CHAIRMAN POWERS: I'm wondering, Jack, if
17 that's really true. Because my recollection is I'm
18 recalling a lot of the features of the APPLICANT-600
19 review, and I remember a lot of the thorny issues got
20 moved to the ITACs.
21 MEMBER SIEBER: That's right. Like the
22 important stuff.
23 CHAIRMAN POWERS: Yes, like the important
24 stuff.
25 MR. CESARE: And it is that dialectic

1 between us, the applicant and the reactor vendor that,
2 you know, what's final is final, and how we implement
3 it. So there's some thinking that might be valuable
4 to make that review most efficient, for our
5 preparation at least.
6 MEMBER SIEBER: Well, you should pay
7 attention to what your vendor says wasn't included in
8 the certified design, because that's where a lot of
9 the issues are going to be.
10 CHAIRMAN POWERS: They shifted an awful
11 lot of things in the ITACs that - in many cases they
12 get shifted because they were proving thorny in their
13 presentation to us.
14 MR. ZINKE: The last thing I just wanted
15 to, from Christian's presentation, just to correct for
16 the record, on the analysis, the late analysis on the
17 explosive hazards. I agree with your
18 characterization. You know, sometimes we put things
19 in the application, we'll write a lot, and sometimes
20 we'll write a little. And this was an area where we
21 wrote a little. The difference from what we said
22 before that I need to correct is that in our
23 application and in our original presentation we never
24 said we meant the reg guide. I mean, that was up
25 front from the beginning. And we really did

1 understand exactly what we presented and the
2 background, but we made a decision not to answer
3 questions based on the original submittal because of
4 schedule. If the questions had come up early, and we
5 could see that, well okay, we've got this much time,
6 and it's going to impact schedule, we probably would
7 have gone that way. But where the questions came in
8 the ACRS process we had to make a decision of, well
9 which is the quickest path to a resolution, and so we
10 decided to go that way, rather than trying to explain
11 what the original analysis was.
12 CHAIRMAN POWERS: Yes, well I'm kind of
13 glad you didn't, that you chose what you did, because
14 I liked that a lot better than I was going to like the
15 original analysis.
16 MR. ARAGUAS: George, just to clarify my
17 presentation, I didn't state that you guys were
18 intended to meet Reg Guide 191. It was our assumption
19 that you were attempting to meet 191. So I just want
20 to clarify, we understand that you did not in fact
21 submit under 191.
22 MR. ZINKE: Right. In either the
23 original. And that's our overriding lessons learned.
24 CHAIRMAN POWERS: Well, they're good ones.
25 They're good ones, every one of them. I still

1 struggle a little bit with the ACRS review process.
2 In truth, the guys that have the biggest room to
3 complain are probably Dominion because we got the
4 application with three weeks to review. It was kind
5 of panicked. But fortunately both the application and
6 SER were very good, so it was easy for us to do, as
7 was yours.
8 MR. ZINKE: Thank you.
9 CHAIRMAN POWERS: Any questions you'd like
10 to pose to George?
11 MEMBER ARMIJO: I've got a question.
12 MR. ZINKE: Yes?
13 MEMBER ARMIJO: You said it's been three
14 years into the process now.
15 MR. ZINKE: We submitted October of 2003.
16 MEMBER ARMIJO: What was your expectation
17 for the time required to get the ESP? What do you
18 think is a reasonable time?
19 MEMBER SIEBER: Three years. Say three
20 years.
21 (Laughter)
22 MEMBER ARMIJO: You don't have it yet,
23 right?
24 MR. ZINKE: No, we don't have it yet.
25 We're hoping, you know, we may get it December, we may

1 get it January. So I mean, we're pretty close. I
2 think there are people that are high level in my
3 company that would see two years as a much better time
4 frame than three or three and a half.
5 MEMBER ARMIJO: The fact that you're
6 basically the first three applicants, or the
7 icebreakers for the industry.
8 MR. ZINKE: No.
9 MEMBER ARMIJO: Do you think there's a
10 built-in slow speed process here?
11 MR. ZINKE: I don't know the full reasons
12 of why it's taken that long. The environmental was a
13 lot more critical path than anything occurring on the
14 safety side.
15 MEMBER WALLIS: How long is this ESP going
16 to be? Is it going to be multiple pages, or is it
17 going to be a very short document which says you meet
18 these criteria and that's it? Or is it going to be
19 humongous? How long is the ESP going to be?
20 MR. WEISMAN: I'm Bob Weisman, I'm from
21 the Office of General Counsel, and we are putting
22 together an ESP template. The staff is putting
23 together.
24 MEMBER WALLIS: You're just putting it
25 together now?

1 MR. WEISMAN: Yes.

2 MEMBER WALLIS: Okay.

3 MR. WEISMAN: So, I can't tell you how

4 long any individual piece is going to be.

5 MEMBER WALLIS: You didn't do this before

6 you started reviewing the applications?

7 MR. WEISMAN: No, sir.

8 MEMBER WALLIS: A little bit strange you

9 didn't put down your expectations before you reviewed

10 the applications. But okay. So now you're figuring

11 out what it might look like.

12 MR. WEISMAN: Yes.

13 MEMBER WALLIS: Is it going to be a huge

14 document, or is it short and sweet?

15 MR. WEISMAN: I would not expect it to be

16 huge.

17 MEMBER WALLIS: Short and sweet?

18 MR. WEISMAN: I wouldn't expect it to be

19 extremely short, but it will be a multi-page document.

20 But I would estimate, if you want me to estimate, I

21 will try and say somewhere between maybe eight and

22 twenty pages.

23 MEMBER WALLIS: Well, that's good. That

24 helps me. It's not hundreds of pages.

25 MR. WEISMAN: No, no.

1 MEMBER WALLIS: Good.

2 MR. WEISMAN: That's what I would guess.

3 It depends on -

4 MEMBER WALLIS: Right.

5 MEMBER SIEBER: Kind of like your plant

6 license.

7 MR. WEISMAN: Yes, about like it.

8 MEMBER SIEBER: Yes, ma'am.

9 MS. GILLES: This is Nan Gilles from the

10 Division of New Reactor Licensing. Just one item of

11 clarification. The staff actually did start to

12 prepare an ESP template back before any of the

13 applications were submitted, back when we were

14 discussing generic ESP issues with the industry at

15 large. And we did issue a template for the industry

16 to look at, and they did comment on it, and we have

17 revised it since then. So this isn't the first time

18 we've attempted a template.

19 MEMBER SIEBER: Thank you.

20 CHAIRMAN POWERS: Thank you, George.

21 Eddie?

22 MR. GRANT: Yes, sir.

23 CHAIRMAN POWERS: Well, I understand we're

24 making you run pretty hard here.

25 MR. GRANT: Most of what I have to say has

1 already been said.

2 CHAIRMAN POWERS: The advantage of going

3 last, huh?

4 MR. GRANT: Absolutely. What we would

5 like to discuss is a theme of common understandings.

6 We think that our beginnings did not start out with

7 common understandings, and therein lies many of the

8 difficulties that we encountered throughout, as we

9 discussed already, some differences in understandings

10 on the emergency planning, major features. And we

11 probably won't go over those again, although they were

12 on my list. But these common understandings are

13 essential, as it says here, to the high quality

14 applications, both with the early site permits and

15 certainly continuing that forward. And we keep

16 hearing that theme of high quality applications for

17 the COL applications. So once again, those common

18 understandings are going to come into play. We've

19 learned quite a bit from the ESP towards getting

20 common understandings as we move forward to COLs.

21 CHAIRMAN POWERS: The question that we'd

22 really like to explore just a little bit as we have a

23 chance here is has there been enough that somebody

24 else coming in, either from your company or others, or

25 your mega-organization or others, have we done enough

1 so that there would be something approaching or
2 approachable of a common understanding? Or are there
3 still places where the world's going like this?
4 MR. GRANT: There will always be places
5 where the world is going like that.
6 CHAIRMAN POWERS: Yes, absolutely.
7 MR. GRANT: Speaking of organizations, I'm
8 Eddie Grant with Exelon. And with me today is Chris
9 Kerr, who is the senior project manager for our
10 project development, who is now heading up the early
11 site permits and our Exelon interface with New Start.
12 CHAIRMAN POWERS: To me, he's the guy we
13 ask if he thinks a common understanding is emerging.
14 MR. GRANT: Well, you're certainly free to
15 ask him all the questions.
16 (Laughter)
17 MR. GRANT: But, yes, I think we've moved
18 a long ways towards common understandings on the COLs.
19 As I said, all jokes aside, there will always be
20 places where we think we have understandings and we're
21 talking past one another, as George indicated earlier.
22 But we're getting a long ways. We've got some jump-
23 starts on the guidance getting revised. We've been
24 working with the staff on a Reg Guide 170 replacement,
25 the DG-1145 that's recently out. So it's out a full

1 year before the applications are expected. That's
2 much better than RS-002, which was a few months before
3 it was expected. As we indicated, also working on
4 revisions to the SRPs. We haven't seen all those yet,
5 but we expect to see most of those, at least the
6 important ones, in early drafts sometime this year,
7 with finals issued, again, at least six months before
8 the applications so that those would be what we would
9 need to address in accordance with the regulations.
10 So yes, much improvement over what we saw during the
11 early site permits.
12 However, I will go back, and as you
13 pointed out earlier, part of the reason for that is
14 that the early site permits were kind of an upstart,
15 if you will. They came along pretty suddenly. And
16 our purpose, as George indicated, was to implement the
17 process, and to define the process, and to understand
18 where the holes were, and where the difficulties lie.
19 And in that respect I think we've been - we've had
20 great success. I think that the ESP application
21 that's out there now, Southern, ESPS should benefit
22 greatly from the ground that we've been over. And
23 they're talking about a much reduced review cycle for
24 Southern's ESP. We hope that comes to fruition. Very
25 much like to see it.

1 Another thing I would say there, Grand
2 Gulf, of course, did not run into any spectacular
3 problems I would say, as Exelon did by imposing a new
4 seismic methodology.
5 CHAIRMAN POWERS: If I remember, their
6 Mississippi River caused some consternation.
7 MR. GRANT: Right, right. With the design
8 change on the cooling for North Anna. So North Anna
9 and Exelon's Clinton station both had some fairly
10 major changes, or differences, or new methodologies
11 that were under review that impacted the schedule.
12 Grand Gulf, not so much, and so we certainly would
13 like to see the schedule that is taken for one where
14 there were not significant impacts like that reduced.
15 And we're looking forward to the Southern review.
16 CHAIRMAN POWERS: You guys had the burden
17 of advancing a new seismic methodology.
18 MR. GRANT: Indeed, and I'll get into that
19 a little bit more on the next slide. But we've
20 already been discussing that these common
21 understandings clearly are essential to maintaining
22 the schedules. The NRC needs to be clear about their
23 intentions, which we've talked about a lot here
24 already with the guidance, getting out RS-002, and
25 giving us that guidance before we submitted, but

1 frankly not much before, was not all that helpful,
2 although we did have a number, as George indicated, a
3 number of discussions in the year prior to the
4 submittal of those applications where we worked out a
5 great number of issues. And they worked quite well
6 with us to help us make sure that we were much closer
7 than we might have been had we just gone without any
8 discussions. It would have been a real surprise for
9 each of the applicants, I think had we not had any
10 discussions with the staff.
11 CHAIRMAN POWERS: In a previous era, and
12 maybe I reflect aging on my part. We heard lots about
13 regulatory stability. Now we're seeing this phrase
14 "common understanding" which is one that resonates a
15 lot more with me than "regulatory stability." But I
16 mean, I'm taking this as a take-home lesson. What the
17 staff does to communicate, and not just to speak, but
18 to really communicate so that he understands what both
19 the applicant and he are trying to do is probably time
20 well spent.
21 MR. GRANT: Absolutely. And the more they
22 can tell us and the earlier they can tell us about
23 what it is they are going to be looking for in this
24 application.
25 CHAIRMAN POWERS: Similarly, I very much

1 appreciated what George had on his slide, where he
2 said here's what our expectations were. I think
3 hearing those words from the applicant helps the staff
4 a lot. I mean, they may not be able to meet every one
5 of those expectations, but knowing what they are, and
6 saying, okay, tough luck on this one George, but the
7 other three or four I can meet, is really very, very -
8 strikes me as very useful.
9 MR. GRANT: Absolutely. And again, I have
10 another one of those that I'll get into in the next
11 slide.
12 CHAIRMAN POWERS: I mean, even just
13 hearing your words that, gee, it's a lot more
14 comfortable for me to present in front of the ACRS if
15 I know what they're looking for. Yes, I heard you
16 George. And we might spend some time on the front end
17 thinking about that, because I mean I know many, many
18 of us used to appear on that side of the table, and
19 many, many of us knew that that was not the most
20 comfortable place in the world.
21 MR. GRANT: Typically it's not. Today is
22 a little more relaxed.
23 CHAIRMAN POWERS: Very well.
24 MEMBER WALLIS: If the staff is clear
25 about what they want, and you're clear about what you

1 have to provide, the ACRS really doesn't have that
2 much to do. I mean, if everything is clear about what
3 has to be done -
4 MR. GRANT: We would have a great day.
5 MEMBER WALLIS: We may not be able to add
6 much value. We're not going to raise some completely
7 new issue. It would be unlikely.
8 CHAIRMAN POWERS: We're free to, though.
9 MEMBER WALLIS: We are free to do that.
10 We can do anything we like, but I'm just saying, if
11 it's really clear what you have to do, it may well be
12 that we don't have that much to add.
13 MR. GRANT: And then this chair wouldn't
14 be nearly as uncomfortable.
15 CHAIRMAN POWERS: Fun.
16 MR. GRANT: But it wouldn't be nearly as
17 much fun.
18 CHAIRMAN POWERS: It wouldn't be as much
19 of a growth experience.
20 MR. GRANT: All of the above.
21 CHAIRMAN POWERS: But I definitely hear
22 your common understanding. I mean, everybody has
23 repeated it here, and I think it's a good point. I
24 think we just - I may end up advising the Commission
25 we need to communicate to the ACRS as a whole that

1 talking on this, this common understanding, perhaps we
2 could have the Commission say, look, in thinking about
3 how you do your staff, time spent on developing common
4 understandings is time well spent.
5 MR. GRANT: Absolutely. However, as you
6 can see, there's another bullet there that says the
7 applicant needs to be clear about his intentions as
8 well, and that's a lessons learned for us. We did not
9 give the staff much, if any, notice ahead of time that
10 we were coming in with this new seismic methodology.
11 Frankly, we didn't know we were coming with this new
12 seismic methodology.
13 (Laughter)
14 MR. GRANT: Until about a month before we
15 were scheduled, originally scheduled to come in. And
16 we began to look at the results of the Reg Guide 1.165
17 method, and frankly just couldn't live with the
18 results. We had to go find another methodology,
19 implement it, and get it into the application in as
20 quick a time as we possibly could in order to get
21 anywhere near our schedule.
22 CHAIRMAN POWERS: But let's be clear that
23 you did that without sacrificing any safety.
24 MR. GRANT: Absolutely. Absolutely. I
25 mean, safety is always Number One. But we didn't give

1 the staff much warning of that. Frankly, I don't
2 remember the details, and I would ask perhaps Mr.
3 Munson remembers more about how much warning we gave
4 him, since it was a direct impact on him. It wasn't
5 much.
6 CHAIRMAN POWERS: I recall him panting as
7 he raced in to make his presentation.
8 MR. MUNSON: There was no advance warning.
9 In fact, we had meetings through NEI the summer
10 before, and we specifically discussed seismic issues.
11 And the words "performance-based" never came up.
12 MR. GRANT: Correct.
13 MR. MUNSON: And then we saw both North
14 Anna and Exelon. Clinton had applied that new
15 approach.
16 MR. GRANT: Again, and that's why this
17 bullet is there. I mean, we need to let you know what
18 we're planning to do, and in their defense we did not
19 do as Exelon on that particular application. Again,
20 we didn't know much ahead of time so we couldn't have
21 given them much warning, but we could have once we
22 figured out what we were doing as we began to do the
23 calcs. Of course, we didn't know how they were going
24 to come out either, but we could've given them a
25 little advance warning and warned them. And we did

1 have, during that year ahead of time, we did discuss
2 Reg Guide 1.165 many times, and in every case we told
3 them that was what we were planning on doing. So.
4 MEMBER SIEBER: On the other hand, that
5 went relatively smoothly, considering that it was a
6 shot in the dark, and no warning.
7 MR. GRANT: Absolutely. Considering it
8 delayed us about four months.
9 MR. MUNSON: Smoothly is how I would
10 describe it.
11 MR. GRANT: I didn't see all the inside
12 workings within the NRC during that time frame so I
13 can't comment on how smoothly that went, but the
14 results, considering the situation, came out quite
15 well. We were quite pleased.
16 MEMBER SIEBER: And Marv, you pointed it
17 seemed to go well, and that's because we didn't know
18 what was going on in your shop.
19 MR. GRANT: Most of these examples have
20 been discussed in one way or another. A couple of
21 points that I would make generally with regard to this
22 is that if we had not had those discussions that we
23 referred to over the year's time prior to the
24 applications, we would have - one of our expectations
25 might have been that we could come in using the site

1 characteristics that had been identified for the site
2 as it sits today for the operating plant that's there,
3 and that we would expect the staff to approve those
4 again for the site permit. Clearly that was way off
5 base. But had we not had those discussions, that
6 might have been an expectation. We learned that
7 during our pre-application discussions, and came to a
8 common understanding for the most part on how that was
9 going to work, and what could work, and what wouldn't
10 work in that area. At Exelon, because we had written
11 the application using a good deal of that information,
12 it still came in that way, and we saws that in the
13 number of RAIs in certain areas. And so that's a
14 lessons learned I think, that not only we learned but
15 hopefully all the rest of the industry learned. That
16 yes, that's there, but as Mr. Barss pointed out
17 earlier, it's a separate application, it's a separate
18 review, it's a separate.
19 CHAIRMAN POWERS: It was done in a
20 different era.
21 MR. GRANT: Absolutely.
22 CHAIRMAN POWERS: Everything's different.
23 MR. GRANT: Updated guidance that needs to
24 be considered. And again, had we just come in from
25 Day One, we would have been way off base.

1 CHAIRMAN POWERS: A COLed application
2 probably wouldn't work.
3 MR. GRANT: Would not have. In fact,
4 probably would have been rejected from the beginning.
5 We did talk about the plant parameter envelope.
6 Again, that was new. The guidance really didn't
7 address that. You've heard all that already. One
8 specific point I guess that I would point out there
9 that we didn't understand really well. We did come to
10 a common understanding that the staff needed a
11 specific rad consequence analysis, radiological
12 consequence analysis using the site /Q parameters.
13 We weren't quite sure we understood why. We believe
14 that's a function of the regulations being written the
15 way they are.
16 CHAIRMAN POWERS: You need to take my
17 course on the history of the regulations, and then you
18 would have understood this. It's a historical thing.
19 It's because in the past they were - sites were all
20 done piecemeal. And sites were getting rejected
21 unexpectedly. That is, the applicant could not
22 propose a site with a reasonable expectation that it
23 would be accepted. Because there were not specific
24 criteria. And so in response to that 10 C.F.R. Part
25 100 was written with some clear - so that there would

1 be clarity in what kinds of sites were unacceptable.
2 And that leads to having a /Q dispersion analysis and
3 whatnot. It is very much a historical thing, and it's
4 very much responding to a complaint from industry of
5 not having a common understanding of what was an
6 acceptable site.
7 MR. GRANT: There we go again with the be
8 careful what you ask for. Now we have this very clear
9 understanding of the wording in Part 100, and it
10 requires that we do this dose consequence analysis
11 when in fact it seems to us that all we really would
12 need to do at this stage is compare our /Q's with
13 those that were assumed in the DCDs and that should be
14 sufficient. But we can't do that because of the way
15 the rules are written now. So one lessons learned is
16 that perhaps Part 100 could be revised to simplify the
17 process.
18 CHAIRMAN POWERS: If you've ever been
19 through a revision of Part 100, you never want to do
20 it twice.
21 MR. GRANT: Never want to do it again.
22 Well, that's probably where we are. As far as the
23 plant parameter envelope goes, another lessons learned
24 is that if we would pick a single design, it certainly
25 would be simpler. We could do that one analysis.

1 Probably if we had a specific design, and we said here
2 are our /Q's it would be no problem. In fact, that's
3 what we did in several cases using several designs
4 under the ESP. We could do that dose consequence
5 analysis. It would be easy to do and get through it
6 real quickly. But using the plant parameter envelope,
7 as we've discussed a number of times here before the
8 committee, gives us much wider options for future
9 plants.
10 Trying to look back through some of these
11 and see which points. Seismic methodology we've
12 talked about quite a bit already. There was no
13 discussion earlier as Dominion was discussing the high
14 frequency issue. And the staff has made very clear to
15 us that that is not an ESP issue, and we understand
16 their basis behind that. There was a statement, and
17 I've forgotten now who said it, but they said that the
18 high frequency issue would not result in redoing the
19 designs that are certified designs. And I would
20 caution that that might not be exactly correct.
21 Because if we cannot figure out another way to come to
22 an agreement that the high frequency doesn't impact
23 that design, then yes indeed we may have to go back
24 and redesign and consider that high frequency in the
25 designs.

1 MEMBER WALLIS: What range of high
2 frequencies are you considering?
3 MR. GRANT: Depends on the site.
4 MEMBER WALLIS: You can't go to extremely
5 high frequencies.
6 MR. GRANT: Well, right now we carry the
7 spectra out to 100 hz.
8 MEMBER WALLIS: That sounds pretty high.
9 MR. GRANT: And high frequency is
10 generally anything over 10.
11 CHAIRMAN POWERS: It's 10 to 100 is the
12 area of -
13 MR. GRANT: Of concern.
14 CHAIRMAN POWERS: It's the area we just
15 have not dealt a lot with.
16 MR. GRANT: Correct. And doing the
17 spectra the way that we do them now with the PSHA
18 analysis. I guess that's redundant. But doing it
19 with the PSHA gives us some high frequency content
20 beyond 10 hz. It's not considered in the DCDs. Most
21 of them at least are flat beyond 10 hz, using the Reg
22 Guide 160 spectra.
23 Let's see, emergency planning. Again,
24 here's a place where if we had not had early
25 discussions we would have come in thinking the

1 emergency planning was going to be a slam dunk. We're
2 just like them and everything would be great. Thanks
3 to early discussions we recognized that that was not
4 going to be the case. However, we were still
5 surprised with the number of RAIs, and the details for
6 major features reviews. All the discussions that have
7 gone on before, I think that's well resolved. We
8 understand where we are going to go in order to get
9 maximum approval with the complete and integrated
10 plans.
11 Oh, I would love to talk about QA for
12 hours, but I'm going to forego that.
13 CHAIRMAN POWERS: Bless you.
14 MR. GRANT: One thing I would point out on
15 the topic of internet data is that it depends a great
16 deal on the source of that data. A lot of our data
17 that we got off the internet came from state agencies
18 or federal agencies, and we have high confidence in
19 that data.
20 CHAIRMAN POWERS: Well, it's retrievable,
21 because you can go to the state agency and they will
22 have it. The problem is there are going to be, if not
23 now, in the future, data that only is available on the
24 internet. That's the only place it exists.
25 MR. GRANT: But again, still, if it's

1 coming from the National Weather Service, even if
2 that's the only place it exists -
3 CHAIRMAN POWERS: It's retrievable.
4 MR. GRANT: It's retrievable, we will have
5 a copy of it in our files.
6 MEMBER SIEBER: There's a permanent
7 record.
8 MR. GRANT: Highly confident that it's
9 good data. It's not from Joe's website over here
10 who's been taking readings in his back yard. We're
11 sharp enough not to use that kind of data without some
12 kind of verification.
13 CHAIRMAN POWERS: What are you going to
14 do, not you in particular, but what do you do if the
15 professor of meteorology from Harvard University
16 publishes his analyses and data on the web, and that's
17 the only place? And of course, 20 years from now he
18 gets hit by a car in the Harvard Yard, and the only
19 place you can get it is off the web.
20 MR. GRANT: I'm not sure I see the
21 problem. Other than, first of all, it depends on what
22 the paper was about, and why we would have used it,
23 and the purposes behind it. But typically that's not
24 the kind of data that we're talking about. We're
25 talking about massive databases full of weather data

1 and other things.

2 CHAIRMAN POWERS: In some cases, I can

3 find you parts of the applications where there are

4 three data points. And it's very common that we have

5 very thin data on some things. And in the future,

6 you're going to find lots of it that's only going to

7 be on the web. And the problem is I go back and I

8 look at the web and it's been defaced by some of our

9 more adventurous colleagues in the electronic jungle.

10 And so now I look what's in your application, I look

11 what's no longer on the web, and I say why do I have

12 any confidence in this. And how do you handle that?

13 And people have talked about lots of ways of doing it.

14 One is I record it, here it is, whatnot. I get

15 somebody to notarize it and say, yes, this is

16 definitely what was there, or any kind of thing like

17 that I can imagine, but unless we have somebody set

18 down this is what you need to do, the poor guy that

19 comes along doesn't honestly know that he's done

20 enough, too much. It's going to be a problem.

21 MR. GRANT: Well, with regard to that

22 particular problem, when we do pull something off of

23 the web, we keep a copy. It's electronic. So if it

24 goes away from the web, or gets defaced on the web,

25 we've still got a copy that says this is what was

1 there, this is the date we pulled it off, and this is
2 where we got it. So we're confident that we have a
3 backup piece of information for what we put in the
4 application.
5 CHAIRMAN POWERS: I have no doubt that you
6 did, but does everybody know to do that? Is that
7 adequate?
8 MR. GRANT: Yes. If that was the concern,
9 yes, I think that was adequately addressed. Part of
10 the concern that we saw from the QA RAIs on that was,
11 again, as Mr. Prescott indicated, was some kind of
12 certification of the data. And again, if we were
13 pulling it from the National Weather Service or from
14 the state agency, we did not see that that was a
15 necessary step to take and still don't.
16 MEMBER SIEBER: I guess the biggest
17 problem with electronic publishing is if somebody
18 writes a scientific paper and publishes it on the web
19 and not through a publishing company or a standards
20 committee or an engineering society or what have you,
21 you don't have all the elements of peer review and all
22 that other stuff that gives authenticity to that. So
23 I'd be cautious about using things that don't go
24 through the rigor of the regular publishing process.
25 CHAIRMAN POWERS: You're going to have to

1 address that because that - the peer review process,
2 (a) is breaking down.
3 MEMBER SIEBER: Yes, it is.
4 CHAIRMAN POWERS: Its defects have always
5 existed. I mean, it's held in greater esteem than it
6 ever deserves.
7 MR. GRANT: One of the areas where that
8 might come into play, because we do depend on a large
9 number of papers and discussion and methods and
10 sources, is the seismic area. But as we've discussed
11 previously, we have the Shack methodology where all of
12 those sources are peer reviewed and assigned weights
13 and considered in the analysis in that manner so that
14 we have some safeguards in that particular area
15 through that methodology.
16 MS. HERRICK: I'd like to make a comment.
17 Dayna Herrick from Duke Energy. I just want to
18 comment on the use of internet data. You're right, we
19 do need to have some consideration of standards
20 because this information is being used now at
21 operating plants. So this is bigger than ESP COL,
22 especially in the area of security. Some of the B.5.b
23 stuff, where there's not a lot of published
24 information that may have come through, you know, the
25 military. But given the inability to tie it back

1 through conventional sort of QA processes the way it's
2 being treated now is just it becomes part of the
3 reference material that you use to justify your
4 engineering judgment and the assumptions that you're
5 making.
6 CHAIRMAN POWERS: My only point is that if
7 we take this limited view now, it's going to become
8 such a pervasive aspect of the scientific engineering
9 method in the future that that limited view is no
10 longer going to be viable. It's going to be a much
11 more integral part of the way we do engineering
12 analyses in the future. It's just going to grow. And
13 it's going to be an interesting challenge.
14 MR. ZINKE: And Eddie, if I could
15 interrupt on the internet data. This is George Zinke.
16 A term to be careful of using is "retrievable" because
17 we found that even particularly when you're going to
18 the databases for the national organizations where you
19 had some assurance of integrity, but the way you
20 gathered the data from the internet is you create a
21 query. And so it is manipulating data to give you the
22 answers. And anybody that goes in one minute after
23 you do and puts in the same parameters and runs a
24 query will not get identically what you put in. So
25 for us, retrievable was you had to take a picture of

1 what you got because it's not retrievable ever again
2 from that source in exactly the same way. It's just,
3 it's the nature of the internet stuff.
4 CHAIRMAN POWERS: It's interesting.
5 MR. GRANT: It is indeed. Electronic
6 submittals. One point I guess I would make that some
7 of the others before me did not make is that perhaps
8 this is an area where we've taken a step backwards and
9 unlearned a lesson. If you make today a paper
10 application, then your amendments later on can be on
11 a page replacement basis. I understand that that
12 would be difficult to do in an electronic submittal.
13 However, the staff apparently cannot even make file
14 replacements. And where an application has a hundred
15 50 mg files it seems unreasonable that you should have
16 to resubmit all 50 or all hundred 50 mg files when
17 only one changed. So a lesson unlearned there
18 perhaps.
19 ASLB hearings process. This is very
20 similar, I think, to what we've gone through as George
21 indicated on ACRS. We've got a new Part 2 out there,
22 and we're still trying to figure out exactly where
23 that's going to go. We're just beginning our
24 hearings. Actual hearings process is - well, that's
25 probably an inaccurate way to put it, but the

1 hearings, the actual hearings themselves will begin
2 soon. And we'll see where that goes.
3 Permanent content we've certainly talked
4 about. This is one place where we remain concerned
5 about the lessons. It is our ultimate goal, and
6 frankly we don't know yet what it looks like. And
7 that, at this stage, after three years, seems
8 untenable.
9 MEMBER WALLIS: What I'm curious about is
10 when it's all finished, when you've got your permit,
11 what have you really gained?
12 MR. GRANT: Well, it depends on what the
13 permit says.
14 MEMBER WALLIS: Right, yes.
15 MR. GRANT: Absolutely. That's the point
16 exactly.
17 MEMBER SIEBER: That may be your lesson
18 learned.
19 MR. GRANT: It might be, frankly.
20 MEMBER WALLIS: Probably was -
21 MR. GRANT: - before we know the final
22 results of these lessons, and whether or not we've
23 used this process to its fullest extent. With that
24 I'd say thank you for your time and this opportunity
25 to present, and thank you for your praise of the

1 quality of the applications, and the staff's work as
2 well.
3 MEMBER SIEBER: Your work and their work.
4 CHAIRMAN POWERS: Any questions to pose to
5 Eddie? I think you've given us things to think about
6 here. I didn't want that, it makes my head hurt. But
7 these are useful things for us to know about.
8 MEMBER WALLIS: What do we now with the
9 full committee on this?
10 CHAIRMAN POWERS: Well, I was first going
11 to ask the subcommittee what they thought about what
12 we've heard about. My proposal for the full committee
13 is that certainly have Chris make almost the same
14 presentation to us, supplemented only by anything that
15 he thinks he's learned here in the meeting itself,
16 what he needs to augment, augment or decrement what
17 you said. And then to try to summarize, that I would
18 try to summarize what I've heard from the applicants,
19 who are certainly invited to attend, and if they want
20 to make a presentation I'm sure there's time on the
21 schedule. But otherwise, I was just going to try to
22 summarize anything that wasn't covered by Chris.
23 That's my proposal, but I can always be redirected.
24 Bill, any comments?
25 MEMBER SHACK: I did have one question for

1 the staff. It's somewhat unrelated, but it's sort of
2 related, and that is, you know, one of the things that
3 we did was to come up with - I mean, one of the big
4 differences were the differences in seismic hazards we
5 were seeing in the Midwest. Have you decided how
6 those are going to affect current operating plants
7 yet?
8 MR. ARAGUAS: Unfortunately Cliff just
9 took off about five minutes ago.
10 CHAIRMAN POWERS: He is one smart cookie,
11 isn't he?
12 (Laughter)
13 CHAIRMAN POWERS: They do have a proposed
14 generic safety issue, or generic issue 199 that is
15 still under review? That's as far as I could carry
16 it.
17 MR. ARAGUAS: That's as far as it's gone
18 at this point.
19 CHAIRMAN POWERS: Yes, and I think that's
20 where it's going to stay for awhile.
21 MEMBER SIEBER: Well, didn't they have one
22 big seismic backfit a number of years back? In like
23 1980?
24 MEMBER SHACK: Oh yes, the seismic
25 backfits.

1 MEMBER SIEBER: I remember something like
2 700 design changes coming out of that.
3 CHAIRMAN POWERS: Graham?
4 MEMBER WALLIS: I think it's been a very
5 useful discussion. All kinds of things have come out.
6 I think that the difficulty is going to be how to
7 distill it down to something which is sort of really -
8 the pointed lessons learned. The takeaways from
9 this.
10 CHAIRMAN POWERS: I am wrestling with
11 that. And to the extent you can pass me notes on what
12 you think the letter ought to look like I'd surely
13 appreciate it, because my notes have exceeded my
14 capacity to distill right now. But I very much
15 appreciated the applicants' point of view, because
16 there were several things that I just didn't think
17 about that are weighing heavily in my mind. But this
18 general idea of a common understanding seems to be a
19 very good theme that has implications in the COL. And
20 it seems like it's a lesson that the staff has in fact
21 learned, just based on what they're trying to do on
22 the COL. So I don't think it's going to come as any
23 shock to anybody.
24 Similarly, I see this internet issue as
25 one that's more pervasive, that in the long-range

1 thinking the agency, they've just got to handle, got
2 to decide how to handle this and provide some guidance
3 on it. I serve on a committee kind of titled the
4 Library of the Future. And I see in that committee
5 that the whole idea of how scientific and engineering
6 information is published is going through a change
7 that's going to be fairly radical. One of the things
8 that's happening of course is that library budgets,
9 and this is true across the nation, are flat. And
10 that means the amount of archival information
11 libraries can acquire is going down, that publishing
12 organizations are - their prices are going up, budgets
13 are flat. Similarly, I see investigators being less
14 having pure resources to avail themselves of archival
15 publications, so they're getting very excited about
16 this internet, sometimes called electronic publishing,
17 sometimes called self-publication and whatnot. I see
18 major, major questions being asked about the peer
19 review process, and whether it actually assures the
20 kind of quality that we think it does versus this
21 interactive, putting it on the electronic medium and
22 let undesignated reviewers comment on it as being far
23 more effective than a designated reviewer. There are
24 lots of things happening, and it hasn't sorted itself
25 out, and it will never sort itself out because it will

1 continue to evolve.

2 MEMBER WALLIS: How do you keep the

3 garbage out is going to be a problem.

4 CHAIRMAN POWERS: Well, you don't now. So

5 you're going to have lots and lots of - we're going to

6 allow the garbage to proliferate, and rely on some

7 other process to filter it. Because even now you

8 don't keep the garbage out of literature. I mean,

9 it's a myth that the peer review process keeps garbage

10 out of literature. Tom?

11 MEMBER KRESS: Well, I was thinking about

12 your letter and what its objective and purpose might

13 be. For example, the lessons learned on early site

14 permits are already lessons learned. I mean, it

15 doesn't do much good to say this is lessons for people

16 on the early site permit. So I was trying to think of

17 where these lessons learned might have additional

18 applications. And certainly at the COL stage there's

19 something that could feed into that. It seems to me

20 like there's something to feed into the reg guides and

21 the standard review plans that they're modifying and

22 redoing. And you know, I think there's something we

23 might learn for our reviews. I'm not sure what, how

24 we can apply it. Letting them know what we expect to

25 hear is kind of a hard thing to do, but -

1 CHAIRMAN POWERS: I get the impression
2 George has given us some good advice, that we may not
3 be able to specify exactly what we're going to want to
4 hear, but to the extent we can communicate it, it's
5 useful.
6 MEMBER KRESS: But I think there were some
7 very general principles, like the communication
8 problems and so forth that would apply to almost
9 anything that's coming up later. And so I think if I
10 were looking for the things to go in the letter, I
11 would try to distill out those general principles.
12 MEMBER WALLIS: Well, it goes to who, an
13 EDO?
14 MEMBER KRESS: I would think the EDO would
15 be the right place.
16 CHAIRMAN POWERS: We might even write this
17 one to file. I don't know.
18 MEMBER KRESS: Yes.
19 CHAIRMAN POWERS: Haven't thought about
20 it.
21 MEMBER WALLIS: I think the Commission
22 isn't really interested unless there's something that
23 needs to be changed or something, are they? They just
24 want to know things are going well.
25 CHAIRMAN POWERS: I haven't really thought

1 about that, but it's very likely that the EDO, that
2 tends to be worthwhile. On the other hand, we do have
3 a new Commission here, a relatively new Commission.
4 It might be useful to communicate to them just if
5 nothing else to acquaint them with the fact that this
6 process is going on. And I think it's been well done.
7 We might also communicate to them that after three
8 years George still doesn't have his permit.
9 MEMBER WALLIS: We might slip that in.
10 MEMBER ARMIJO: You know, that is
11 surprising, that the applicants really don't have a
12 comfortable feeling of what it's going to be worth,
13 what it's going to say and what it's going to be
14 worth. But when the ESP was set up, there was a clear
15 intention by the Commission what it would do. And
16 somehow that's - people are confident that that early
17 definition or goal is going to be met. And maybe we
18 should reaffirm.
19 MEMBER KRESS: I think that'll iron itself
20 out when the first permit gets on the table.
21 CHAIRMAN POWERS: I'm sure that that's the
22 case. Once the first permit comes out. But Sam's
23 correct too, that we need to make sure that that
24 happens. Otto?
25 MEMBER MAYNARD: Just a couple of things.

1 I'm not sure what if any of it's going to any type of
2 letter or anything. But I think the comment on the
3 expectations for the ACRS meeting. I said that you're
4 probably never going to get a template, and that's
5 true, but I do think that the subcommittee chairman
6 and the lead ACRS engineer should identify anything
7 specific that they want covered in a meeting, and
8 maybe any specific expertise that might be helpful to
9 have at the meeting, and feed that back to the
10 licensee before the meeting presentation.
11 CHAIRMAN POWERS: I'm clearly to be
12 corrected on that. Over my history in the ACRS I
13 think we've been pretty good about that, that when
14 we've had very specific questions, that we've written
15 down and sent them. I would also point out that my
16 recollection is that every time we have done that the
17 speakers have failed to address those questions.
18 There's been a bit of a frustration on our part when
19 we've done it, but I think we'll probably continue to
20 do that.
21 MEMBER MAYNARD: I think licensees need to
22 be aware. No matter how much is provided to them as
23 expectations, any member at any time can ask something
24 that may be totally unrelated to any of the other
25 stuff.

1 MEMBER KRESS: And we often do.

2 MEMBER SIEBER: That's the fun of it.

3 CHAIRMAN POWERS: We have I think an
4 outstanding history of allowing the response to be 'I
5 have to get back to you on that.' And I think we have
6 a very good history of people coming back to us on
7 that.

8 MEMBER MAYNARD: And also, one of the
9 things in my short history that I've noticed is that
10 there are times that the ACRS gets I would say out of
11 bounds with what's part of the regulation. But then
12 when it comes time after all the discussion they do
13 take it back to, okay, what part of this is really
14 required, and what part of this is something we're
15 interested in, and bringing it back into focus.

16 CHAIRMAN POWERS: The ACRS has a
17 responsibility to say what the regulations ought to be
18 as opposed to what they actually are. And so that
19 sometimes leads us into areas that I understand it
20 frustrates the staff, it frustrates the applicants.
21 They say that's not where you ought to be. But part
22 of our job is to tell the Commission ought to be.

23 MEMBER MAYNARD: Changing just a little
24 bit here. Length of time. This is something I think
25 the staff needs to do a kind of an internal self-

1 assessment. Not get back to us or anybody else, but
2 you know, three years seems to be a long review time
3 to me. And we have a number of things potentially
4 coming up with COLs and stuff that I think they really
5 need to take a look. Personally, I'm a believer that
6 a shorter review time will typically end up with a
7 better product and better thought than a very extended
8 review time. You forget what you've already reviewed
9 and things, it's harder to manage. I would just take
10 a look. Because again, I think most of these really
11 should be lessons learned to be applied to the COL
12 applications that will be coming in, and then some of
13 the broader things, because I think that's where it's
14 going to get even more complicated, many more topics
15 and issues and reviews going on. So I would really
16 encourage the staff to take a look at how they're
17 managing these types of reviews, and are they really
18 doing everything they can to program management
19 through to get some more timely results there.
20 I do think electronic submittals, I agree
21 that we probably have taken a step back, but the
22 reality, that's coming. And I think the real key is
23 the NRC and the industry need to work hard, you know,
24 what do we need to do in defining electronic
25 submittals, and get some of these things squared away.

1 Same way with the internet data. And some of these
2 may not be perfect in the beginning, but like on the
3 internet data, I think we need to, you know, start out
4 with some criteria, and then it's something that we
5 may have to revisit later or whatever. But I think
6 it's just something somebody needs to sit down and do.
7 And again, I get back to most of these
8 things we're talking about, I really take a look at
9 the COL stage, which you're talking about many more
10 diverse topics that's going to be reviewed and
11 covered. I'd take a look at these from lessons
12 learned for that, probably as much if not more so than
13 for the ESP stage. That's all I've got.
14 CHAIRMAN POWERS: Jack?
15 MEMBER SIEBER: Somehow I see an analogy
16 between ESP applications and reviews and operating
17 plant site license renewal reviews. If you look at
18 how lessons learned entered into that process, the way
19 the staff handled it was to develop, as time went by,
20 things like the GALL report, and develop various
21 positions on various topics and so forth. And
22 licensees also would watch one another, look at
23 applications, try to copy out the things that worked,
24 forget about the things that don't work, and the
25 review process became more streamlined as it went

1 along. I think that same kind of evolution could work
2 here, except I think by the time you get a streamlined
3 process there will not be any more applications. And
4 so I think that what we need to do is do more than the
5 standard lessons learned recital. We have examples
6 here. I think the applicants' presentations were
7 great.
8 I also thought the applications for early
9 site permits were good, and I think the review was
10 done properly too. It just seemed like three years is
11 too long for what you get out of the process. And it
12 could have benefitted a lot by having a more defined
13 process, a template. And by the time you get all this
14 stuff put together that would help licensees, and by
15 the time they learn and copy from one another so that
16 they don't keep making the same mistakes, the whole
17 process will be over. If I take three years for
18 Chapter 2, the other 19 chapters would be 60 years,
19 right? And no one here will be there to see a final
20 license issued. And if we can't speed the process up,
21 make it efficient, take advantage of the lessons
22 learned, avoid licensees floundering around in things
23 that they don't need to do, and concentrating on the
24 things that they do need to do, I think we're all
25 going to be a lot better off.

1 To me, this is a warning signal that when
2 you get to the COL stage, if we run the COL stage the
3 way the ESP stage went or is going, we're in deep
4 trouble. And if it takes that long, and it takes that
5 amount of effort, and we have to find our way because
6 of lack of pre-direction through the construction and
7 operating license stage, we're in trouble. I don't
8 think you license plants using this kind of process.
9 So I encourage the staff and applicants, applicants
10 have a responsibility too, to look at what's happening
11 to their friends. You know, it's like penguins on the
12 ice shelf. You push one over, if he swims away and
13 has a good time it's good. If something eats him, you
14 know not to do that, okay? And so you have to learn
15 from one another, and the staff has to be pretty
16 definitive and broadcast what it really wants. On the
17 other hand, I think both the applications and the
18 staff reviews were good. They were professional. And
19 it's just the mechanics that really sort of bother me.
20 So I would encourage not to use the
21 standard process of saying, well, I learned these
22 three lessons, I'm going to fix them. I would be
23 soul-searching right now to see what other lessons are
24 really in there that nobody really talked about that
25 much because they had these six important ones, and

1 try to fix as many as we can, and be as definitive as
2 far as expectations and communication is concerned as
3 we can be. So I'm not sure how you fashion that into
4 words, but that really expresses my concern more than
5 a plan of action for a letter or anything else. And
6 I guess by just saying that the message goes, right?
7 Oh, that's it.
8 CHAIRMAN POWERS: Thank you. Okay, the
9 general plan I think is clear now for what we'll do
10 for the full committee?
11 MEMBER WALLIS: I think the staff
12 presentation needs to be a little shorter. It did
13 take a long time. You're saying to include more
14 things.
15 CHAIRMAN POWERS: That's because we don't
16 - we discussed lots of things.
17 MEMBER WALLIS: Yes, I know.
18 MEMBER SIEBER: There should be enough of
19 an understanding in the staff's presentation to make
20 folks believe that they actually heard the applicants
21 say something, okay? In other words, it's sort of a
22 repeating kind of thing. You ought to say something
23 about 'Applicants had these problems, we're addressing
24 them.' Or 'This is what these problems are, and
25 here's possible ways of addressing it.' For example,

1 the emergency planning.

2 CHAIRMAN POWERS: So you'll be doing some

3 heavy lifting for the committee to the extent -

4 MR. ARAGUAS: Between now and 10:30?

5 MEMBER SIEBER: I'm here to help you.

6 MR. ARAGUAS: Between now and 10:30,

7 right? Tomorrow's the -

8 CHAIRMAN POWERS: Is that the time?

9 MEMBER WALLIS: If you're at 10:30 the

10 committee will want to go to lunch, so you can't -

11 CHAIRMAN POWERS: Okay. So you've got -

12 you do not need to feel an obligation to fill that

13 entire time, because I have to take a little while to

14 summarize things.

15 MEMBER SIEBER: Well, he's got 17 hours to

16 prepare.

17 CHAIRMAN POWERS: I don't know that you

18 need to do a lot to your presentation. It was, you

19 know, it was kind of the level that I would expect at

20 an ACRS. I mean, we interrogated you at depth and

21 went wandering off when you presented it. That won't

22 happen.

23 MR. ARAGUAS: Right. I mean, I could

24 probably get through it in about 15 minutes without

25 questions, but I'm sure you'll have some follow-up.

1 CHAIRMAN POWERS: I think it's - I think
2 if you augment it with a page on what says what you've
3 heard.
4 MR. ARAGUAS: So if I just do the same
5 presentation, and like you said, add on to what we're
6 thinking about doing in terms of what industry has
7 provided. To the extent that's possible between now
8 and 10:30.
9 CHAIRMAN POWERS: Yes. I mean, I don't
10 expect you to redesign the whole program.
11 MEMBER SIEBER: That would do it.
12 MR. ARAGUAS: Okay.
13 CHAIRMAN POWERS: It would be fair to say
14 'And we heard these points from the industry, and
15 we're wrestling with them.'
16 MR. ARAGUAS: Okay.
17 CHAIRMAN POWERS: That's acceptable for
18 this. I don't expect you to design a whole program
19 here.
20 MEMBER SIEBER: But maybe by Friday.
21 CHAIRMAN POWERS: Monday morning's plenty
22 early enough.
23 MEMBER SIEBER: Slacking off.
24 CHAIRMAN POWERS: But the general level
25 and whatnot of your presentation was just fine.

1 MR. ARAGUAS: Okay.

2 CHAIRMAN POWERS: Any other comments

3 members would like to make? Seeing none, I thank

4 everybody very much. I really very much appreciated

5 all that you had to say, and I appreciated the thought

6 that went into it, same with the staff. And with that

7 I'll adjourn this meeting.

8 (Whereupon, the foregoing matter went off

9 the record at 4:55 p.m.)

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CERTIFICATE

This is to certify that the attached proceedings before the United States Nuclear Regulatory Commission in the matter of:

Name of Proceeding: Advisory Committee on Reactor Safeguards Early Site Permits

Docket Number: n/a

Location: Rockville, MD

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.

Charles Morrison
Official Reporter
Neal R. Gross & Co., Inc.

Entergy Early Site Permit Lessons Learned Discussion

Presentation to
Advisory Committee on Reactor Safeguards
Subcommittee on Early Site Permits
September 6, 2006
George Zinke, Entergy

Entergy

ESP Lessons Learned Discussion

- Expectations
  - Process supportive of High Quality Submittals
    - Timely preparation of application
    - Application Content fixed
    - NRC Acceptance Criteria known
    - Consistent with Regulations
    - Focused on Public Health & Safety
  - Stable and Predictable Licensing Process
  - Reasonable Schedules supportive of Business Needs

Entergy

North Anna Early Site Permit Lessons Learned

Presentation to

Advisory Committee on Reactor Safeguards

Subcommittee on Early Site Permits

September 6, 2006

Dominion

ESP Lessons Learned

- The lessons learned apply to site issues
  - Submittal of an ESP may move evaluation of site issues earlier in time, but the issues/lessons remain the same for a COL applicant
- Seismic Methodology
  - Support ASCE methodology for long term
  - Clarify SSE definition—free ground surface, foundation level
  - Further work needed on high frequency effects
  - Support continued interactions between NRC Staff and NEI Seismic Issues Task Force

Dominion

ESP Lessons Learned

- Plant Parameters Envelope
  - Difficult concept initially
    - Regulations and guidance not structured to support
    - However, it remains an appropriate approach
  - PPE provides the same level of finality as specific design
  - Pare down list of parameters to important ones
- Emergency Planning
  - Major features approach is a reasonable concept
  - Level of NRC review and resources required to support major features approach was inconsistent with applicant expectations for an existing site with an approved emergency plan

Dominion

ESP Lessons Learned

- Snow Load
  - NRC guidance should be clarified on combination of 100 year snow load plus 24 hour winter precipitation when maximum winter season precipitation is in the form of rain
- X/Q
  - Clarify guidance to allow for a conservative approach (e.g., no wake effects, minimum distances) or a more detailed calculation
- Use of Internet Data
  - NRC guidance needed
- Sources for Site Information
  - Early agreement needed between NRC Staff and applicant
  - Should occur during pre-application phase
  - Examples: meteorology, geology, etc.

Dominion

NRC Early Site Permit Review Lessons Learned

Presentation to:

Advisory Committee on Reactor Safeguards
Subcommittee on Early Site Permits

September 6, 2006

Staff ESP Lessons Learned

- Criteria for Identifying Site Characteristics and Controlling Plant Parameter Envelope (PPE) Values Included in an ESP
- Criteria for Identifying Permit Conditions and Combined License (COL) Action Items in an ESP
- Commission's Expectation for High-Quality Applications

Staff ESP Lessons Learned

Update ESP Review Guidance to Address Issues Raised During First Of-A-Kind Review Process

- Criteria for Identifying Site Characteristics, Controlling PPEs, COL Action Items, Permit Conditions
- Performance-Based Methodology for Seismic Hazards
- Major Features of the Emergency Plan
- Applicability of 10 CFR Part 21 to ESP Applicants
- Applicability of Appendix B to 10 CFR Part 50 to ESP Applicants
- Criteria for Computing Probable Maximum Flood

ACRS Identified Lessons Learned During the ESP Review Process

- Review the Staff's Analysis of the Hazards Posed to the Proposed Site by Explosions in Transportation Accidents on the Mississippi River
- Review the Development and Study of Climate Change for the Next 20 Years
- RS-002 Should Clarify How and ESP application can Rely on the Emergency Plans for the Existing Nuclear Power Plant

Exelon.
Nuclear

ACRS Presentation
September 6, 2006

Early Site Permit Application
Clinton Power Station Site
Lessons Learned Discussion

Exelon.
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"Common Understandings"

- Essential to high quality applications
- Essential to maintaining schedules
  - NRC must be clear about intentions
    - o Provide up-to-date guidance
  - Applicant must be clear about intentions
    - o Inform NRC via pre-application discussions

Exelon.
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ACRS Presentation
September 6, 2006

Early Site Permit Application
Clinton Power Station Site
Lessons Learned Discussion

Exelon.
Nuclear

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