

Official Transcript of Proceedings ACRST-3367

NUCLEAR REGULATORY COMMISSION

Title: Advisory Committee on Reactor Safeguards
536th Meeting

Docket Number: (not applicable)

PROCESS USING ADAMS
TEMPLATE: ACRS/ACNW-005
SUNSI REVIEW COMPLETE

Location: Rockville, Maryland

Date: Wednesday, October 4, 2006

Work Order No.: NRC-1272

Pages 1-172

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

October 4, 2006

The contents of this transcript of the proceeding of the United States Nuclear Regulatory Commission Advisory Committee on Reactor Safeguards, taken on October 4, 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.

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS (ACRS)

536th MEETING

+ + + + +

WEDNESDAY,

OCTOBER 4, 2006

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ROCKVILLE, MARYLAND

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The Committee met at the Nuclear
Regulatory Commission, Two White Flint North,
Room T2B3, 11545 Rockville Pike, at 8:30 a.m.,
Graham B. Wallis, Chairman, presiding.

COMMITTEE MEMBERS PRESENT:

GRAHAM B. WALLIS	Chairman
WILLIAM J. SHACK	Vice Chairman
SAID ABDEL-KHALIK	Member
GEORGE APOSTOLAKIS	Member
J. SAM ARMIJO	Member
MARIO V. BONACA	Member
MICHAEL CORRADINI	Member
THOMAS S. KRESS	Member

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1 COMMITTEE MEMBERS PRESENT: (cont'd)

2 OTTO L. MAYNARD Member

3 DANA A. POWERS Member

4 JOHN D. SIEBER Member-At-Large

5

6 ACRS STAFF PRESENT:

7 MICHAEL SNODDERLEY, Designated Federal Official

8 JIM PULSIPHER

9 ROBERT DENNIG

10 STEVE KOENICK

11 JOHN MONNINGER

12 STEVE O'CONNOR

13 BILL RALEIGH

14 TONY CHAU

15 SYED SHAUKAT

16 RICHARD BARRETT

17 KURT COZENS

18 JOHN TAPPERT

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AGENDA ITEM

PAGE

Opening Remarks by the ACRS Chairman	4
Draft Final Revision 3 to Regulatory Guide 1.7 "Control of Combustible Gas Concentrations in Containment"	8
Proposed Updates to Regulatory Guides and Standard Review Plan (SRP) Sections in Support of New Reactor Licensing	40
Master Integrated Plan for New Reactor Licensing Activities	93

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

(8:32 a.m.)

CHAIRMAN WALLIS: Good morning. The meeting will now come to order.

This is the first day of the 536th meeting of the Advisory Committee on Reactor Safeguards. During today's meeting, the Committee will consider the following: the Draft Final Revision 3 to Regulatory Guide 1.7 entitled "Control of Combustible Gas Concentrations in Containment," Proposed Updates to Regulatory Guides and Standard Review Plan Sections in Support of New Reactor Licensing, Master Integrated Plan for New Reactor Licensing Activities, Draft Report on the Quality Assessment of Selected NRC Research Projects, Plant License Renewal Subcommittee Report, and the Preparation of ACRS Reports.

This meeting is being conducted in accordance with the provisions of the Federal Advisory Committee Act. Mr. Michael Snodderley is the Designated Federal Official for the initial portion of the meeting.

We have received no written comments or requests for time to make oral statements from members of the public regarding today's sessions.

A transcript of portions of the meeting is

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1 being kept, and it is requested that the speakers use
2 one of the microphones, identify themselves, and speak
3 with sufficient clarity and volume so that they can be
4 readily heard.

5 I have a few items of current interest to
6 the Committee. Mr. Gary Hammer joined the ACRS staff
7 on October 2nd. He has a B.S. in Mechanical
8 Engineering from the University of Tennessee. He has
9 nine years of experience as a design engineer of
10 piping systems, including design of safety-related
11 nuclear powerplant piping. When he came to the NRC in
12 1982 he was a reviewer of safety issues associated
13 with mechanical components and systems.

14 He has reviewed numerous plant-specific
15 licensing actions regarding operation and testing of
16 pumps and valves, and has been involved in the
17 identification and resolution of several generic
18 issues. He has also reviewed several issues involving
19 seismic and fluid dynamic loads on safety components,
20 including valves, piping, and vessel internals.

21 He has assisted the regions with plant
22 inspection activities regarding mechanical design
23 issues. He has also assisted RES in resolution of
24 issues regarding severe accident response of reactor
25 coolant system components and other issues. And more

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1 recently he has worked on development a basis for the
2 transition brake size selection for risk-informing
3 10 CFR 50.46, and has reviewed several safety
4 component issues for the new passive reactor designs.
5 In other words, he is a typical worker from Tennessee.

6 (Laughter.)

7 He has also participated in ASME Code
8 Committee activities. Please welcome Gary.

9 (Applause.)

10 I have some other information for the
11 Committee. Ralph Caruso at lunch today will provide
12 a slideshow of the sump screen tests.

13 VICE CHAIRMAN SHACK: You promised us a
14 video.

15 CHAIRMAN WALLIS: Well, it is an animated
16 presentation conducted in Switzerland during lunchtime
17 today.

18 (Laughter.)

19 These were tests conducted in Switzerland.
20 The presentation will be here during lunchtime today.

21 The members are requested to provide --
22 this is an important point -- their papers and
23 presentation slides to Mugay by close of business
24 Thursday. This is for the quadripartite meeting,
25 because they will be sent for printing on Friday. So

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1 any corrections or anything like that that you need to
2 make to slides or presentations or papers need to be
3 made today or tomorrow.

4 The other items that members should pay
5 attention to is that we all have to propose a course
6 of action with regard to our review of the regulatory
7 guides and SRP sections. And some of these have been
8 assigned to you individually, and we're going to
9 discuss that this evening, so please be ready to
10 discuss the guides that were assigned to you.

11 MEMBER POWERS: I got the assignment. I
12 just don't have the guides.

13 MEMBER KRESS: Yes, I have the same
14 problem.

15 CHAIRMAN WALLIS: Well, there's an
16 administrative matter which will have to be taken care
17 of.

18 MEMBER ARMIJO: They've got now. I think
19 they will --

20 CHAIRMAN WALLIS: So we'll attempt to take
21 care of that, Sam, somehow appropriately?

22 MEMBER ARMIJO: Yes.

23 CHAIRMAN WALLIS: Please note in the items
24 of interest which have been handed out that the
25 Commissioners have made several speeches. I note that

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1 on the title page here Dale Klein spoke to the Women
2 in Nuclear Washington, whatever that is.

3 So let's move on to the meeting here. The
4 first item of business is the Draft Final Revision 3
5 to Reg. Guide 1.7, "Control of Combustible Gas
6 Concentrations in Containment." And my esteemed
7 colleague and co-chair, Bill Shack, is going to take
8 care of this for us.

9 VICE CHAIRMAN SHACK: Okay. This is --
10 the purpose of the meeting is to review and comment on
11 the proposed Revision 3 to Reg. Guide 1.7, "Control of
12 Combustible Gas Concentrations in Containment
13 Following a Loss of Coolant Accident." And this
14 really follows up on the -- essentially the risk-
15 informed revision of 50.44.

16 The currently active version of the guide
17 is dated November 1978, and so it really reflects
18 essentially the old 50.44. There was a revised
19 version of the reg. guide that was included in the
20 rule package when we reviewed 50.44. And although we
21 reviewed and essentially approved the changes in the
22 risk-informed 50.44, we didn't really comment on the
23 reg. guide at that time. So in a way this is kind of
24 a catch-up for us on the reg. guide.

25 This Revision 3, you know, is a complete

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1 rewrite of the old 1978 version of the guide, again,
2 because we've gone from something that was now a
3 design basis consideration to essentially a severe
4 accident consideration is obviously a substantial
5 revision. But that hasn't been finalized, and so the
6 version you have, the markup, you know, doesn't look
7 like there's very much change. But if you really
8 compare it against the 1978 version, then there are
9 substantial revisions.

10 And we're just going to discuss the review
11 guide now, and Mr. Pulsipher will be leading us
12 through that.

13 MR. PULSIPHER: Good morning, gentlemen.
14 I'm Jim Pulsipher, and this is Brian Lee, and we're --
15 we work in the Containment and Ventilation Branch in
16 NRR. And my Branch Chief, Robert Dennig, is over at
17 the side table there. And we're here this morning at
18 your invitation to talk about the revision of
19 Regulatory Guide 1.7, and also Standard Review Plan
20 6.2.5, which is the same subject, combustible gas
21 control and the containment.

22 The objectives we have today is to give
23 you a quick recap of the 2003 revision of 10 CFR
24 50.44, to discuss the final -- draft final revisions
25 of these two guidance documents, and to request

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1 approval of the revisions.

2 Some background -- the staff met with the
3 ACRS on April 10, 2003, to discuss the risk-informed
4 revision to 50.44, and the final regulatory guide,
5 SRP, and technical specifications were in the review
6 package. As you said, there was not much discussion
7 of the reg. guide during that meeting.

8 The ACRS issued a letter on April 23rd of
9 that year recommending approval of the rule. It
10 didn't specifically mention the reg. guide or the SRP.

11 SECY paper 03-127 transmitted the final
12 rule package to the Commission, which the Commission
13 approved, and the rule was published and became
14 effective on October 16, 2003.

15 A summary of the changes or the provisions
16 in 50.44, it's divided into three main sections -- one
17 covering currently operating plants; a second one
18 covering future plants, requirements for future plants
19 that are substantially like today's plants, meaning
20 water-cooled with typically zirconium cladding; and
21 then a third section for future plants that are not
22 like current plants. For example, pebble bed reactor
23 and such things where there's not even -- we're not
24 even certain there will be a hydrogen or a combustible
25 gas problem with such plants. So that's covered in a

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1 separate section.

2 The requirements for current plants and
3 future plants that are similar to current plants are,
4 not surprisingly, much alike. And we'll go through a
5 quick summary of the changes that were made from the
6 old rule. The new rule eliminated the design basis
7 accident as a source of significant combustible gas
8 and concentrates on beyond design basis accidents,
9 which, of course, produce much more hydrogen gas in a
10 much -- much more quickly than the old design basis
11 accident.

12 We eliminated the requirement for
13 recombiners or purge or repressurization systems to
14 control combustible gas, insofar as they operated much
15 too slowly to be able to handle the rapid production
16 of hydrogen during a beyond design basis accident.

17 We retained requirements for oxygen and
18 hydrogen monitors, but they don't have to be safety
19 grade at this -- anymore. And we structured the rule
20 applicability based on containment type rather than on
21 the fuel type or the cladding type. We don't
22 specifically mention zirconium in the rule anymore,
23 for example.

24 MEMBER POWERS: You seem to equate
25 combustible gas and hydrogen.

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1 MR. PULSIPHER: Well, not completely of
2 course. There are other forms of combustible gas that
3 can be produced during beyond design basis accidents
4 certainly. I mean, I mentioned hydrogen in this case
5 because the rules talk about, you know, a reaction of
6 water with the fuel cladding, typically zirconium, of
7 in the case of current plants 75 percent, and future
8 plants 100 percent reaction. So that's a major
9 source, clearly, of the combustible gas. Oh, yes, we
10 primarily talk about hydrogen.

11 CHAIRMAN WALLIS: Well, the other --

12 MEMBER POWERS: Well, what I'm struggling
13 with is the -- even in a modern PWR, you've got boron,
14 carbide control rods that react from carbon monoxide.
15 Certainly, if you go on and say you're going to
16 actually look at advanced reactors, you're talking
17 about the options for carbon monoxide, etcetera,
18 etcetera.

19 MR. PULSIPHER: Certainly.

20 MEMBER POWERS: So, I mean, does the reg.
21 guide accommodate something other than hydrogen? The
22 problem with hydrogen -- problem -- the advantage of
23 hydrogen, it has an extraordinarily high diffusivity,
24 so it's very difficult to maintain a combustible
25 concentration locally. Not the case for other

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1 combustible gases.

2 MR. PULSIPHER: Yes, sir.

3 CHAIRMAN WALLIS: So what's the answer?

4 MR. PULSIPHER: I don't have a good answer
5 for that at this particular point, since that is part
6 of the rule that was put in place three years ago. If
7 Mr. Snodderley is in the room, he is actually -- he
8 was our technical expert at this --

9 MEMBER POWERS: Ah ha. Now we understand
10 more about this.

11 CHAIRMAN WALLIS: Mr. Snodderley has taken
12 his cue and left.

13 (Laughter.)

14 MEMBER POWERS: As well he should.

15 MR. PULSIPHER: Well, as I remember the
16 discussion that occurred at the previous Committee
17 meeting on this, I believe that we -- we think that
18 specifying a certain amount of fuel cladding coolant
19 reaction ultimately encompasses or envelopes the kind
20 of expected production of combustible gas that occurs
21 during beyond design basis accidents.

22 VICE CHAIRMAN SHACK: But there are
23 requirements for mixing systems, too, which I think --

24 MR. PULSIPHER: Oh, certainly.

25 VICE CHAIRMAN SHACK: -- goes more

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1 directly to Dana's concern that things can localize.

2 MR. PULSIPHER: One of the major tenants
3 of the new rule is that the atmosphere in the
4 containment needs to be well mixed during an accident,
5 regardless of the design.

6 VICE CHAIRMAN SHACK: Right. I think that
7 was sort of addressing his issue.

8 MR. PULSIPHER: Right.

9 MEMBER POWERS: When I look at things like
10 the AP 1000 or the ACR 700, and probably a number of
11 other reactors, I see cooling up in the dome space.
12 And when I think about hydrogen and steam mixtures
13 going up into the dome space where the steam component
14 of it can condense out, I think perhaps a
15 stratification of hydrogen and don't see typically
16 active systems to assure that there is mixing.

17 I encounter rigorous arguments of esoteric
18 nature about the natural tendencies for mixing that I
19 don't pretend to understand, and I'm sure that they
20 misrepresent the momentum equation, since no one seems
21 to get it quite right.

22 Is your role demanding that I'm not going
23 to have to look at that anymore?

24 MR. PULSIPHER: Well, the rule -- the rule
25 requires that the atmosphere be well mixed. It

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1 doesn't -- the rule itself doesn't go into much of a
2 discussion about exactly what this means.

3 MEMBER POWERS: So what you're saying is
4 somebody could come along and appeal to natural
5 convective processes, naturally occurring, to achieve
6 this mixing. It doesn't have to be an active system.

7 MR. PULSIPHER: I think that the -- I
8 mean, that would be part of what they would probably
9 propose. We do consider the spray systems and the --
10 you know, some design's fan cooler systems to be
11 mixing systems, although that's not their primary
12 function. Their function is to cool the containment.

13 MEMBER POWERS: Yes. And I would think
14 that they would be marvelous at assuring that we would
15 get a hydrogen stratification. If a licensee appeals
16 to the gods of Navier and Stokes to achieve mixing,
17 does the agency have the capability to validate and
18 confirm those arguments?

19 MR. PULSIPHER: I believe we do, yes.

20 MEMBER POWERS: How would they do that?

21 MR. PULSIPHER: Well, I'm not the one who
22 would be figuring that out, unfortunately. We have --

23 MEMBER POWERS: Who would do that for us?

24 MR. PULSIPHER: We have some technical
25 experts in NRR who discuss such -- have discussed such

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1 terms as diffusivity and some other things that I
2 don't -- also don't really understand well, who can --
3 we can perform those.

4 MEMBER POWERS: Yes. It would certainly
5 be interesting for us to understand better this,
6 because I, quite frankly, don't think they have the
7 capability. I think they would rely on the contain
8 code that doesn't solve the momentum equation at all.
9 They might appeal to some of the CFD capabilities,
10 which we've seen which are impressive, but I don't
11 know that they've addressed the peculiar issues of
12 multi-component diffusion of hydrogen.

13 MEMBER CORRADINI: Can I ask Dana's
14 question? I'm not sure where -- I know what he's
15 asking, but I'd ask it slightly differently, which is,
16 is the limit you said you've encapsulated by -- in
17 future license -- future plants as 100 percent,
18 another way to ask this is, has anybody done a
19 calculation, say, if you did that with a certain set
20 of conditions, that you actually wouldn't approach
21 some sort of boundary where you'd actually get
22 stratification?

23 Because I think what his point is
24 physically is you could get a high enough hydrogen
25 concentration that you'd essentially distill out the

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1 steam. And this just sits up there as a cap. And I
2 don't -- I think he is correct that you're not going
3 to get natural forces to stir it. Just the opposite.
4 The old HDR experiment showed just the opposite.
5 You'd probably pocket it, and it would just stay there
6 nice and -- nice and pocketed.

7 So I think --

8 CHAIRMAN WALLIS: And stratification tends
9 to kill turbulence anyway, so that some of your
10 turbulence models don't work, even if you put in your
11 momentum equation.

12 MEMBER POWERS: Oh, my God, don't tell me
13 that, Graham.

14 MEMBER CORRADINI: But I guess the way I
15 would ask -- the way I would phrase the question I
16 think he is asking is: does the cap at 100 percent
17 get you in a regime where you actually -- one of the
18 physical forces you're expecting to occur essentially
19 has shut itself down? And has somebody looked at it?
20 That's what I heard him ask potentially.

21 MEMBER POWERS: A fair assessment, Mike.

22 CHAIRMAN WALLIS: Interesting. We're sort
23 of down the road here. We should have asked these
24 questions in 2003 maybe when the --

25 MEMBER POWERS: I'm slow on the uptake,

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1 Graham.

2 CHAIRMAN WALLIS: Well, maybe we did. I'm
3 trying to remember what we asked in 2003.

4 MEMBER POWERS: Well, you know, you can
5 argue that in 2003 in the rule you can say you have to
6 have mixed. Basically, the reg. guide still says you
7 just have to have mixed, and that's about as much
8 guidance as you get.

9 MEMBER KRESS: Well, as best I remember,
10 we didn't worry about the inerted containments,
11 because there's no oxygen. And for the other types of
12 containments, they're requiring to have igniters. And
13 there was some discussion that these igniters would
14 intercept the hydrogen, or what other combustible gas
15 came down, at the correct points to both dissipate it
16 and get rid of it and promote the natural circulation.

17 Now, that's my recollection of how we
18 dealt with it back then. And I'm not sure that we
19 hadn't anything other than just judgment on that. I
20 don't think we ever saw any calculations at all.

21 MEMBER ARMIJO: Well, aren't there
22 igniters even on inerted containments?

23 MR. PULSIPHER: No, sir.

24 MEMBER POWERS: How would you have an
25 igniter in an inerted containment?

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1 MEMBER ARMIJO: Because sometimes the
2 inertion -- inerted containments don't work.

3 MEMBER POWERS: Yes, but the igniter isn't
4 going to work either.

5 MEMBER ARMIJO: Well, if you get oxygen --

6 CHAIRMAN WALLIS: Yes, you make hydrogen
7 and oxygen.

8 MEMBER KRESS: But I think Dana has a
9 really good point, because we've never seen any
10 definitive analysis that shows you don't concentrate
11 hydrogen somewhere in some of these -- particularly in
12 some of these new plants like the AP 1000.

13 I think I agree with him. I think the
14 sprays would tend not to -- would tend to exacerbate
15 the --

16 CHAIRMAN WALLIS: Are we suggesting the
17 rule should be revisited? Because this reg. guide has
18 to go along with the rule, whatever it is, as it is.

19 MEMBER CORRADINI: I guess, if I could
20 just suggest -- I guess what Dana's -- the way I read
21 Dana's question to you guys is that if you're going to
22 think through well mixed, you're essentially going to
23 have to have an analytical path to decide whether it's
24 well mixed or not, given the conditions.

25 And my own personal prejudice is not to

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1 rely on a computer code to tell you that; rather, to
2 rely on some sort of physical limits. And that's why
3 I was asking, with 100 percent oxidation, are you with
4 certain designs at a physical limit that you're still
5 potentially well mixed because of the laws of it
6 rather than the calculation?

7 But I guess what I'm saying is I -- I'm
8 too new to all of this. Assuming the reg. guide --
9 assuming the rule has changed and this is your reg.
10 guide to help decide it, you've got to have a plan of
11 action when some new geometry and new levels pop up
12 and you're going to have to analyze. That's all I'm
13 -- that's what my concern is.

14 MR. DENNIG: This is Bob Dennig. What we
15 have is the significant amount of work that was done
16 at the time the rule was written. There was a task
17 force or task group. So science-wise that's what we
18 have.

19 Now, in terms of the checking that gets
20 done, if you will, vis-a-vis the reg. guide, likely to
21 go into more detail would mean diving back into that
22 stuff at this time and pulling out some of that
23 detail. And I don't know personally how definitive
24 that is, but we can certainly take your comment.

25 MEMBER POWERS: It seems to me that a reg.

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1 guide that simply doesn't provide much guidance, it
2 didn't provide guidance in the areas that are
3 contentious and difficult, yet there are areas that
4 come up routinely. And as we evolve cores and what
5 not, you're going to encounter these more often, and
6 we've got to get both licensees and the staff help to
7 know what to -- what snake exists in this woodpile.

8 MR. DENNIG: Yes. I think we should just
9 take your point and move on, if we could.

10 MEMBER POWERS: That would be great.

11 MR. PULSIPHER: All right. To go back to
12 a summary of the changes that were made in 50.44 for
13 future reactor licensees, we did consolidate into the
14 -- into 50.44 the various other parts of the
15 regulations that had things to say about combustible
16 gas controls, such as 50.34, and there was something
17 in 50.46, and the last part of this slide talks about
18 the conforming changes that were made to those other
19 regulations to, in essence, remove those requirements
20 from there and to put them into 50.44, so that all of
21 the requirements would be in one place.

22 CHAIRMAN WALLIS: That's a good point.

23 MR. PULSIPHER: Regulatory Guide 1.7,
24 Revision 3, as has been pointed out, is very different
25 from Revision 2. However, the version that we're

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1 looking at here today is virtually identical to the
2 version that was included in the SECY paper back in
3 2003. It provides detailed guidance on implementing
4 the rule, although not a whole lot in terms of mixed
5 atmosphere.

6 A few of the provisions in the reg. guide
7 actually are taken from the old 50.44 rule -- for
8 example, the guidelines on calculating containment
9 structural integrity, which were from the old rule.
10 The regulatory guide has five regulatory positions --
11 combustible gas control systems, which is -- generally
12 talks about hydrogen igniters, combustible gas
13 igniters; discussion of oxygen and hydrogen monitors;
14 atmosphere mixing systems; hydrogen gas production;
15 and containment structural integrity.

16 There was one non-editorial change that we
17 made to the reg. guide compared to what was in the
18 SECY paper. It was a clarifying footnote for
19 regulatory position 2. We added it in response to a
20 comment that came to us after the rule was revised
21 from the Nuclear Utility Group on equipment
22 qualification.

23 Their concern was that, although the rule
24 does not require environmental qualification as per
25 50.49 for oxygen monitors, it appeared that the

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1 regulatory guide was saying that they had to be
2 qualified in accordance with 50.49.

3 CHAIRMAN WALLIS: Could you go back over
4 something for me?

5 MR. PULSIPHER: Yes, sir. CHAIRMAN WALLIS:

6 CHAIRMAN WALLIS: As I remember it, this
7 was at the time said to be one of the successes of
8 risk-informed regulation.

9 MR. PULSIPHER: Yes, sir.

10 CHAIRMAN WALLIS: Now, you haven't said
11 anything about the risk-informed side of it. But
12 maybe that has something to do with the way in which
13 decisions were made to consider or not consider some
14 of the physics? Or ways in which the probabilities of
15 various kinds of physics were evaluated or something?
16 Or how did the risk-informed part come into this?

17 MR. PULSIPHER: Well, risk-informed
18 insights were used as really the basis for the whole
19 rule change, which was, I mean, they old 50.44 --

20 CHAIRMAN WALLIS: Was it that certain
21 kinds of situations were highly unlikely, or that led
22 to the rule change?

23 MR. PULSIPHER: The thought was that the
24 old design basis hydrogen control accident was found
25 not to be very risk-significant. Hydrogen was

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1 produced on a slow pace over a period of days by such
2 things as corrosion of zinc, paint, and aluminum,
3 metal in the containment, and radiolysis, and hydrogen
4 recombiners were turned on sometimes a day or two into
5 the accident and they slowly brought the hydrogen
6 concentration back down.

7 Risk calculations showed that that
8 sequence didn't contribute much to the risk. That, in
9 fact, beyond design basis accident sequences ended up,
10 because of their consequences and the much larger
11 amounts of hydrogen that could be produced, to be more
12 risk-significant.

13 So the -- it was on the basis of these
14 risk calculations that the rule was changed to
15 eliminate, in essence, the old design basis hydrogen
16 control accident, and address these beyond design
17 basis accidents where there can be large amounts of
18 reaction between zirconium and water, producing large
19 amounts of hydrogen.

20 CHAIRMAN WALLIS: And then, what was the
21 argument, then, about the lack of need for recombiners
22 in that case?

23 MR. PULSIPHER: The combustible gas is
24 produced so quickly in those --

25 CHAIRMAN WALLIS: It wouldn't have any

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1 effect?

2 MR. PULSIPHER: That's right. They
3 wouldn't have a significant effect on controlling the
4 concentrations.

5 CHAIRMAN WALLIS: No matter where the gas
6 was.

7 MR. PULSIPHER: That's true. Yes, sir.

8 MEMBER POWERS: What's curious to me is
9 that I see lots of activity, both in Canada and in
10 Europe, where people appeal to passive catalytic
11 hydrogen recombiners in containment, and seem very
12 happy with them to control hydrogen accumulation in
13 any variety of accidents, be they design basis or
14 beyond design basis.

15 I don't see much interest in that in the
16 United States, and I wondered why that was.

17 MR. PULSIPHER: In the Federal Register
18 notice for the publication of the 50.44 revision,
19 there are several paragraphs addressing that very
20 point. I think to summarize them, although we
21 recognize the European approach with large numbers of
22 passive hydrogen recombiners to control these events,
23 we determined that our -- that the approach that we
24 were using and had been using for some time in terms
25 of hydrogen igniters and the ice condensers and the

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1 MARK III BWRs, and so on, and inerting of the MARK I
2 and MARK II containment BWRs, was sufficient, and that
3 the large dry PWR containments were robust enough to
4 withstand the consequences of combustion during a
5 beyond design basis accident.

6 CHAIRMAN WALLIS: I think we went through
7 these arguments in 2003. So you're sort of recapping
8 them.

9 MR. PULSIPHER: Yes. Yes, sir.

10 MEMBER KRESS: The large dries don't have
11 to have anything.

12 MR. PULSIPHER: Other than a mixed
13 atmosphere and hydrogen monitors, that's correct.

14 MEMBER KRESS: I guess that's where we
15 need to worry about stratification.

16 MR. PULSIPHER: They just don't have a
17 requirement to have a mixed atmosphere during an
18 accident.

19 MEMBER KRESS: They can stand a full
20 combustion, but I'm not sure they can stand a
21 detonation. That's where we'd have to worry about
22 stratification.

23 MEMBER CORRADINI: So just for my own
24 edification, where could I go -- could you point me,
25 not now, but after maybe we're done, pointing me to

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1 the -- some at least talking points that the staff is
2 using to think through criteria for well mixed versus
3 not well mixed?

4 MR. PULSIPHER: We'll have to get back to
5 you on that, yes.

6 MEMBER KRESS: This I remember was
7 temperature gradients and temperature differences
8 driving natural convection.

9 MEMBER CORRADINI: But I think just so you
10 understand why I'm siding with the young man over
11 there is that it may not be temperature-driven. It
12 may be essentially the -- what I'll call the mixture
13 molecular weight. If I have this room, and I throw up
14 a mixture of steam and air and hydrogen, and I allow
15 condensation up here, I could get stratification
16 because the mixture molecular weight up here at the
17 top of the room is different than the mixture
18 molecular weight down here.

19 And it has nothing to do with -- except
20 for the fact that I'm cooling it, it has nothing to do
21 with the temperature gradient within the room. It
22 could be just the compositional differences. That's
23 what I think. That's what I hear what Dana is
24 thinking.

25 MEMBER KRESS: Unless the temperature

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1 gradients are strong enough to override that.

2 MEMBER CORRADINI: Right. Right.

3 CHAIRMAN WALLIS: The temperature
4 gradients are proposed in that.

5 MEMBER CORRADINI: Right.

6 CHAIRMAN WALLIS: If you have a big steam
7 leak in a lab, which we have had, what tends to happen
8 is that there's a level of steam from here, say to the
9 roof, and down below it's all clear. There's a very
10 clear stratification if you have a big steam leak in
11 a lab.

12 MEMBER CORRADINI: I'd just be curious to
13 see what criteria you guys are thinking about relative
14 to that, so I understand your thinking process.

15 MR. PULSIPHER: We will certainly take
16 that comment and try to address it.

17 CHAIRMAN WALLIS: But, essentially, this
18 guy is just responding to decisions already --

19 MEMBER CORRADINI: Right.

20 CHAIRMAN WALLIS: -- made in the rule.

21 MEMBER CORRADINI: Yes. So this is just
22 my own edification.

23 MR. DENNIG: If I could just read from the
24 statement of consideration for the rule. "Mixed
25 atmosphere -- the requirement for capability ensuring

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1 a mixed atmosphere in all containments is consistent
2 with the current requirement and does not require
3 further analysis or modification by current licensees.

4 "The intent of this requirement is to
5 maintain those plant design features -- for example,
6 availability of active mixing systems or open
7 components that promote atmospheric mixing. The
8 requirement may be met with active or passive systems.
9 Active systems may include a fan, a fan cooler, or a
10 containment spray.

11 "Passive capability may be demonstrated by
12 evaluating the containment for susceptibility to local
13 hydrogen concentration." That sounds like the
14 important sentence. "Passive capability may be
15 demonstrated." These evaluations have been conducted
16 for currently licensed reactors as part of the IPE
17 program.

18 So, in theory, the technology that was
19 used in the IPE program would translate over into the
20 passive crediting for keeping away from a hydrogen
21 concentration. And I am sure that somewhere there is
22 a guidance document for IPE methodology. But what we
23 will -- what we will do in response to the comments is
24 go back to that and see if there's a finer level of
25 detail that should be entertained for guidance

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1 purposes.

2 MEMBER CORRADINI: My only thought is that
3 eventually we'll all go away, and somebody else is
4 going to have to understand this. And somewhere in
5 there is some basic physical laws that one ought to
6 look at.

7 CHAIRMAN WALLIS: You want to look at as
8 the way in which containment models work out.

9 MEMBER CORRADINI: Right.

10 CHAIRMAN WALLIS: They are capable of
11 predicting.

12 MEMBER ABDEL-KHALIK: And perhaps also
13 what the meaning of the word "well mixed" is. Is it
14 a one percent gradient or a 10 percent variation?

15 MR. PULSIPHER: The definition of that
16 that we have in the rule is -- or in the reg. guide is
17 that no -- no concentration or local concentration of
18 combustible gas is greater than 10 percent, presumably
19 to prevent a detonable mixture.

20 MEMBER CORRADINI: Yes.

21 MR. PULSIPHER: That's the way it's
22 defined.

23 MEMBER CORRADINI: Okay.

24 CHAIRMAN WALLIS: Okay. And your next one
25 is simply what the review plan -- which sort of goes

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1 along with the guide.

2 MR. PULSIPHER: Yes. The standard review
3 plan revision -- in this case, we've written it to
4 address -- not to address current plants, since
5 current plants don't have to conform to the new SRP
6 revision. And since the future -- I'll call them --
7 non-LW -- non-light water reactor plants are
8 potentially so different from current plants that we
9 didn't feel it was worthwhile trying to put that in a
10 standard review plan.

11 The standard review plan addresses only
12 future plants that are like current plants, and for
13 the other types of plants we are -- they are referring
14 to the guidance in the regulatory guide and in --

15 CHAIRMAN WALLIS: This is perhaps where
16 the problem is, because you may have a non-light water
17 reactor plant which produces no hydrogen at all. It
18 produces something else.

19 MR. PULSIPHER: Indeed. And not really
20 knowing at the time that the rule was written what
21 kind of --

22 CHAIRMAN WALLIS: The guidance in reg.
23 guide 1.7, then, doesn't help them at all, because it
24 talks all about hydrogen.

25 MR. PULSIPHER: That is true. The --

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1 CHAIRMAN WALLIS: What's the use of
2 referring them to that guidance?

3 MR. PULSIPHER: Well, we refer them to the
4 reg. guide and the rule itself. The rule has a very
5 general statement that for those kinds of plants they
6 first have to determine if they even have a potential
7 combustible gas problem or vulnerability.

8 And then, if they do, that they have to
9 take necessary steps to -- I think the words are to
10 protect public health and safety. I mean, it's very
11 general. We didn't want to start putting in
12 percentages of concentrations or any of that sort of
13 thing.

14 MEMBER POWERS: I think I have some
15 understanding of the concentrations of hydrogen
16 necessary to sustain both deflagration and detonation
17 at room temperature. I have some understanding of how
18 those deflagration limits vary with temperature.

19 I don't have any feeling about how the
20 detonation limits vary with temperature. And it seems
21 to me that containments under accident conditions
22 might not be at room temperature.

23 MR. PULSIPHER: Certainly.

24 MEMBER POWERS: I guess what I'm asking
25 is, when we set those temperatures -- those

1 concentrations, whether we set them quantitatively or
2 think about them qualitatively, do we recognize that
3 the limits probably have some temperature dependence?

4 MR. DENNIG: Yes. Once again, Dr. Powers,
5 I think we're going to have to -- in order to answer
6 your question precisely, we would have to go back into
7 the supporting basis for that turns into
8 generalizations in a rule to understand what was or
9 was not considered at the time and got left by the
10 side and was not considered something that needed to
11 be cited in and of itself in the rule.

12 It may very well be that the kinds of
13 things that you're raising were considered by the
14 people that did the research, and somehow they roll up
15 into some conclusion, because they're covered or
16 they're bounded. But in order to see if they actually
17 were on the checklist, we'd have to go back and look
18 through what they -- what they catalogued.

19 MEMBER POWERS: Perfectly well understand
20 that.

21 CHAIRMAN WALLIS: Well, we have some more
22 time if you wanted to ask more questions.

23 MEMBER KRESS: Well, I think Dana's
24 questions about the detonation limit as a function of
25 temperature is a good one. As best I remember, that

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1 was one of the unanswered questions back when we were
2 doing containment reviews. And as best I remember,
3 there was some speculation that it -- that
4 concentration with detonation varied as a square root
5 of the temperature. And I don't know where that came
6 from.

7 MEMBER CORRADINI: Those are from -- I
8 thought those are from the experiments done in -- up
9 in --

10 MEMBER KRESS: Up in --

11 MEMBER CORRADINI: I was going to say at
12 -- I was going to think of Lee at McGill, I thought.

13 MEMBER KRESS: Oh, yes.

14 MEMBER CORRADINI: Had done some small-
15 scale detonation experiments. I'm pointing to you,
16 because I remember it was the Sandia group that
17 actually found that work, and then proceeded to expand
18 upon it, if I remember correctly.

19 MEMBER POWERS: Since I wasn't involved,
20 I don't know, Mike. I know that the deflagration
21 limits vary approximately linearly with temperature.

22 MEMBER CORRADINI: Okay.

23 MEMBER POWERS: But, so, I mean, the truth
24 of the matter is you go from a chain to a free radical
25 kind of mechanism. So I don't know. And a square

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1 root of two would say that it's basically a
2 diffusivity --

3 MEMBER KRESS: Yes, it's a diffusivity
4 limit.

5 MEMBER POWERS: -- process, which is not
6 beyond the explanation. I simply don't know.

7 And, you know, the only thing I'm raising
8 a lot of detailed questions here -- but in designing
9 reg. guides, you know, how much guidance do you
10 provide? And where do you send people to look? And
11 things like that.

12 And I see lots and lots of stuff coming
13 out on especially the advanced reactors, which were,
14 quite frankly, very cavalier in these combustion
15 areas, and I presume a lot of confidence that I simply
16 don't have.

17 MEMBER KRESS: Yes, I thought the
18 combustion or detonation limit at room temperature was
19 deemed to be like 12 percent, and then they dropped it
20 down to 10 because of uncertainties of --

21 MEMBER POWERS: I have seen detonations,
22 experimentally determined detonations, as low as 10.5
23 percent. They are very, very dependent upon the level
24 of turbulence in the geometry that exists. And I
25 think that's -- I mean, lots and lots of these

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1 detonation limits and things like that were set up by
2 the United -- the Bureau of Mines back in the '40s,
3 '30s and '40s. And the accomplishment that has
4 occurred since then has been really to recognize a
5 couple of things -- the importance of a third
6 component in a gas base, and the geometry dependent.

7 If you look at the old Bureau of Mines
8 stuff, they'd say 18 percent, but they did all the
9 work in a tube that was one inch in diameter. As soon
10 as you go up to four inches in diameter, you drop down
11 to the 11-1/2 or 12 percent. You can up to a foot in
12 diameter and put some obstacles in, you get these
13 deflagration to detonation transitions, depending on
14 the level of turbulence that you have, that can drop
15 your -- your concentrations down.

16 Now, having said all that, so what?
17 Because the configurations that are concerned never
18 have all these obstacles and things like that, except
19 possibly in the ice condenser beds. But the dome
20 regions -- there are not a whole lot of obstacles.
21 There are closed rooms and things that you had in the
22 HDR experiments. You don't have that sort of stuff.

23 On the other hand, what you do find is the
24 threat is higher, because, you know, instead of having
25 nice spheres where most of the experiments were done,

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1 you have these god awful geometries where you get
2 reflecting and reinforcing waves, things like that.
3 So it gets all very complicated.

4 My concern is that before we provide reg.
5 guides that we explore -- we need to explore these
6 further as we go into more exotic kinds and less
7 familiar designs. I think we're in very good shape
8 with the existing plants with the igniter systems that
9 we have imposed on the weaker plants, and big, strong
10 horse containments in the large dries, things like
11 that.

12 But we've got other kinds of plants coming
13 along, and we need to provide the guidance, both to
14 the licensee and staff, and we're going to explore
15 this in fairly close detail, because there's a lot of
16 stuff that, quite frankly, gets into the Navier or
17 Stokes equations and gets Professors Wallis and
18 Corradini really excited.

19 (Laughter.)

20 CHAIRMAN WALLIS: Which way are we going
21 here? Are we going to say that this reg. guide, as it
22 is now, is appropriate for now, but in the future that
23 we foresee changes that are necessary in it, or are we
24 going to say it's not adequate now and needs some
25 changes now? Which sort of conclusion are we coming

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1 down on?

2 MEMBER CORRADINI: Personally, I think
3 it's the former for me, the first one that you were
4 saying, that there might be additional things.

5 CHAIRMAN WALLIS: We may write a letter
6 that says it's great now, but these are things to
7 watch out for.

8 MEMBER CORRADINI: I think you really do
9 want to give the staff and the licensee more guidance
10 on certain things, so that there's some rational
11 methods being done to determine it. And I think the
12 area of mixing that Dana had brought up is important.

13 CHAIRMAN WALLIS: Do any other members of
14 the Committee --

15 MEMBER KRESS: Well, I would add the
16 detonation limit to that importance as a function of
17 temperature.

18 CHAIRMAN WALLIS: Got it. Bill, it's
19 your --

20 VICE CHAIRMAN SHACK: Yes. If there are
21 no further questions, I think, you know, we will have
22 to come to some decision on these things, although,
23 again, I would have thought that some of these would
24 have come up when we considered the rule in the first
25 place, but --

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1 MEMBER KRESS: Well, they probably did.

2 CHAIRMAN WALLIS: They probably did. I
3 think they did, yes.

4 VICE CHAIRMAN SHACK: You know, but I
5 can't reconstruct the history in my mind.

6 CHAIRMAN WALLIS: So are we ready?

7 VICE CHAIRMAN SHACK: I think we're ready
8 on -- at least on the reg. guide. We'll have to come
9 to some decision as to how we want to proceed.

10 CHAIRMAN WALLIS: Okay. So we have
11 another item which is coming up at 9:30. We will then
12 take -- we'll take a break until 9:30.

13 Thank you very much for your presentation,
14 and for response to questions.

15 MR. PULSIPHER: Thank you.

16 CHAIRMAN WALLIS: We have a little time to
17 research these assignments that I mentioned earlier
18 before we start. Be back here at 9:30.

19 (Whereupon, the proceedings in the
20 foregoing matter went off the record at
21 9:19 a.m. and went back on the record at
22 9:34 a.m.)

23 CHAIRMAN WALLIS: Please come back into
24 session.

25 We'll move on to the next item on the

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1 agenda, Proposed Updates to Reg. Guides and Standard
2 Review Plan Sections in Support of New Reactor
3 Licensing. The cognizant member is Otto Maynard.

4 We've already had a break. I'm wondering
5 if -- you know, there's a break scheduled during this.
6 But if things go well enough, we might be able to get
7 through this without a break. Just see how things go.

8 Anyway, I will now pass over the
9 proceedings to Otto, and --

10 MEMBER MAYNARD: Thank you very much, Mr.
11 Chairman. And I agree that with the break we've just
12 had, we may not need one during this. But we'll see
13 that -- we'll see as we proceed here.

14 This next agenda item is directly related
15 to our individual assignments we've been given for
16 reviewing certain reg. guides. And for the new
17 licensing processing, the staff has had to review and
18 revise as necessary all of the applicable reg. guides
19 and standard review plans.

20 In this meeting today, the staff is going
21 to be discussing their process for that, and, more
22 specifically, their rationale and process they've gone
23 through for their recommendation as to which ones of
24 these need to be reviewed by the ACRS and which ones
25 don't.

1 This is an informational meeting. There
2 is no decision expected out of this particular
3 meeting. But, again, it is directly applicable to our
4 assignments on reg. guides we've been given to review,
5 and we will be deciding as the ACRS as to which ones
6 that we will ultimately ask to be brought before us
7 and which ones not.

8 So with that, I'd like to turn it over to
9 Mr. Steve O'Connor and Steve Koenick to present the
10 staff's presentation.

11 MR. KOENICK: Thank you, Otto. My name is
12 Steve Koenick, and I'm from the Office of Nuclear
13 Reactor Regulation, NRR, and I'm working on the
14 standard review plan update. I'm joined by Steve
15 O'Connor. He's my counterpart working on the
16 regulatory guide update effort from the Office of
17 Research.

18 In the crowd we have Tom Bergman, Deputy
19 Director for the Division of New Reactor Licensing,
20 and John Monninger, the Deputy Director for the
21 Probabilistic Risk Assessment Directorate in the
22 Office of Research.

23 At this time I'd like to ask if you all --
24 gentlemen, if you have anything to add.

25 MR. MONNINGER: This is John Monninger

1 from the Office of Research. First of all, I just
2 want to say we very much appreciate the efforts of the
3 ACRS in accommodating this project. We recognize that
4 the project and delivering the reg. guides and SRP to
5 the committee is coming on a very tight time schedule,
6 and your efforts are very much appreciated in that
7 regard.

8 You know, big picture-wise, the agency is
9 preparing and updating its infrastructure in support
10 of the new reactor applications that are expected to
11 be coming in next year, next September. But other
12 than that, we just do very much appreciate your time
13 and effort, and we do recognize the increased demands
14 and trying to work within and revising our processes
15 to accommodate this project.

16 Thank you.

17 MR. KOENICK: Okay. Let me get started.
18 On slide 2, really what we want to do is provide you
19 with a -- the plans and schedule associated with these
20 two infrastructure -- key infrastructure components,
21 and that's the standard review plan and the reg.
22 guides that are referenced by the standard review
23 plan.

24 We do think, while this is an information
25 briefing, we would like the ACRS to endorse this

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1 approach of how we plan to engage the types of SRP
2 sections and the reg. guides in which you will
3 consider, and for you to develop waiver letters as
4 appropriate. Okay.

5 CHAIRMAN WALLIS: So this endorsement
6 you're asking for could just be in the form of verbal
7 endorsement of everyone around the table saying it
8 looks okay, rather than a letter from us?

9 MR. O'CONNOR: That would be okay.

10 CHAIRMAN WALLIS: That would be okay.

11 MR. O'CONNOR: As a start. We would
12 certainly need a letter on the -- on the waivers at
13 least.

14 CHAIRMAN WALLIS: You need a letter. But
15 that's as appropriate, as we come to it.

16 MR. KOENICK: That's correct.

17 CHAIRMAN WALLIS: Okay.

18 MR. KOENICK: That's correct.

19 CHAIRMAN WALLIS: But the overall plan --
20 I mean, I don't think you need a letter saying you
21 guys have a good plan.

22 MR. KOENICK: Right.

23 CHAIRMAN WALLIS: Okay.

24 MR. KOENICK: No, just a verbal that --
25 yes.

1 CHAIRMAN WALLIS: All right.

2 MEMBER MAYNARD: And I believe at this
3 point it is our plan to -- the ones that we determine
4 that we need to or don't need to review, that we will
5 be more formally communicating to that --

6 MR. KOENICK: Yes.

7 MEMBER MAYNARD: -- to you about that.

8 MR. KOENICK: That's correct.

9 MEMBER MAYNARD: Thank you.

10 MR. KOENICK: So we'll quickly provide
11 background, and then we'll go into the proposed scope
12 of the ACRS review, and then we'll break it down into
13 specifics between the SRP plans and the reg. guide
14 plans. So that's the quick --

15 CHAIRMAN WALLIS: You've just said it's
16 the scope of ACRS review. Once you get into ACRS
17 review, you can never be quite sure what will happen.

18 (Laughter.)

19 MR. KOENICK: That's correct. Right. I
20 guess earlier today we were revisiting something that
21 from 2003, which really hasn't changed, so interesting
22 discussion earlier today.

23 Let me present this background slide.
24 Really, it starts with the Energy Policy Act of 2005.
25 That's really what gave the driver that it's for real

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1 this time to get ready, and we've undertaken the --
2 several key activities, the primary one being the
3 Part 52 rulemaking, which is to go to the Commission
4 by the end of this month.

5 It has already been made -- a preliminary
6 version of that has been made publicly available, and
7 then you also have the SRP and the reg. guides,
8 including DG-1145, which is the combined license
9 application guide.

10 Now, I would say I definitely start here.
11 This isn't the first time that we've tried to update
12 our infrastructure. I believe back in 2003 when I
13 first started becoming cognizant of this project ACRS
14 talked to the Commission about the need to really
15 update the standard review plan, and I believe that
16 was the first SRM back in 2003 that I had under my
17 cognizance of working on the standard review plan.

18 Next slide, please.

19 So basically, we're going to focus on the
20 standard review plan and the referenced reg. guides
21 that by -- that are referenced by the standard review
22 plan. And this update really is to promote efficiency
23 and effectiveness of the review and to provide
24 regulatory stability for this class of applicants that
25 are -- that are lining up beginning with

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1 September/October timeframe of 2007.

2 The requirement -- there is a regulatory
3 requirement. Right now it's 10 CFR 50.34(h), and
4 that's conformance with standard review plan. And
5 that requires an applicant to do an evaluation of
6 conformance against the SRP acceptance criteria of the
7 revision in effect six months prior to the docket date
8 of the application. So if you back off the six months
9 from September, that's how you get to the March
10 timeframe.

11 And I do want to clarify, though, that the
12 SRP is not a substitute for regulations and compliance
13 with them. It's not required, so this evaluation is
14 against the acceptance criteria. Where there are
15 differences, they have to provide their justification
16 of an acceptable alternative to meeting our
17 regulations.

18 MEMBER POWERS: Frequently, a licensee
19 will come in and say, "Okay, here's your regulation.
20 Here's your acceptance criteria. Here's my analysis.
21 I've gone through all this." And lo and behold, sure
22 enough, I meet with margin your acceptance criteria.
23 And clearly those analyses are based on the physics
24 and chemistry and metaphysical understanding that we
25 have now. And they're usually paper analyses.

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1 When does the staff say -- I mean, what
2 criteria does the staff have that says, gee, I'm sure
3 analysis is quite correct, but, gosh, you know,
4 they're just an off chance that maybe our physics and
5 chemical and metaphysical understanding is not
6 complete and we really ought to have experimental
7 validation of that. Is there a criterion the staff
8 uses that relegated to something called "engineering
9 judgment"?

10 MR. KOENICK: I think there's two -- I can
11 answer this two ways. There is first-of-a-kind
12 engineering in which applicants do have to provide a
13 certain amount of testing to support that new feature.

14 MEMBER POWERS: Very good.

15 MR. KOENICK: I believe that's 50 -- I
16 don't know the specific -- I think it's 47, 50.47.

17 MEMBER POWERS: I think it is, too.

18 MR. KOENICK: Okay. And then, there is
19 the engineering judgment, and that's determined on the
20 license-specific basis. When an applicant comes in to
21 provide an alternative, the staff uses whatever is in
22 his means to do that evaluation.

23 MEMBER POWERS: We have an evolving
24 workforce. And when we have wisened and experienced
25 engineers looking at things, you know, we derive some

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1 confidence in their engineering judgments, simply
2 because they've seen so many things and developed a
3 healthy skepticism.

4 When we have less experienced people come
5 in who have seen fewer things, had their fingers
6 burned fewer times, how do we take their engineering
7 judgment?

8 MR. KOENICK: Well, this isn't necessarily
9 the part of this briefing that I want to get into.

10 MEMBER POWERS: I understand.

11 MR. KOENICK: But we are going through an
12 effort, the Office of NRR, and I believe it's going to
13 carry over to new reactor -- the new reactor
14 organization. But qualification plans, to have the
15 reviewers go through a qualification program, that's
16 currently underway. And there is also knowledge of
17 management transfer activities that are trying to --

18 VICE CHAIRMAN SHACK: Those things only
19 teach them the things that we already know. And the
20 reason you do experiments is --

21 MR. KOENICK: Right.

22 VICE CHAIRMAN SHACK: -- you don't think
23 you know everything.

24 MR. KOENICK: Sure. And then, I would
25 also --

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1 VICE CHAIRMAN SHACK: And you don't
2 know --

3 MR. KOENICK: Enough.

4 VICE CHAIRMAN SHACK: I mean, I don't have
5 an answer.

6 MR. KOENICK: Sure. And then, the other
7 component is that in the Office of Research part of
8 their research is beyond -- there is two types of
9 research. It's to support the licensing process and
10 then beyond the licensing process. So --

11 MEMBER POWERS: Those are good answers.
12 I like those.

13 MR. KOENICK: Thank you. Okay. So
14 50.34(h) requires that an analysis -- again,
15 conformance against the SRP in effect six months prior
16 to the application. That is going to be pulled
17 forward into Part 52 in the rulemaking under Contents
18 of Application. So it will be for early site permits
19 for design certifications and for combined license
20 applications.

21 Next slide, please.

22 Because of that provision to be in effect
23 six months prior, we have undertaken a -- or we have
24 greatly accelerated this schedule to have it issued by
25 March of 2007. The reg. guides fall in line with that

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1 schedule, because they are referenced by standard
2 review plans in large part as acceptance criteria. So
3 that's how the referenced reg. guides come into that
4 schedule as well.

5 Next slide.

6 Given that large number of sections of
7 this update effort, given the accelerated schedule,
8 staff recognized the need that we had to -- had to
9 revisit the way we -- we were engaging ACRS. I know
10 the original -- when we met with ACRS back in 2004, we
11 had a verbal agreement from you that we would provide
12 you every SRP section, and we would make a
13 recommendation that you didn't need to review it.

14 And we had proceeded along onesies and
15 twosies, and we're making progress but we're making
16 progress in terms of the schedule that was originally
17 sought, which was five to seven years. Well, we've
18 accelerated that down to make it in effect by March,
19 so that has really necessitated the need for us to
20 reengage on how we plan to give -- or which sections
21 we plan to give to you for consideration.

22 CHAIRMAN WALLIS: Now, if this is
23 accelerated, maybe we can accelerate our review, but
24 how about the production? Does that mean that these
25 have been rushed into production in a quick time? Are

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1 they mature? I mean, these SRPs take some time to
2 mature. There's a significant change.

3 MR. KOENICK: Right. And I guess the
4 basis on -- I guess the most significant aspect of why
5 we can do this is because in large part these
6 revisions merely incorporate up-to-date guidance. We
7 are not introducing new staff positions.

8 CHAIRMAN WALLIS: Right.

9 MR. KOENICK: We are baselining off the
10 1996 draft, which the technical staff is confirming or
11 affirming the content that was introduced there. And
12 when they have exceptions, they're taking exceptions,
13 too, so the staff as part of this update is -- is
14 taking ownership of the content and --

15 CHAIRMAN WALLIS: If it was just sort of
16 mechanically incorporating something which should be
17 there, then we may well have nothing to say about it.

18 MR. KOENICK: That's correct. And that's
19 really a large aspect of how we plan to tailor the
20 scope of review. We want to get over 250 sections in
21 place by March of 2007, but, really, only a small
22 subset of that really warrant consideration in the
23 terms of being a new significant technical position.
24 Okay?

25 We documented our plans. NRR had

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1 forwarded a memo to you on September 5th identifying
2 24 SRP sections, and the Office of Research had
3 submitted their plans to you in an August 24th memo.
4 And that's what we're following up on today.

5 A little bit of the SRP process -- we are
6 going to issue these SRP sections as final -- final
7 revisions. We are not issuing them for public
8 comment. We don't have enough time to issue them for
9 public comment. And given the fact that the majority
10 of these updates are just incorporating up-to-date
11 guidance, we didn't feel it was necessary.

12 MEMBER MAYNARD: Wouldn't you expect to
13 get comments after they're issued? I mean, you're
14 going to issue them that way.

15 MR. KOENICK: Yes.

16 MEMBER MAYNARD: And how do you intend to
17 handle that if there are some valid public comments
18 that come in after they're --

19 MR. KOENICK: Absolutely. If you want to
20 skip ahead a couple --

21 MEMBER MAYNARD: I'll wait until you get
22 there, if you're going to get to that.

23 MR. KOENICK: Okay. Yes. Okay. And
24 then, what we want to do is as these become available
25 through the appropriate concurrence change, we're

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1 making these preliminary drafts publicly available, so
2 our stakeholders who are in the middle of preparing
3 their sealed applications have as much time to see and
4 digest what has changed.

5 But we're not going to formally issue
6 these until the March timeframe after we do a
7 significant reconciliation -- I shouldn't say
8 "significant." Hopefully not significant, but
9 reconciliation against the Part 52 rulemaking, the
10 comments received on the draft guide, DG-1145, which
11 is the front end of the standard review plan, and then
12 the concurrent regulatory guide update efforts.

13 So after we do that reconciliation, that's
14 when we're going to go to that publication, in March
15 of 2007.

16 MEMBER MAYNARD: Okay.

17 MR. KOENICK: Slide 9. The first bullet
18 is reaffirming that the majority of these updates do
19 not represent new staff positions. They represent
20 just an incorporation to make these things -- these
21 revisions up to date.

22 We did, however, identify 24 sections
23 which may be of interest to ACRS. Some of those we
24 had -- 10 of those were related to regulatory guides
25 being updated. And in the case of some of them, you

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1 have a case where we had a Category 3 reg. guide,
2 which the Office of Research -- which Steve will
3 address in his presentation -- but the Category 3 reg.
4 guides will not be available by March 2007. But we
5 are providing interim guidance and a standard review
6 plan revision.

7 One of those is SRP Section 42, which is
8 going to address reactivity-induced accidents, which
9 was provided in Reg. Guide 1.77. So that is one that
10 is of interest to the ACRS, as well as the others that
11 are -- that will relate to a reg. guide that's being
12 updated.

13 CHAIRMAN WALLIS: These new staff
14 positions are usually the points where you get public
15 comment, and you get public comment which says you are
16 now regulating by reg. guide instead of by rule, or
17 something, the reg. guide goes beyond the rule, and
18 that sort of thing. Are you careful to avoid that in
19 these changes?

20 MR. KOENICK: That's why it goes through
21 our counsel for review. It goes through our
22 management review, yes.

23 There are 14 other SRP sections that are
24 not related to standard -- to reg. guides being
25 updated. I would say six or seven of those SRP

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1 sections are related to 10 CFR 20.1406, which is
2 minimization of contamination. There will be a reg.
3 guide, but that won't be available by March. We are
4 incorporating interim guidance in the standard review
5 plan in SRP Sections 11 and 12.

6 The staff is -- we are working with the
7 ACRS staff to identify which additional SRP sections
8 you would be interested in reviewing and working out
9 when we can provide those to you.

10 I would also like to provide another
11 example of an SRP section which is not in the list of
12 24 which is of interest to the ACRS. And that's SRP
13 Section 3.6.2, which has to do with -- there is an
14 issue that ACRS had identified on a jet impingement
15 model potential -- non-conservative in a jet
16 impingement model. And the standard review plan
17 that's going to be issued in March will not have
18 resolved that issue.

19 There is still not enough technical
20 information necessary to complete that as an
21 outstanding item. There is currently some requests
22 for additional information to the ESBWR design
23 certification rule -- design certification, and we
24 want to proceed with issuing the SRP in March with
25 that as an outstanding item. So that's why that is

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1 not on the list of 24 that you would be -- that we
2 would think you would consider.

3 Next slide.

4 CHAIRMAN WALLIS: The staff will -- okay.
5 I'm sorry.

6 MR. KOENICK: Okay. This gets to your
7 question, Otto. Some of these sections -- some of
8 these sections won't be technically complete until the
9 January timeframe. We are going to work with your
10 staff to provide these to you at the earliest
11 opportunity that we can in a -- in more of a draft as
12 opposed to being vetted through our review process.

13 So we're going to provide these to you at
14 the earliest possibility, but we are still going to
15 publish these in March. So what do we do if ACRS has
16 an issue or if a member of the public has an issue?
17 It gets identified as a comment that may help inform
18 a technical basis of an acceptable alternative to an
19 acceptance criteria to meeting a regulation.

20 And that's a process that will be -- we
21 haven't formally set an interim staff guidance
22 process, but it will be something the resolution of
23 any outstanding issues would be vetted and documented
24 in such a way that it could be used to help inform or
25 be used in a license application, or it would be

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1 addressed in a license-specific application.

2 Okay. That's really all that I had on the
3 standard review plan process. If there's any
4 questions on standard review plan or specifics, I can
5 address them to the best of my knowledge now, or I
6 could turn it over to Steve.

7 MEMBER MAYNARD: A question a little bit
8 related to both reg. guides and the standard review
9 plan. Do you envision this process, for the ones that
10 the ACRS reviews, that are identified for review, to
11 be presented individually at full committee meetings,
12 or just get feedback from the -- that's about the only
13 way that we could make a comment or to do it -- what
14 you would envision as the process?

15 MR. KOENICK: Well, the early interaction
16 would be to provide you the sections for your
17 consideration. If you determine the need to have a
18 full committee meeting, then we'll plan them -- we do
19 have already certain reg. guides that are planned for
20 November and December meetings. And to the extent
21 practical that we can package the standard review plan
22 section with them, we will as well as if we need
23 another separate meeting for an SRP section that
24 wasn't related to a reg. guide, yes.

25 CHAIRMAN WALLIS: Okay. It seems to me

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1 you need some interaction, then, with the -- our
2 staff. That if the ACRS has some concern, then you're
3 going to present this thing to the full committee. We
4 don't have all that much time. You have to focus on
5 the areas of concern.

6 MR. KOENICK: Yes.

7 CHAIRMAN WALLIS: And that has to be sort
8 of communicated to you ahead of time, because we don't
9 have subcommittee meetings.

10 MR. KOENICK: Yes. We're working with
11 your staff to work out the -- to provide the
12 information when it becomes available, and as well as
13 which -- which sections you'd be interested in.

14 MEMBER MAYNARD: I think we have options
15 available to us. We could have subcommittee meetings
16 if we needed it for specific ones, or we could handle
17 -- there's a number of options we have. I'm just
18 trying to understand what they envision as a process.

19 I think the key, from what I'm
20 understanding, it's going to be up to us to identify
21 what we need to see and what forum that we need to do
22 it in, whether it be individual review, a subcommittee
23 that's an ad hoc -- established for a specific one --
24 or something that we want them to come to a full
25 committee meeting for.

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1 MR. SNODDERLEY: That's exactly our
2 understanding. This is Mike Snodderley from the ACRS
3 staff. So now the ball is in our court, otto. We
4 have received the 20-some-odd reg. guides that the
5 staff has identified that are relevant to COL action
6 items, or COL applications.

7 And then, we had the SRP sections that
8 Steve -- now, we haven't received as many of the SRP
9 sections yet, but what we've received we'll discuss
10 this evening, and also for those sections that people
11 have just received we'll -- I'm envisioning on Friday
12 morning we'll make decisions on what we will review in
13 November and December.

14 We also have to make decisions at that
15 time. If we feel that there's enough questions that
16 it can't be covered in the full committee meeting, and
17 we think there's a subcommittee meeting that's needed,
18 then we need to communicate that back to the staff.
19 So that's the main thing that has to be accomplished
20 here in the October timeframe.

21 The other thing we have to decide is --
22 and give feedback to the staff is on that Enclosure 2
23 that we provided last month from the document that
24 Steve was referencing, where it identifies here are
25 SRP sections, some of which we don't plan to provide

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1 to you unless you tell us.

2 And so already Steve mentioned one of the
3 key ones -- the SRP Section -- Chapter 11, which
4 relates to some of the things to address, guidance to
5 address tritium. So there may -- that's something we
6 have to consider.

7 Obviously, 3.6.2, with the GSI 191 issue,
8 which we know is evolving and that that position
9 hasn't been -- probably have a firm staff position by
10 March 2007. So what is the interim guidance going to
11 be? And so those are all the kinds of things that we
12 have to make a decision on this month.

13 And yet -- and also, I want to take this
14 opportunity to say we really appreciate the support
15 that we've received from the Office of Research and
16 NRR -- John Monninger, Jimmy Urokim, Steve O'Connor,
17 Steve Koenick. All those guys have been -- you know,
18 we've been meeting weekly and updating the status, and
19 so it -- it has been a challenge, but we appreciate
20 their support.

21 MEMBER MAYNARD: Go ahead.

22 MR. O'CONNOR: Okay. First off, I want to
23 apologize for the difference you're seeing on the
24 overhead here and what you have in your hands there.
25 We had some last-minute changes this morning, and

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1 obviously we had the version control issue here. So
2 you probably saw some differences in the slides and
3 the -- versus what was on the overhead. But hopefully
4 from here on out we don't have those issues.

5 For the reg. guides, during the agency
6 review of infrastructure needs to support new reactor
7 licensing, we found that we needed to put some
8 resources on the upgrade and revision to reg. guides
9 to support the new reactor licensing. We found during
10 this review that many of the reg. guides hadn't been
11 revised since the '70s, so we looked at all reg.
12 guides to determine whether revision was necessary,
13 and also to look for any new reg. guides that needed
14 to be developed.

15 We reviewed about 480 reg. guides and
16 draft guides with a focus on their applicability to
17 the new reactor licensing. This covered all the
18 divisions, with primary focus on Divisions 1, 4, and
19 8 of the reg. guide series. And we went and
20 prioritized the reg. guides from high to low based on
21 which ones needed to be completed first to support the
22 license applications.

23 We initially identified 58 reg. guides as
24 a high priority to be addressed by March '07. But as
25 we looked into it further and, you know, technical

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1 staff would identify reg. guides that they said, hey,
2 this one maybe should be a high priority also. The
3 number increased to 63, and that's where we stand
4 right now.

5 We reviewed the 63 reg. guides to
6 determine which ones needed to be issued by March, and
7 which ones would be okay as is for March, or, you
8 know, could maybe be updated after that. We found
9 that 31 of them needed to be updated by March in order
10 to support the applications, 28 that did not need to
11 be updated by March, but some of those may need to be
12 updated, you know, after that, and then four without
13 sufficient technical bases to support development at
14 this time and not by March '07.

15 So what we're doing in some of those cases
16 is addressing the information, some of the information
17 that will be in the reg. guide in the SRP section.
18 And the remaining medium and low priority reg. guides
19 will be addressed over the next three years and
20 assessed for the revisions required.

21 MEMBER POWERS: Are you going to tell us
22 what the four without sufficient technical basis are?

23 MR. O'CONNOR: We can get into that, yes.
24 I mean, one is for -- it's a new guide, plastic
25 piping. There's another new guide on 20.1406. And

1 the revision to Reg. Guide 1.99 for radiation
2 embrittlement, reactor vessel materials, and --

3 CHAIRMAN WALLIS: I would think this is --

4 MEMBER POWERS: I can't imagine there's
5 not enough data on that, but I can be corrected.
6 We've been hammering away on that issue since the dawn
7 of time, or the dawn of the agency anyway.

8 MR. O'CONNOR: Yes, and that one is tied
9 to the rule, the 50.61 rule.

10 CHAIRMAN WALLIS: It's not as if it
11 doesn't need revision.

12 MR. O'CONNOR: Exactly.

13 (Laughter.)

14 MR. KOENICK: On Reg. Guide 1.77, which I
15 discussed earlier, which is reactivity-induced
16 accident and the rod injection accident, and that will
17 be incorporated into SRP Section 4.2, and then the
18 fourth one was the reg. guide for 20.1406, which is
19 the minimization of contamination. And there again,
20 we're going to incorporate the information into
21 standard review plan section -- Chapters 11 and 12, as
22 appropriate.

23 MEMBER POWERS: Can I come back to 1.77,
24 reactivity-induced accidents, rod ejection?

25 MR. KOENICK: Yes, that's correct.

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1 MEMBER POWERS: Once again, we've been
2 kind of looking at that. Don't we understand that?
3 What is it we don't understand?

4 MR. KOENICK: I think it's really the
5 vehicle to updating the guidance and getting it into
6 a written form, and the technical staff --

7 MEMBER POWERS: Okay. So you're just hung
8 up over how you're going to draw out this curve around
9 these four points extending down to 36 gigawatt days
10 per ton or something like that.

11 MR. KOENICK: Not being a technical expert
12 on the subject, I don't want to -- I just know that
13 the path on this one was to incorporate the guidance
14 into the standard review plan.

15 MEMBER POWERS: Okay. I'm going to be
16 fascinated to see 1.99.

17 MR. O'CONNOR: Yes. At the conclusion of
18 our presentation, we can see if the technical lead is
19 available to discuss some of those -- those
20 particulars with you a bit more on the -- those four
21 reg. guides or 1.77 in particular, if you'd like,
22 Dana.

23 So moving on to slide 12, we developed an
24 expedited review process, development process, for the
25 reg. guides. The typical process takes about a year

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1 to develop the reg. guides. We had about nine months
2 from the time that we began this effort, and that we
3 -- when we took the March date and moved backwards
4 from there we found that we needed to develop an
5 expedited process.

6 So to do this, we've shortened the
7 internal review times and dedicated a staff, a team,
8 to getting these reg. guides issued by March. We're
9 using concurrent office reviews and, like I say,
10 shortened timeframes, which is pushing everybody. We
11 published a generic Federal Register notice that
12 informs the public of our intent to issue the reg.
13 guides for public comments in the next several months.

14 And, again, what this does is allows us to
15 not have to issue a Federal Register notice for each
16 one of these reg. guides, and so it simplifies the
17 process a little bit more and gets the information up
18 on the web much quicker to members of the public. And
19 so we're trying to use the agency web electronic age
20 to our advantage here.

21 MEMBER POWERS: The public should applaud
22 you.

23 MR. O'CONNOR: That's right.

24 MEMBER POWERS: For the quality of the
25 information that's available on the web.

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1 MR. O'CONNOR: One would think.

2 MEMBER POWERS: Yes. It's -- I mean, it's
3 just -- I was hitting it this weekend, as a matter of
4 fact, and could -- found I could navigate very easily
5 around that and find stuff.

6 MR. O'CONNOR: Oh, yes.

7 MEMBER POWERS: The people should be
8 complimented on providing that kind of information to
9 the public.

10 MR. O'CONNOR: Yes. The rule forum is a
11 mechanism we're using to put this up, and that's a
12 valuable location on the public website for getting
13 this kind of information.

14 MEMBER POWERS: Much better than Federal
15 Register notices.

16 MR. O'CONNOR: Yes. Or ADAMS.

17 MEMBER POWERS: Yes, much better than --
18 that goes without saying.

19 MR. O'CONNOR: We provided early drafts of
20 the reg. guides to ACRS for information. We're
21 providing these to Mike Snodderley, and I heard
22 several people mentioning earlier they haven't gotten
23 all the reg. guides yet. So you should have them
24 today, I would expect, at a minimum.

25 And what -- the plan is to provide final

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1 drafts to ACRS as we send them out for public comment.
2 So as we post them to the website, we'll also provide
3 you with a final draft. Basically, what you have in
4 hand now is a working draft, pre-office concurrence
5 draft and pre-OGC review.

6 And for most of the reg. guides we're
7 doing a 45-day public comment period, and we're
8 evaluating the need for a public workshop in late
9 November and December. And we've vetted this with
10 industry representatives at a meeting last week I
11 believe it was --

12 MR. KOENICK: September 21st.

13 MR. O'CONNOR: -- 21st, and we asked for
14 their input as to maybe what the scope of this
15 workshop would be -- you know, if we should cover all
16 reg. guides or certain reg. guides and we're waiting
17 to hear back from them at this point.

18 CHAIRMAN WALLIS: The timing of the work
19 -- how does the workshop fit into this process here?

20 MR. O'CONNOR: Well --

21 CHAIRMAN WALLIS: It looks as if it's at
22 the end, but that doesn't make much sense to be toward
23 the end.

24 MR. O'CONNOR: Based on our schedule, the
25 latest that these reg. guides will be going out for

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1 public comment would be the middle of November. And
2 so we figured, you know, we'd get them out for public
3 comment and then set the workshop up a couple of weeks
4 after that to give -- you know, we've got Thanksgiving
5 in there --

6 CHAIRMAN WALLIS: So the workshop is to
7 inform or is it to get comments or --

8 MR. O'CONNOR: A little bit of both
9 actually.

10 MEMBER POWERS: So the answer to that is
11 yes.

12 CHAIRMAN WALLIS: We may be reviewing
13 these documents before we know what these public
14 comments are.

15 MR. O'CONNOR: That's right. You will be.

16 CHAIRMAN WALLIS: And if the public
17 comments are really significant, you may want to come
18 back to us.

19 MR. O'CONNOR: That's right. And I'll be
20 addressing that in a little bit here, that -- the way
21 the process is working. Yes, we're -- this is not the
22 typical process as you see this. We're giving you
23 early drafts, and then going out for public comment at
24 the same time. And this is, like I say, not the
25 typical process where we would brief you before going

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1 out for public comment and then after.

2 And we'll inform you of any substantial or
3 significant comments during the public comment period,
4 or if we do receive any comments, and then, you know,
5 discuss them with your staff and, if need be, full
6 committee.

7 Now, we met with the ACRS staff -- John
8 Larkins, Mike Snodderley -- discussed the method of
9 allowing the committee members to review all of the
10 reg. guides and decide whether a full committee
11 meeting is desired or whether the revised reg. guide
12 changes could be discussed in subcommittee meetings or
13 whether ACRS review could be waived entirely.

14 And we agree that ACRS review could be
15 deferred and done concurrently with the public comment
16 period, and that we would recommend to the committee
17 to waive the reviews for those reg. guides the staff
18 felt could be waived from ACRS reviews. As of last
19 Friday, we provided all of the reg. guides to be
20 completed by March '07 to Mike Snodderley.

21 And in our August 24th memo that Steve
22 mentioned earlier from Farouk Eltawila to John Larkins
23 we listed 14 reg. guides that we felt could be waived
24 from ACRS review, because the changes were minor or
25 editorial in nature, and for the other reg. guides we

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1 felt the committee may be interested in reviewing. We
2 await your feedback from today's meeting regarding
3 which ones of the reg. guides you'd like to be briefed
4 on in committee meetings in November or December.

5 Some of the reg. guides have been
6 tentatively scheduled in the November/December
7 committee meetings, and, if necessary, subcommittee
8 meetings could also be used to discuss the reg. guide
9 meetings. These were some of the agreements we've
10 made with the staff.

11 Two of the reg. guides are being briefed
12 in this meeting -- 1.7 as you just heard and 1.200
13 tomorrow. The February committee meeting could be
14 used to address any remaining reg. guide issues is
15 what the plan is.

16 We were looking at the tentative schedule
17 earlier, and we saw that we may need to revisit some
18 of the tentatives that were on for November, because
19 we would need to be providing those to you now
20 essentially, almost immediately, to get them in front
21 of you for review for November.

22 So we will have to work with the ACRS
23 staff to revisit that tentative schedule. Based on
24 what we have now on the reg. guides in process, we
25 have a much better understanding now where things are

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1 on the schedule and the process.

2 And as a status, at this point, of the 31
3 high priority reg. guides that are to be completed by
4 March of '07, three have been published, two have been
5 made available to the public for public comments, and
6 four have completed a public comment period and are
7 moving toward a final publication, and 22 will be made
8 available to the public over the next month and a
9 half. That completes my portion of today's briefing,
10 and we'll try to address any questions you may have.

11 MEMBER POWERS: I wonder if any effort is
12 expended by the agency to make sure that those
13 responsible for the Energy Act understand what a
14 heroic effort you're going to to comply with its
15 provisions.

16 MR. O'CONNOR: Let it be noted.

17 (Laughter.)

18 MEMBER POWERS: Yes, I think it's very
19 admirable what you're trying to do here and to be
20 responsive to Congress. It's a heck of a lot of work,
21 and you're working very hard at it I can tell.

22 MR. O'CONNOR: Oh, yes.

23 MEMBER MAYNARD: Does this conclude the
24 staff's presentation overall? Are you not going into
25 any of the specifics for the reg. guides or only if we

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1 have questions on that? Is that the --

2 MR. O'CONNOR: Yes. The plan was to give
3 you an overview of the process and the status, to some
4 extent the schedule of when we plan to do things. And
5 if you'd like to get into some specific questions on
6 the various 31 reg. guides or SRP sections, we've
7 asked the technical staff, some of the technical leads
8 -- and that's why the audience has so many people out
9 here -- the two to step up and address any particular
10 questions you may have on --

11 MEMBER MAYNARD: Ready, willing, and able.

12 MR. O'CONNOR: -- reg. guides -- ready,
13 willing, and able. On reg. guides that we've proposed
14 as being waived, if you have some concerns about that,
15 this is a good point to bring them up possibly. Or if
16 you'd like to discuss the four that will not be
17 completed by March --

18 MEMBER POWERS: Yes. Two of them -- 1.99
19 and 1.77 -- I think that a person of your demeanor
20 could move these and keep them on the March schedule,
21 as I understand the technical understanding right now.
22 I could be wrong about these things, but I think they
23 could be moved forward.

24 MR. O'CONNOR: Sure. And as Steve said,
25 I think we really have to defer to the technical leads

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1 to get a little more information.

2 MEMBER POWERS: Well, I know that we, for
3 instance, will be having a meeting on reactor fuels in
4 November, and I will fully ask about 1.77 and why it
5 is not off the dime, because in our research report we
6 have now said twice we think this research has reached
7 a point that they can move forward to something that
8 could at least go to public comment.

9 MR. O'CONNOR: Right.

10 MEMBER POWERS: I'm not sure that it would
11 come out of public comment with -- unscathed, but it
12 could be moved forward to at least public comment.

13 MR. KOENICK: Now, in the case of 1.77, by
14 using the SRP 4.2, in that update we will provide that
15 interim guidance that you're talking about. So it
16 will be in the public domain. It will be provided as
17 SRP acceptance criteria. Sort of if you go through
18 the history of what's an SRP acceptance criteria
19 versus what's a reg. guide versus how we reference
20 reg. guides as acceptance criteria, I think that line
21 has been somewhat blurred over time.

22 MEMBER POWERS: Well, it's always blurred.
23 I mean, it is never clear, nor should it be. I mean,
24 I wouldn't go to any effort to make it --

25 MR. KOENICK: Right. So, and the way this

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1 process will work is DG-1145, the contents of the
2 application, will articulate which reg. guides should
3 be referenced in a COL application, and the standard
4 review plan will reference those reg. guides as
5 appropriate. And where there is not a reg. guide, the
6 staff will provide that guidance in the standard
7 review plan.

8 So there are cases where -- there is a
9 reg. guide, I believe 1.56, on chemistry control.
10 Instead of using -- updating Reg. Guide 1.56, we're
11 referring to EPRI water chemistry guideline series of
12 reports. So in DG-1145, we will remove reference to
13 Reg. Guide 1.56.

14 MEMBER POWERS: Sure.

15 MR. KOENICK: Right.

16 MEMBER POWERS: Because the water
17 chemistry reports are very good and very
18 comprehensive.

19 MR. KOENICK: Right. So rather than go
20 through the effort to update Reg. Guide 1.56, we're
21 simply changing that reference. And we're going to
22 tailor that list through DG-1145 and the SRP update.
23 So in --

24 VICE CHAIRMAN SHACK: Are you actually
25 going to get rid of some obsolete reg. guides?

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1 MR. KOENICK: I think the plan will be to
2 sunset some of those reg. guides.

3 MEMBER POWERS: Fantastic.

4 MR. KOENICK: Yes.

5 MEMBER POWERS: Okay.

6 MR. KOENICK: But that doesn't -- that
7 doesn't have to occur by March, if we inform the
8 applicants which set of reg. guides and it's contained
9 as a reference to the SRP acceptance criteria. That's
10 how you tailor the scope for this series of
11 applicants.

12 MEMBER POWERS: Okay.

13 MEMBER MAYNARD: One thing that may be
14 beneficial before we talk some of the specific ones
15 here -- just give us all a common understanding. The
16 standard review plan reg. guide, what is the
17 difference, and how do they apply to the rule?

18 MR. KOENICK: Okay.

19 MEMBER MAYNARD: If you can just kind of
20 briefly put us all on the same playing field here.

21 MR. KOENICK: Okay. The standard review
22 plan is staff guidance document on how to conduct a
23 review. It wasn't until 50.34(g) was introduced where
24 they provided that criteria for conformance against
25 the standard review plan.

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1 I believe that happened after this whole
2 fleet of current applicants, so we've never exercised
3 that provision in the context of an OL. In the
4 context of a DC, we have used it.

5 MEMBER CORRADINI: Can you repeat what you
6 just said without the abbreviations?

7 MR. KOENICK: Sorry about that.

8 MEMBER CORRADINI: Say it again, but --

9 MR. KOENICK: Okay.

10 MEMBER CORRADINI: -- slower.

11 MR. KOENICK: We have not exercised this
12 evaluation of conformance with the standard review
13 plan for an operating license submitted under Part 50.

14 MEMBER CORRADINI: Okay.

15 MR. KOENICK: We have used it in the
16 design certification submitted under Part 52.

17 MEMBER CORRADINI: But in the -- but if I
18 understand, there's three pieces. One piece is the
19 early site permit. That's to the side. The other
20 piece is design certification. That's to the side.
21 And they have now used the standard review plan
22 guidance, right? Which any standard review plan may
23 reference a design -- or a reg. guide or a group of
24 reg. guides.

25 MR. KOENICK: That's correct.

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1 MEMBER CORRADINI: Okay. And never has
2 anybody used the standard review plan for an operating
3 license, or now a COL.

4 MR. KOENICK: And this -- this version of
5 the standard review plan. It was -- it was used, but
6 there was no provision -- there was no provision to do
7 your evaluation.

8 MEMBER CORRADINI: It was ad hoc. It was
9 not used by rule or by recommendation.

10 MR. KOENICK: There was no siting of the
11 rule, yes. It was an internal staff review document.

12 MEMBER MAYNARD: As I recall, a lot of
13 those were being developed --

14 MR. KOENICK: Yes.

15 MEMBER MAYNARD: -- after many of the
16 plant license applications were being prepared and
17 submitted.

18 MR. KOENICK: That's correct. It was a
19 collection of our engineering judgment, a collection
20 of all the decisions that we made in those original
21 licenses.

22 MEMBER CORRADINI: So, then, one last
23 question since I'm partly to blame for wanting to get
24 on -- normalize us all. So the DG-1145 is not a reg.
25 guide, not a standard review plan. It looks to me

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1 like a phantom FSAR.

2 MR. KOENICK: No.

3 MEMBER CORRADINI: So help me.

4 MR. KOENICK: It is -- it replaces the
5 Reg. Guide 1.70, which was the standard format and
6 content --

7 MEMBER CORRADINI: Oh, okay.

8 MR. KOENICK: -- of an application.

9 MEMBER CORRADINI: Okay.

10 MR. KOENICK: So that it's that and it
11 goes beyond that, because it tailors the information
12 necessary for, like you said, whether they -- whether
13 a combined license applicant references an early site
14 permit, a design certification, both, or neither.

15 MEMBER CORRADINI: But as I've been
16 starting to read this on my weekend, since I'm pretty
17 -- have a pretty useless life on weekends, I -- some
18 pieces of this actually tell them the units and the
19 scale that they have to plot things, which struck me
20 as a tad on a bizarre side. But it gets to that level
21 of specificity. Am I off base there, or am I reading
22 this right?

23 MR. KOENICK: It is -- a reg. guide is a
24 product for an applicant. It is what is represented
25 as an acceptable approach of meeting a regulation.

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1 That's where a reg. guide comes in. And the SRP,
2 which is a review document, contains acceptance
3 criteria, often which are referenced positions in
4 regulatory guides.

5 MEMBER MAYNARD: The regulatory guide is
6 not a requirement until the applicant commits to it as
7 part of their --

8 MR. KOENICK: Part of their license.

9 MEMBER MAYNARD: -- license basis.

10 MR. KOENICK: Yes.

11 MEMBER ARMIJO: What we've been receiving
12 are DGs, draft guides.

13 MR. KOENICK: Yes. DGs are --

14 MEMBER ARMIJO: It will replace the reg.
15 guide when it's -- the reg. guide is issued? For
16 example, Reg. Guide 1.20, we -- I received Design
17 Guide 1163. Are they equivalent?

18 MR. KOENICK: What will happen is the reg.
19 guide -- the draft reg. guide is the identifier that
20 it's issued for comment. When it gets final, it will
21 become Reg. Guide 1.20 Rev, the next Rev.

22 MEMBER ARMIJO: Got it.

23 MR. KOENICK: And if you look at the reg.
24 guide page on the website, it contains all the
25 references of all the DGs and the revisions to the

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1 reg. guides, all maintained on our external web page.

2 MEMBER MAYNARD: I'd ask the members at
3 this point, for the reg. guides that you have received
4 to review, now would be the chance if you had any
5 questions that have come up that the staff may be able
6 to address. I'll ask one. I don't know if you've got
7 the right people here or not.

8 One of them I had was on 1.128 and 1.129
9 on the installation and design of large batteries into
10 maintenance and testing. And I forget which one of
11 those, but references -- I think it's an IEEE standard
12 that apparently was not -- the later version did not
13 incorporate anything for nuclear powerplants. So it
14 ended up putting a number of staff positions in to add
15 back in the quality requirements for nuclear
16 application.

17 And my real question was: do you know why
18 those quality requirements had been dropped out of the
19 industry standard?

20 MEMBER POWERS: I think -- I don't know if
21 I'm the right person -- Bill?

22 MEMBER MAYNARD: Could you go to a
23 microphone, please?

24 MR. RALEIGH: Bill Raleigh. The reg.
25 guide is 1.128. There was no reason. We talked to

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1 the Committee Chairman, and what they did was to just
2 generalize that for batteries in general, for
3 switching stations, substations, and generating
4 stations. So whereas before there was a page
5 basically that integrated a lot of nuclear
6 requirements, that they deleted that just to make it
7 general. And what we did was roll that stuff back in.

8 MEMBER MAYNARD: Okay. So there wasn't
9 any evaluation on their part that showed that there's
10 no longer a need for these. They just omitted it,
11 probably because they didn't think anybody would be
12 building any new --

13 MR. RALEIGH: That's true. That change
14 was initially made back in 1995, and it's been carried
15 forward with each of the subsequent revisions.

16 MEMBER MAYNARD: Okay. All right. Thank
17 you.

18 Okay. Do any of the other members, for
19 any of the reg. guide that you've reviewed, have any
20 questions that the staff may be able to answer?

21 MEMBER CORRADINI: Well, I guess I have a
22 logistical question. I just received one, which
23 according to the status it has to be considered this
24 month. So given the fact that either I'm super rapid
25 or I may have issues, what's the -- what's the

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1 ramifications of delaying it a month, other than just
2 putting the load to a future month, if we have
3 questions? I'm just trying to understand it, maybe
4 from the --

5 MEMBER MAYNARD: Let Mike address --

6 MEMBER CORRADINI: Yes. Mike, what I'd
7 like to suggest is to hold off on this.

8 MR. SNODDERLEY: Well, no, no, don't --
9 no, don't want to hold off. What I'd like to suggest
10 is that today we'll talk about those that people have
11 reviewed, and those that have just come in or that you
12 just have gotten.

13 MEMBER CORRADINI: Okay.

14 MR. SNODDERLEY: We have time Friday
15 morning. And so what I would say is we have -- and,
16 again, this is where I think John was acknowledging
17 that we've put a large load on the Committee. But
18 what I'd like to really try to do is ask you to try to
19 be prepared by Friday morning to -- and, again, it's
20 not -- you know, we don't have to make a decision on
21 how good or bad it is, but just whether we want to
22 review it or not, because --

23 MEMBER CORRADINI: Want to know a path
24 forward.

25 MR. SNODDERLEY: Exactly.

1 MEMBER CORRADINI: Fine.

2 MR. SNODDERLEY: So that we can either
3 schedule it for November or December. If you think
4 for that particular one on 13.3 on emergency planning,
5 you know, that could be something that we say right
6 now let's schedule it for December --

7 MEMBER CORRADINI: Okay, fine.

8 MR. SNODDERLEY: -- and maybe it has to
9 come off.

10 MEMBER CORRADINI: Okay.

11 MR. SNODDERLEY: But we're all obviously
12 going to have to do a lot of prioritization, because,
13 you know, we're also going to have to -- we obviously
14 can't look at all 23 in November and December. There
15 is some time, as was mentioned, in possibly February.
16 But that -- that's really the objective of this
17 month's meeting.

18 If we get to the point on Friday morning
19 that you haven't had enough time, let's -- we'll have
20 to cross that bridge when we get there.

21 CHAIRMAN WALLIS: Quickly, could Mike's
22 conclusion be that we don't need to review it?

23 MR. SNODDERLEY: Of course, yes. And
24 that's what also I -- you know, I've realized the
25 dangers of thanking people, because you always -- you

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1 always forget, and I know I have. But I also -- I did
2 want to mention John Ridgely and Rob Tregoning,
3 because they have been instrumental in this.

4 But I think what else I'd like to ask the
5 staff is, this evening I envision we're going to go
6 through the reg. guide list, we're going to go through
7 the SRPs that we've gotten, and we'll try to knock out
8 as many as we can.

9 And then, as Mike said, for some of those
10 where the members haven't had enough time, let's get
11 together, I would suggest on Friday morning. And if
12 the staff can be there to help answer questions, I
13 think that will be helpful, because, quite frankly, I
14 think if -- if members are struggling the inclination
15 would be to say, "Let's review it."

16 So if I could ask you guys to help us
17 Friday morning also. I think that will -- and then,
18 also, if we have questions, we'll try to relay that to
19 you and maybe you can have some answers for us by
20 Friday morning. But my objective would be that by
21 Friday we would have -- either have made one of three
22 decisions on all the submitted reg. guides and SRPs,
23 that we either don't want to review it, we want to
24 review it and when, or perhaps there are some
25 questions to clarify that we can firm it up in

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1 November.

2 CHAIRMAN WALLIS: Now, some of these
3 decisions we intend to make this evening.

4 MR. SNODDERLEY: Exactly.

5 CHAIRMAN WALLIS: The, whatever is left
6 over that we can't handle this evening, we will push
7 over to Friday morning.

8 MR. SNODDERLEY: That's my vision. And
9 then, also, the other thing that I wanted to make sure
10 was clear to you is that -- and also, there's SRP
11 sections that Steve has mentioned that they don't plan
12 to provide us. They will provide us if we ask for it,
13 but we have to -- we have to try to get that on their
14 radar screen now. So that's kind of my vision for the
15 next three days.

16 MR. CHAU: Mike, this is Tony Chau from
17 Office of Research. I have a request, because some of
18 the staff members may be on leave Friday. So it would
19 be a great help if we have some -- at least some
20 inclination as to whether you may be interested in
21 perhaps having the staff be here on Friday. Then, we
22 can try to make arrangements.

23 MEMBER CORRADINI: No, I think we -- at
24 least for the -- my little question -- my individual
25 one I want to kill it in some fashion and have a

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1 decision before then.

2 MR. CHAU: Okay. Thank you.

3 MEMBER ARMIJO: I've got a question on
4 1163, the draft guide, that's real simple. So whoever
5 can answer it is -- this looks like just an update for
6 steam dryer cracking in BWRs. And if that's all
7 you're trying to do, then that's -- that answers my
8 question. Because there's a lot of changes, but --
9 anybody from the staff on that?

10 MR. KOENICK: I believe the answer to your
11 question is yes, that, yes, this is to do with steam
12 dryer cracking. The staff has not -- is not present,
13 but I can -- I can get an answer for you.

14 MEMBER ARMIJO: Yes, because it gives a
15 list of all the things you've got to worry about for
16 a BWR, but there seems to be no equivalent list for a
17 PWR. And it's a general vibration assessment program
18 on reactor internals.

19 MR. KOENICK: Your question is focused on
20 the BWR.

21 MEMBER ARMIJO: Yes. So --

22 MR. KOENICK: Okay. And I can get with
23 you at break, and we can get you an answer.

24 MEMBER POWERS: Yes. I have a question on
25 1159, which is the concrete containments. There just

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1 seem to be a large number of exceptions to the code
2 requirements, and I just wondered, you know, how come
3 there are so many exceptions? You know, in some
4 cases, you know, you're bringing ACI comments as well
5 as ASME. Normally, when one tries to resolve these,
6 and it just -- I just have a question of why there
7 were apparently so many exceptions taken.

8 MR. O'CONNOR: Okay.

9 MR. SHAUKAT: I am Syed Shaukat. 1159,
10 there are some exceptions taken from the code, but
11 most of them were already in the previous reg. guide,
12 and --

13 MEMBER POWERS: You know, since 1981, you
14 and the code haven't gotten any closer.

15 MR. SHAUKAT: Yes. I don't think there
16 are too many exceptions.

17 MEMBER POWERS: Okay. You know, the
18 question is: how many are too many?

19 MR. SHAUKAT: But there are some
20 exceptions, yes. And primarily these exceptions are
21 that subsequent codes, for example ACI code, has taken
22 those exceptions and some of the exceptions are
23 because staff did not feel that we have substantial
24 testing results that could -- we could use. So in
25 absence of test results, we are taking exceptions.

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1 MEMBER MAYNARD: Are there any other
2 questions on your reg. guide?

3 (No response.)

4 Mr. Chairman, I believe that we've gained
5 quite a bit of time here, and, you know, a couple of
6 possibilities. I don't know that it would be
7 productive to try to go into discussion on individual
8 reg. guides at this point. But maybe some of this
9 time could be used for individual review.

10 CHAIRMAN WALLIS: I was going to suggest
11 individuals.

12 MEMBER MAYNARD: Individual review.

13 CHAIRMAN WALLIS: Professor Corradini
14 maybe can do the work on this reg. guide you've just
15 received and come back with some recommendation this
16 evening. That's --

17 MEMBER CORRADINI: Dr. Powers is over
18 there, and I'm going to ask him --

19 CHAIRMAN WALLIS: I think this is time for
20 the individual members to get prepared, and maybe we
21 can make decisions on most of these by this evening
22 without having to bring the staff in on Friday.

23 MEMBER MAYNARD: So I'll turn the meeting
24 back over to you, Mr. Chairman.

25 CHAIRMAN WALLIS: Of course, I've got a

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1 lot to give you to do now.

2 (Laughter.)

3 MR. SNODDERLEY: I'd like to give you two
4 options, Graham.

5 CHAIRMAN WALLIS: Yes.

6 MR. SNODDERLEY: One would be to take a
7 short break and let Dave Fisher -- Dave Fisher has put
8 together a table that's going to allow us to track
9 everything this weekend for us. And so make sure
10 everybody has that, and then we would literally start
11 to go through those and see which ones we can start
12 knocking out, and, you know, where we've made
13 decisions, and then also identify where we need --
14 where we need to make decisions.

15 CHAIRMAN WALLIS: Now, this is what we
16 were going to do this evening?

17 MR. SNODDERLEY: Yes, we could do that --
18 I'm just saying that that's an option. The other
19 thing is is --

20 CHAIRMAN WALLIS: We would, then, go into
21 some sort of closed -- no, this would still be an open
22 meeting? We wouldn't be able to --

23 MR. SNODDERLEY: It would still be an open
24 meeting. I mean, I -- my feeling is that we have --
25 we have the staff here with us now, you know, and that

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1 way we can take the advantage, if someone has any
2 questions --

3 CHAIRMAN WALLIS: I might sort of defer to
4 Otto. Otto, you're going to make this thing happen.
5 And if you think that's the way to do it, or we can do
6 it the other way, whatever you think is the best here.

7 MEMBER MAYNARD: Well, it depends -- I get
8 the feeling there's a number of the members that just
9 now received their reg. guides.

10 MR. SNODDERLEY: Okay.

11 MEMBER MAYNARD: And we could also get
12 quite confused as to what -- which ones we've talked
13 about, or which ones we haven't. I think it would be
14 worthwhile to hand out -- make sure we have our
15 current matrix.

16 MR. SNODDERLEY: I agree.

17 MEMBER MAYNARD: But I think that --

18 CHAIRMAN WALLIS: That would make sense.

19 MEMBER MAYNARD: -- time would probably be
20 better spent for those who have just received the reg.
21 guide to be spending time reviewing that right now.
22 And this evening when we get together, we can still --

23 CHAIRMAN WALLIS: Yes. Then, we'll all be
24 prepared this evening, and maybe this evening then can
25 go very much quicker, because we'll all be prepared.

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1 MR. SNODDERLEY: Sounds good.

2 CHAIRMAN WALLIS: Let's do that.

3 MR. SNODDERLEY: All right.

4 CHAIRMAN WALLIS: We are going to take a
5 very long break. We will not be back here until
6 12:45.

7 MEMBER ABDEL-KHALIK:: Graham?

8 CHAIRMAN WALLIS: Yes.

9 MEMBER ABDEL-KHALIK:: Maybe we can get
10 Ralph's presentation done.

11 CHAIRMAN WALLIS: That's it.

12 MEMBER ABDEL-KHALIK:: Oh, you're still
13 doing --

14 CHAIRMAN WALLIS: They're still doing --

15 MEMBER ABDEL-KHALIK:: -- doing it at
16 lunch time?

17 CHAIRMAN WALLIS: -- Ralph's presentation.

18 MR. MONNINGER: Mr. Chairman?

19 CHAIRMAN WALLIS: No, because they're
20 doing work now, so we'll have our presentation at
21 lunch.

22 MR. MONNINGER: If I may just make one
23 last -- or one additional remark. Although the
24 typical interface with the ACRS has been with the
25 project staff, I would just like -- really like to

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1 recognize the engineering staff who has supported this
2 group. I mean, there are multiple divisions within
3 both NRR and Research. I mean, your geophysical
4 scientists, your thermal hydraulics, etcetera.

5 So, you know, the majority of the
6 interactions occur with the project organizations.
7 But, really, the backbone of this effort is with the
8 hard core staff within the technical division. So
9 they also deserve the recognition, because without
10 them we could not get this job done.

11 CHAIRMAN WALLIS: So what we're going to
12 do, then, is the individual members will make sure
13 that they have these reg. guides, be prepared for this
14 evening. You probably have time to have a quick
15 lunch, because we have a report by Ralph Caruso
16 scheduled for 11:45. We'll keep it at that time.

17 He's going to report on our visit to see
18 some sump tests. That's at 11:45. Maybe you can get
19 a quick lunch at 11:30 or something, or bring your
20 lunch here, whatever is best for you. We convene at
21 12:45, and attendance will be taken. We'll take a
22 break until 12:45.

23 (Whereupon, at 10:38 a.m., the
24 proceedings in the foregoing matter went
25 off the record.)

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A-F-T-E-R-N-O-O-N S-E-S-S-I-O-N

(12:55 p.m.)

CHAIRMAN WALLIS: Please come back into session.

The next topic is New Reactor Planning Activities. Our cognizant member on this topic is Dr. Tom Kress, and I'll hand it over to you, Tom.

MEMBER KRESS: I don't know if "cognizant" is the right word or not. But as we are all well aware, we and the staff are facing a daunting workload on new reactor licensing activities, like 18 or 19 new sites, with the units associated with them. The units might be any of AP 1000, ESBWR, ABWR, and even the EPR, and maybe some that haven't even yet been designated.

And workload also includes continuing to certify the ones we haven't certified yet, early site permit reviews, the COL applications and inspections, plus the staff, as we just talked about earlier, was attempting to update all their guidance, the regulatory guides, and standard review plans, in order to make this process more effective and efficient.

So in order to effectively deal with this kind of workload, the staff has developed what they call a master integrated plan. It includes

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1 comprehensive activity list, a master schedule,
2 detailed project management plan, and things like
3 that. So what we're going to do today I think is get
4 briefed on this plan and see where we fit into it, and
5 how we need to adjust our plans and schedules to
6 accommodate theirs. So with that, I'll turn it over
7 to Rich.

8 MR. BARRETT: Thank you, Tom. My name is
9 Richard Barrett. I'm in the Office of New Reactors.
10 By this time next year, the Office of New Reactors
11 will be well on its way to nearly 500 people, but at
12 the moment there are only two of us. Bill Borchardt
13 is the Office Director, and I'm his assistant for
14 transition planning.

15 MEMBER KRESS: Do you plan on hiring a lot
16 of new people for this office?

17 MR. BARRETT: Well, there are a lot of new
18 people who are being brought in through NRR primarily.
19 And we're in the process now of dividing the currently
20 available staff between the NRR and NRO through a
21 process that we hope is not at all like hijacking,
22 actually. It's a process that will involve the staff
23 stating their preferences, but, of course, there are
24 many other factors that will be involved in that.

25 We've selected the Division Directors and

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1 Deputy Division Directors for both offices. We're in
2 the final stages of selecting the Branch Chiefs, the
3 first-line supervisors. And once that's completed,
4 we'll begin to focus on the existing staff. But we
5 have a long way to go.

6 There are probably 250 to 350 additional
7 people who will be hired into the reactor program for
8 NRR to keep NRR operating effectively to oversee the
9 safe operation of operating reactors, and to support
10 the new reactor licensing as well.

11 What we want to do this morning primarily
12 is to discuss with you the master project management
13 plan. And there has been some confusion about various
14 master plans, but it's the master project management
15 plan that we want to talk to you about primarily this
16 morning. And Kurt Cozens on my left is going to give
17 that presentation.

18 The master project management plan is a --
19 is our way of managing this enormous workload to make
20 sure that we're making optimum use of our resources
21 and that we're keeping up with the scheduling, the
22 very challenging schedules that we will have starting
23 this next calendar year.

24 But I think you've probably also heard
25 about the master integrated schedule, and that's a

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1 separate thing and it's -- and we're planning to
2 change the name of that very soon to remove the
3 confusion about it. So before Kurt gets started on
4 the main presentation, I want to spend a few minutes
5 just telling you about what the master integrated
6 schedule is all about.

7 And what it relates to primarily is
8 business process integration. And if you've followed
9 the high-level waste business at all, you're probably
10 somewhat familiar with this. But if you haven't, it's
11 a relatively simple concept, and I want to spend a few
12 minutes talking to you about it.

13 Business process integration in the new
14 reactor arena grows out of a concern about the
15 numerous development activities that are needed to
16 make new reactor licensing a successful enterprise.
17 Human capital, space, information technology,
18 contracting, training, the list goes on and on.

19 There is a lot of activity underway. And
20 for myself, speaking as one who has just recently
21 joined this effort, I have to say that I'm very
22 impressed with the efforts so far and the progress
23 that has been made.

24 So what is the role of business process
25 integration? Well, there are a number of things we're

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1 going to try to accomplish through this mechanism.
2 First, we want to examine the possibility that there
3 are -- there might be disconnects among the various
4 organizations that are involved in getting this thing
5 going.

6 For instance, in fiscal year '08, NRO will
7 place approximately 1,000 contract actions. That's
8 four per working day. Now, NRO is preparing for this
9 challenge, and the Division of Contracts is preparing
10 for this challenge. The role of BPI is to ask the
11 question of whether the efforts of these two offices
12 will mesh, and, if not, what can we do to make sure
13 that they come together through a seamless process
14 that can serve this enterprise?

15 We're also looking for topics that may
16 have been totally overlooked. I'm sure there are no
17 major topics that have been totally overlooked, but
18 there may be some minor ones. For instance, yesterday
19 we had a meeting in which we were reminded that we
20 need to identify adjudicatory employees -- employees
21 who can support the hearing process, employees who
22 have not been tainted by participation in the initial
23 review.

24 So we want to make sure there aren't a lot
25 of examples like that where things have fallen through

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1 the cracks.

2 We want to look for areas where there are
3 major opportunities for process improvements. We know
4 that our staff is looking at process efficiencies, and
5 that's the primary purpose I think of the briefing
6 today is to look at the way in which the processes
7 have been laid out and to try to identify areas where
8 efficiencies can be gained.

9 But in addition to that, we're going to be
10 meeting at the office level with all of the major
11 offices, including the management of ACRS, to see if
12 there are major process improvements that can be
13 identified and implemented to make this -- all of this
14 work go more smoothly.

15 In the coming weeks and months we are
16 going to be putting together interoffice working
17 groups to deal with the overall issue of business
18 process --

19 MEMBER POWERS: Can I come back to -- you
20 said you were looking for ways to make this whole
21 process work more smoothly. You're looking to prevent
22 somebody from coming along and saying, "Gee, I think
23 this is a bad design," or something like that?

24 MR. BARRETT: Well, I think --

25 MEMBER POWERS: I mean, it's "smoothly"

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1 that I'm worried about. What does "smooth" mean?

2 MR. BARRETT: Well, I think if there's a
3 bad design it's a bad design. We're not going to try
4 to make a bad design look like a good design. We're
5 really more looking at the business processes. For
6 instance, we know that in the process of going from an
7 application to a completed license there are many
8 people who have to touch the documents -- NRO
9 Projects, NRO technical people, Office of the General
10 Counsel, the ACRS, and others.

11 You know, do we -- have we looked at the
12 optimal way in which to sequence these things? Do all
13 of these things have to go in series or sequence, or
14 are there -- are there things that can be done in
15 parallel?

16 CHAIRMAN WALLIS: This is quite
17 independent of looking at the steps that you have to
18 go through in order to achieve a successful outcome,
19 which would be sort of outcome-oriented. And what do
20 you have to do, in what order, and so on? That's
21 quite different. You seem to be addressing how the
22 people interact. That's a different question than --

23 MR. BARRETT: I think they're related
24 questions. You have to know, what are the steps?
25 There are steps that need to be accomplished.

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1 CHAIRMAN WALLIS: None of this seems to be
2 outcome-oriented in terms of making sure we do a good
3 job.

4 MR. BARRETT: You start by laying out in
5 the master -- in the master project management plan,
6 you lay out all the steps that are necessary to do a
7 good and complete job. And that -- and you're going
8 to be hearing a lot about that today and in the
9 future. Once you've laid all of that out in a -- in
10 the context of some project management software, for
11 instance, you can then begin to look at whether --
12 how things can be sequenced.

13 For instance, I think for the first time
14 we'll be making major use of electronic submittals,
15 and that's going to be absolutely necessary for the
16 success of this thing. And we -- our information
17 technology people are already working on that. Does
18 that -- we could raise the question, does that present
19 us with an opportunity for a more -- for more parallel
20 reviews rather than sequential reviews? Because
21 schedule is going to be very important here.

22 Nothing is as important as quality and
23 safety, and those are -- that's our effectiveness.
24 But the question here is one of efficiency and
25 schedule.

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1 MEMBER MAYNARD: Well, I would contend
2 that the efficiency and the effectiveness of the
3 process is very important to the quality. You cannot
4 get a good quality product if your process is
5 inefficient and disorganized, and so I would say this
6 is a critical element to have the opportunity to come
7 out with a quality product.

8 MR. BARRETT: I would agree. I would
9 agree. And I --

10 MEMBER BONACA: Rich, I just had a
11 question. You're talking about up to 500 people by
12 the end of next year?

13 MR. BARRETT: Yes.

14 MEMBER BONACA: Are you looking at the
15 cascading effects from other areas of NRC that will be
16 drained, because I'm sure this group will offer
17 opportunities and you have -- and yet you need the
18 support groups to help --

19 MR. BARRETT: Yes.

20 MEMBER BONACA: -- with this.

21 MR. BARRETT: We are looking at the
22 potential effects. You know, up until now we've -- I
23 don't have the exact numbers, but the reactor program
24 here in headquarters has gone from approximately 500
25 people to well over 700 people, which means that we've

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1 hired a lot of people from outside -- primarily from
2 outside of the agency, people who are at all stages of
3 their careers -- junior people, mid-career people,
4 senior people.

5 Up until now, I would say -- I think it's
6 fair to say that we have not had a major adverse
7 impact on the other technical offices, for instance
8 the Office of Research. But we are meeting with the
9 Office of Research to talk about just this issue,
10 because we don't want to have a situation where we
11 drain all of the -- for instance, all of the junior
12 people out of the Office of Research. That would be
13 very counterproductive to the long-term health of the
14 agency.

15 MEMBER BONACA: I will be very worried
16 about that. I was thinking just for Research.

17 MR. BARRETT: Yes.

18 CHAIRMAN WALLIS: Has any one of these
19 utilities raised the money for these plants?

20 MR. BARRETT: I'm sorry. I can't talk to
21 -- I really can't speak to that. I don't know.

22 CHAIRMAN WALLIS: You could get a kind of
23 Gilbert and Sullivan scenario where you hire 700
24 people and nothing comes in the door.

25 MR. BARRETT: I think that it's highly

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1 unlikely that nothing comes in the door.

2 CHAIRMAN WALLIS: I know it's unlikely.
3 But, I mean, I haven't yet seen anyone put down the
4 money and say, "We're going to give you \$10 billion to
5 make this thing happen."

6 MR. BARRETT: No. I don't think anybody
7 is putting \$10 billion down. I think they'll spend
8 the money as they need to spend it.

9 CHAIRMAN WALLIS: It said they have an
10 intent, but that's -- lots of things are different
11 between having an intent and actually the means to
12 carry it out.

13 MR. BARRETT: Right.

14 CHAIRMAN WALLIS: So it's going to be very
15 interesting to see how the reality conforms to the
16 intent.

17 MR. BARRETT: Right.

18 MEMBER SIEBER: I think, Rich, you are
19 exactly right. Utilities or operating companies only
20 get the money when they have to pay bills.

21 MR. BARRETT: Right.

22 MEMBER SIEBER: They don't get it in
23 advance, because they don't want to pay the interest.
24 There's no income.

25 MR. BARRETT: Yes. I can't speak to this

1 in detail, but I think there actually have been some
2 indications of some advanced planning toward the
3 fabrication of major -- major components.

4 MEMBER SIEBER: Vessels and --

5 MR. BARRETT: But I think from our
6 perspective, the question right now is whether they
7 have the intent to invest in the licensing process.
8 And I think there's a lot of confidence in that.

9 MEMBER MAYNARD: Well, you can't wait
10 until someone submits an application to then start
11 building your ability to --

12 CHAIRMAN WALLIS: Of course not.

13 MEMBER MAYNARD: -- deal with this.

14 CHAIRMAN WALLIS: Of course not.

15 MR. BARRETT: No. No, we're hiring a lot
16 of people. We have to train them technically, we have
17 to train them in terms of regulatory process, we have
18 a lot of work to do and not a lot of time to do it.

19 MEMBER CORRADINI: So, can I ask a
20 question? Maybe you're going to get to it in your
21 fifth -- the master integrated schedule. Has there
22 been a discussion as to, are you staffing up for the
23 complete surge of potential activity or some queued
24 amount per year? Is that coming? Are you going to
25 bring that up?

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1 MR. BARRETT: I'm not going to get into
2 that detail. But to the extent that I can answer
3 that, the answer is we will -- we will be staffing up
4 to meet the work that we anticipate at any given time.
5 Now, the reality is that starting at the beginning of
6 fiscal '08, a lot of work comes in all at once,
7 because we have a design-centered approach, so that
8 once you get, for instance, a single AP 1000
9 application you are -- you know, you are fully engaged
10 in AP 1000.

11 MEMBER CORRADINI: I understand. But I
12 guess what I'm asking, and this is kind of what Graham
13 is asking, but I'll ask it more crudely, could we even
14 build more than two nuclear powerplants in this
15 country at a time, given the need for the technicians,
16 the craft workers, and all of the skill levels that
17 have been absent for three decades? Or, shall we say,
18 have been diminishing for three decades?

19 And so I'm curious what the -- what the
20 realistic goal is versus what the advertised goal is.
21 Do you see my question?

22 MR. BARRETT: Yes, I do. I think that,
23 again, I'm not in a position to answer that question,
24 whether or not the industry is prepared to build the
25 plants. But I can say that we have a schedule that

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1 has been laid out for the licensing, not the
2 construction, the licensing of these plants. And that
3 -- we have laid that out based on commitments on the
4 part of licensees that we feel are credible.

5 MEMBER SIEBER: There is history, though,
6 to maybe address your question. In the original birth
7 of the nuclear industry, there was no infrastructure
8 either except whatever the Navy provided, which was
9 not very much. Yet in -- from 1957 when Shippingport
10 went online to about 1967, there were about 50
11 reactors ordered, a lot of them under construction.
12 All that infrastructure came about. There isn't any
13 reason why it can't happen again.

14 And so I think that you -- you can't take
15 the chance of sitting back and saying, "I don't think
16 those other guys over there can do it, so I don't have
17 to work real hard." That just won't work.

18 MEMBER MAYNARD: And the infrastructure to
19 actually start building it doesn't have to be there at
20 the time that the license application is submitted,
21 which is when your work really starts.

22 MR. BARRETT: That's right. Unlike the
23 previous round of licensing, the licensing to some
24 extent, to a great extent, precedes the construction
25 process.

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1 Was there another question?

2 (No response.)

3 I say all of this as -- just as a -- to
4 clarify this misunderstanding between the master
5 integrated schedule and the master project management
6 plan. The master project management plan is a
7 substantial effort that will be very important to the
8 success of this enterprise.

9 The master integrated schedule is
10 associated with the business process integration, and
11 it's a -- it is simply a way of keeping track of the
12 action items that come out of the effort that I was
13 just talking about, the action items that we will
14 identify and want to schedule and track that are
15 associated with making sure that our business
16 processes are ready.

17 And so it's a relatively minor effort, and
18 it's simply there for communication and coordination
19 within the management team of the NRC. So I think
20 that one of the first things we're going to do is
21 change the name of the master integrated schedule to
22 something else, anything else, so that we can avoid
23 this confusion in the future.

24 MEMBER KRESS: Good idea.

25 CHAIRMAN WALLIS: Great.

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1 MR. BARRETT: Are there any other
2 questions about business process integration or about
3 the master integrated schedule or --

4 MEMBER ARMIJO: Yes. If you're looking at
5 your process, are you actually -- will you look at
6 steps in your current processes that can be
7 eliminated, that are just unnecessary? Is that even
8 possible, to take out work in the process that has
9 been -- that adds no value?

10 MR. BARRETT: That would be our hope, yes.
11 For instance, I mentioned that we -- we will have to
12 put in place 1,000 task orders in the year -- in FY08.
13 You know, when we were just doing a few, when NRR had
14 a budget of \$3 million, that was -- it was not a great
15 priority to try to optimize that process.

16 With an annual budget of \$60 million, it
17 will be very much in our interest to see any small
18 step that we can eliminate. And it's the handoffs I
19 think that are going to be more important than the
20 steps. It's the -- how smooth are the handoffs, are
21 going to make the difference between success and
22 failure.

23 Okay. With that, let me turn it over to
24 Kurt Cozens.

25 MR. COZENS: Good afternoon. I'm Kurt

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1 Cozens. I have some responsibility for developing the
2 licensing review plan, and that's what we'd like to
3 talk a little bit about today.

4 We're going to call it, for the purpose of
5 this presentation, instead of the integrated licensing
6 plan, we'll just call it the new plant licensing plan,
7 make it simple, because there has been a lot of
8 confusion with the terminology. And quite simply put,
9 the scope of what we're doing here -- I'll start with
10 here is we are looking at from the time we receive the
11 application to the time the license decision is made.
12 It's the review process, and how are we going to
13 support that.

14 Within our activities, we have basically
15 three different primary elements that we'll deal with,
16 and those are, first of all, the integrated Gantt
17 chart of the reviews, the tasks necessary to take an
18 application, have the technical reviews and processes
19 done.

20 We're also looking at the planning and
21 scheduling program plan. Just have a Gantt chart to
22 say these are the steps you're going to do is not
23 sufficient to manage a large program like this.
24 There's a lot of infrastructure that's necessary to
25 support it, who owns what responsibility, as was

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1 talked about the handoffs, the management decisions,
2 the change controls, things of this nature that we
3 need to have a definition of how it's going to be
4 done. Just don't throw 500 people in a room and say,
5 "Please do a good job." We need a little bit more
6 control.

7 We are also taking the -- this program
8 plan into new technological areas, planning to use as
9 the basis for the control of the schedule the
10 Microsoft Project Enterprise System. It is a server-
11 based program that has the benefit of being able to
12 status electronically, so you don't have to go around
13 chasing bodies, and that we have ability to make
14 changes and controls in a more systematic manner
15 versus transmitting the paper around.

16 There's a lot of features in there that I
17 will not be going into today, but short of going to
18 something like Primavera is probably the most
19 sophisticated technology we could go, Primavera being
20 what they might be using for the actual construction
21 of the plant to match the project of that.

22 Basically, you may have seen this slide
23 before.

24 MEMBER KRESS: On that previous slide --

25 MR. COZENS: Sure.

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1 MEMBER KRESS: -- it got four early site
2 permits.

3 MR. COZENS: Correct.

4 MEMBER KRESS: And 19 combined operating
5 licenses.

6 MR. COZENS: Correct.

7 MEMBER KRESS: Does that mean four
8 licenses per side or --

9 MR. COZENS: No.

10 MEMBER KRESS: -- there would be more
11 sites?

12 MR. COZENS: I'll talk about that in this
13 next slide.

14 MEMBER KRESS: Oh, okay.

15 MR. COZENS: That's this. I figure we
16 could look at a slide or look at a nice graphic. I
17 don't know if you've seen this before. It's been
18 around. We've used it as a method of demonstrating
19 the large amount of work that's coming in. The blue
20 lines there represent COLs.

21 COL may have one or more unit associated
22 with it, and the interesting, maybe even scary part,
23 if you draw a line through these blue lines, and the
24 green lines which represent ESPs, and the red lines
25 which represent signed certifications, boy, there's a

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1 lot of stuff going on all at once. That's what we're
2 trying to manage.

3 MEMBER SIEBER: You're going to have a lot
4 of hearing boards going on all at once.

5 MR. COZENS: That's also a true statement.

6 MEMBER SIEBER: That's going to be tough
7 to support.

8 MR. COZENS: It'll be interesting. This
9 diagram here basically represents the type of
10 durations that we would be expecting to try to perform
11 these reviews.

12 MEMBER POWERS: I have a feeling our
13 Thermal Hydraulics Committee can cause some spread in
14 that --

15 (Laughter.)

16 MR. COZENS: But what I wanted to point
17 out is the red text here. Is this a pointer? What is
18 this? How does this work? Where is the pointer?
19 There it is. This text here.

20 MEMBER KRESS: Somebody can read.

21 (Laughter.)

22 MR. COZENS: Basically, it says actual
23 schedules will be determined when the applications are
24 docketed. Budget Management 101 is real simple. You
25 build a plan, what you expect to do it in, and the

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1 only thing you know for certain you'll have challenges
2 along the way that will probably have some adjustments
3 to the schedule.

4 So we start out with a plan of what we
5 think we're capable of doing and do our best to hold
6 that schedule while doing the technical reviews we
7 need to do. What we're doing here today -- and this
8 discussion has nothing to do with the technical
9 content of the reviews. That's being addressed by
10 other things that you heard something about earlier
11 today -- the SRP, the reg. guides, the regulations as
12 they exist.

13 CHAIRMAN WALLIS: Now, but these things
14 are going to be -- the COL is going to be approved
15 before the design has been certified.

16 MR. COZENS: That is -- John?

17 CHAIRMAN WALLIS: Before you know that
18 it's a safe design, you're going to give a license, or
19 about the same -- yes, in some cases, before you know
20 it's a fully safe design and certified, you're going
21 to give a license?

22 MR. COZENS: Actually, the -- John, would
23 you like to address that?

24 MR. TAPPERT: Yes. My name is John
25 Tappert. I'm the Branch Chief for the Planning and

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1 Scheduling Branch in the New Reactor Licensing
2 Division.

3 I guess you're looking at the EPR. Is
4 that --

5 CHAIRMAN WALLIS: Right.

6 MR. TAPPERT: That's -- we're actually
7 doing some detailed planning on that right now,
8 because that is going to present some unique
9 challenges. The last month of that design
10 certification you're seeing up there is actually the
11 rulemaking phase. So you're going to have your final
12 design approval before that's -- you know, while
13 you're in the hearing phase from --

14 MEMBER KRESS: I think from the ACRS point
15 of view, we spend an awful lot of time on design
16 certification to make sure that --

17 MR. TAPPERT: Right.

18 CHAIRMAN WALLIS: -- the features of this
19 reactor are okay, that public safety is okay, and that
20 technically it will work, as said to work. We spent
21 a lot of time on that. That's probably where we make
22 the most contribution to the whole process.

23 MR. TAPPERT: And I think as Kurt goes
24 through this you're going to see that's where we're
25 going to expect the heavy lifting to be done by the

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1 Committee is on those design certifications.

2 CHAIRMAN WALLIS: These other things are
3 going to be going on at the same time. It's going to
4 be interesting.

5 MR. COZENS: Yes, it is.

6 MEMBER CORRADINI: So did you answer
7 Graham's question about how you're going to do the red
8 -- how you're going to accomplish the blue before the
9 red is done? I missed that.

10 MR. TAPPERT: They can be done in
11 parallel, and what we need to do is we need to look at
12 what -- whatever the specific technical area is
13 involved and sequence those reviews. The design
14 center review approach can still be applied in this
15 context in the sense that we only want to do one
16 review for one issue. So if that issue can be handled
17 in the design certification, what we're expecting is
18 to combine licenses to reference that, and to have
19 that decision kind of tiered down through that. So --

20 CHAIRMAN WALLIS: I can see the blue
21 folks, though, being very upset that the red folks
22 were not getting things done, the schedule that they
23 want.

24 MR. TAPPERT: Well --

25 CHAIRMAN WALLIS: Even though it's

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1 necessary.

2 MR. COZENS: I would like just to add, one
3 of the -- first of all, to make certain that everybody
4 understood what John was saying. This red line here
5 is the entire design certification process. The last
6 12 months of it are the rulemaking based upon the SER
7 that's been issued. So at about this point in time
8 you've pretty much settled all the technical issues
9 for all practical purposes. It will also add to --

10 CHAIRMAN WALLIS: By that time, some of
11 these things have been licensed, haven't they? I
12 mean, the --

13 MR. COZENS: No, these are actually --
14 maybe the pictures are. But this point and that point
15 are supposed to match up.

16 CHAIRMAN WALLIS: But the blue stuff is
17 all over by -- before that last 12-month period.

18 MEMBER ARMIJO: Look at the ABWR. You've
19 got a certified design there, and the combined license
20 would be issued about the same time as -- or an EPR
21 where we haven't even gotten something to look at to
22 certify.

23 MR. BARRETT: Can I make a point?

24 MEMBER ARMIJO: It seems like one would be
25 a lot faster, and the others were going to be a lot

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1 slower.

2 MR. BARRETT: I'd like to make a point
3 about this. The way in which Part 52 is written does
4 not require a design certification to issue a combined
5 operating license. So they -- by the time you
6 complete that blue line there for Unistar Calvert
7 Cliffs, all the safety issues associated with the
8 design will have been satisfactorily resolved.

9 The design certification is not necessary
10 for issuance of that license, I don't believe. It's
11 useful for the issuance of future licenses that might
12 -- that might reference it. But it's not necessary to
13 reference a design certification to get a combined
14 operating license. It's only necessary that you get
15 a sufficient safety finding on the design that's being
16 used.

17 MEMBER CORRADINI: Can I ask a question?
18 So what you just said is, if it turns out that it's
19 more expeditious to review it in blue, you'll do it,
20 and let the red take that review result for the design
21 certification.

22 MEMBER MAYNARD: I don't think from a
23 practical standpoint that will probably happen,
24 though, because I don't think with the staff's
25 resources and what they're going to be doing I don't

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1 think they're going to be reviewing a specific design
2 area for an individual licensee when they've got the
3 design certification going on.

4 So I think, from a practical standpoint,
5 it's going to fall out with the design certification
6 review, and to the COL. And I think it's also part of
7 the plan, as I understand it, is that these are
8 sequenced by areas to where you're not going to be
9 reviewing one part for one COL and a totally different
10 area that hasn't been reviewed yet for design
11 certification. It's going to be kind of a --

12 MR. COZENS: And I just might add we are
13 about ready to enter the phase where we start looking
14 at the integrated activities of a design
15 certification, a COL, stacking of COLs and other
16 efforts. And one of the things we're taking a very
17 careful look at is the sequencing of events,
18 particularly in this EPR, to assure that the
19 information decisions are technically made, so we can
20 make decisions on other documents from DC to the COL,
21 what have you.

22 And it's something that we will be
23 modeling in more detail. That effort is not complete
24 as of yet. But it is something that we are indeed
25 looking at.

1 The point I wanted to make is this is a
2 representation of what we'd like to do. We realize
3 that we're going to have to make some commitments at
4 the time, that -- maybe that's too strong a word, but
5 some decisions at the time what our targets will be at
6 the time of receiving the application, and the plan
7 will be initiated and baselined, and then we'll be
8 torquing that and adjusting it as the technical
9 reviews dictate.

10 MEMBER MAYNARD: I think it's also going
11 to be highly dependent on the industry's ability to
12 coordinate their own activities and standardize as
13 much as they can in their submittals. If everybody
14 comes in with a lot of unique things and variations,
15 the process won't work, and it won't be in anybody's
16 best interest.

17 MR. COZENS: I don't have a slide on this,
18 but you've raised a good point. Last year we issued
19 RES 2006-06. One of the questions that was asked:
20 would you please tell us about how the sections will
21 be standardized? And about 75 percent of the
22 sections, the design center working groups, which is
23 industry, like AP 1000s or EPRs or what have you, they
24 told us about 75 percent of the sections will be
25 standardized from the reference down through the

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1 subsequent. And when we asked what they did with it,
2 they say "verbatim."

3 So we would anticipate that if, you know,
4 the reference COL is acceptable that the subsequent
5 ones would also be acceptable, unless there is some
6 sort of perturbation that would make that not the
7 situation. At least we would know where we stood with
8 that first review, which makes the subsequent reviews
9 much more streamlined.

10 As I said, one big part of this program
11 plan is the Gantt chart, and I've started -- that's
12 the highest level on the previous slide. But there's
13 a lot of associated planning and thinking that goes
14 into, how do you control this thing? And these are
15 the chapters that we would have in this program plan.
16 I will note that it is modeled after the high-level
17 waste program plan that was developed using good
18 practices, industry good practices for plant program
19 planning -- project management planning, I mean.

20 And so what we have here is a section that
21 will go into the organization that will be key to us
22 understanding how we do several different things and
23 how the functionality of the organization will work.
24 That will play out largely in the workflow and
25 controls. It can also affect significantly the change

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1 management on, what does it take, and who has the
2 authority to make changes in the processes or
3 schedules or resources, our communication plans?

4 We will discuss that -- largely driven
5 through the organizational structure and the technical
6 needs of the reviews. So we will have a definition of
7 how this program plan will be working, looking at all
8 of these different subject areas that are
9 characterized in these chapters.

10 We're in the process of developing this
11 document as we speak. We started basically in June.
12 We're coming along nicely. We're targeting to have
13 Rev 1.0 completed by the end of this year. This has
14 a lot of meat on how NRR will be operating and how we
15 will be controlling this product of performing
16 licensing reviews for new reactors.

17 The process we're going through to model
18 the Gantt chart follows some basic, simple principles
19 -- start simple, get more complicated. We are
20 building some templates for the scheduling of
21 resources. These will be our basic building blocks,
22 that if you look at the 26 reviews that we now believe
23 we have available to us we will stack the Gantt charts
24 for the COLs, the DCs, and the ESPs, and then we'll
25 make adjustments on those accordingly.

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1 We will be integrating them with --
2 believing that we have a good handle on the steps we
3 need to, but we also need to look at how our resource
4 loads are being affected. Are we overallocating or
5 underallocating? Do we have an opportunity to move
6 some work around to make it a little bit more level-
7 loaded? Do we need to contract reviews? These are
8 the type of decisions that this integrated chart can
9 help us make decisions on.

10 And this is a living document. You don't
11 make it once, leave it on the shelf, and walk away
12 from it. Probably before we ever get our first couple
13 applications we'll have gone back and made some fairly
14 significant revisions to Rev 1.0 as we understand the
15 changes of dates of submittals, better understanding
16 of the technical review needs, and as things get
17 polished as we go through and our efforts of
18 preparation.

19 The Gantt charts themselves are based upon
20 about 40 meetings with review stakeholders. We
21 brought in each branch -- technical branch, confirmed
22 that they indeed have these sections for review, and
23 ask them what technical skill sets are necessary for
24 each subsection of the SRP that they will be reviewing
25 these things against.

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1 A typical COL Gantt chart looks like it's
2 going to have around 3,500 line items a task. Stack
3 these up with these DCs and ESPs, you're probably
4 looking at like a total of somewhere around 80,000
5 line items a task for all the work that we're doing
6 over the next three to five years of effort as these
7 things will take to go through the licensing review
8 process.

9 Currently, we are loading these Gantt
10 charts up with generic skill sets based upon our
11 interviews that we performed with our technical
12 reviewers, looking at specifically for this small
13 subsection of the SRP, what does it take to perform
14 the review? Who needs to do this review? Do we have
15 that skill set in-house? Does this skill set need to
16 be hard? Do we need to contract it out? If we go
17 out, what are we looking for? So we can get the right
18 resources available to perform these reviews.

19 So we're looking very carefully at our
20 resources here. This has also been used as an input
21 for our budgeting practices, and will be used as we
22 look at level-loading, our efforts in making changes.
23 I'm sure as the NRO goes on there will be adjustments,
24 and this will be one insight into that.

25 So it's a good tool for giving us insights

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1 as to, what's the current status? What do we need in
2 the future? As things change, it's a good tool for
3 doing scenario planning on, what's the consequences of
4 this change? Or if we do have a challenge to the
5 schedule or the resources, what are we going to do?
6 We can try different scenario planning to help make
7 the best decisions possible.

8 So this tool is a living tool. It will be
9 maintained through the licensing reviews. As I
10 understand -- my current understanding is there will
11 be a branch to manage this effort of managing this
12 program plan for -- as the tool for the decisionmakers
13 that need to make decisions.

14 As I had mentioned, this is being created
15 in Microsoft Project Server Enterprise. We have
16 purchased a brand-new bank of servers just for this,
17 and OIS is supporting us in that effort. We take
18 advantage of the fact that the MS Project Server does
19 take data via internet, so our reviewers can give us
20 statuses and greet it up to schedule in a very short
21 period of time, giving us an opportunity to look at
22 where we are in our reviews, the variances in
23 planning, and etcetera. And this, like I said, a very
24 good tool for giving insights to the management of
25 what's going on.

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1 This is just a picture. You can't read
2 that at all, can you? Maybe it's better in your
3 presentation.

4 MEMBER ARMIJO: It's worse.

5 (Laughter.)

6 It's sharper, but it's still unreadable.

7 MR. COZENS: Well, the intent was not for
8 you to read it. The point is, the level of detail
9 we're going.

10 MEMBER ARMIJO: Okay.

11 MR. COZENS: Normally, if you put it in
12 basic terms, when a portion of a review changes hand
13 of responsibility, you need to transfer that
14 responsibility. That's where we take this level of
15 review down to. If a section gets reviewed by one
16 technical branch, and it's passed off onto another for
17 another activity, we need to transfer the ownership of
18 the activity going on.

19 That's how -- why the tasks here are as
20 many as they are. We have a lot of hands-off. We
21 have somewhere in the order of approximately 225
22 sections of the SRP that have discreet portions of the
23 SER inputs that come in to make up the overall SER.
24 And we go through -- we're planning on two phases of
25 this SER, which will be an SER with open items, which

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1 we would think we'd want to have an opportunity to
2 discuss with the ACRS, and then the supplement, which
3 would close out those open items.

4 CHAIRMAN WALLIS: Is this all laid out,
5 that someone starts a certain task on Wednesday, so-
6 and so, and finishes it on Thursday, this so-and-so,
7 or --

8 MR. COZENS: We will --

9 CHAIRMAN WALLIS: It's very much a
10 production type schedule you've arranged here.

11 MR. COZENS: We believe --

12 CHAIRMAN WALLIS: Is that appropriate for
13 safety evaluation?

14 MR. COZENS: We have asked the safety
15 reviewers how much time they need to perform these
16 reviews. If in fact they get into a review and find
17 out that they've started the review, but it requires
18 more time, they have to notify through the channels
19 that -- what will be necessary, we'll put a new date
20 in there, and see what the consequences are.

21 This is not intended to tell you how to
22 perform your reviews. It's a reflection of what we
23 understand currently it will take to do the review.
24 If that understanding is not correct, we need to make
25 adjustments to these Gantt charts to make certain we

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1 understand what the future looks like.

2 CHAIRMAN WALLIS: It's very difficult to
3 predict these things, isn't it? I'm just thinking
4 about my experience with, say, reviewing thermal
5 hydraulic codes. If someone said you're going to
6 start on Monday, September 17th, and review Section
7 so-and-so, and it's got to be finished by Wednesday or
8 -- well, sometimes it's trivial. You read through the
9 thing and everything is fine, and it's five minutes,
10 let's say. Other times you say, gee whiz, what a
11 minute. Something is really odd about that piece. I
12 need to go and dig into that. It's going to take me
13 two weeks, not a day.

14 MR. COZENS: In general, most things are
15 knocked down to a day. Most reviews have one or two
16 characteristics. First of all, if it's something
17 that's been settled in the design certification and
18 you're working a COL --

19 CHAIRMAN WALLIS: Yes.

20 MR. COZENS: -- you would be referring
21 back -- you'd be confirming that you satisfied it.

22 CHAIRMAN WALLIS: If it's already -- if
23 the design certification has been done right, this
24 should be much easier.

25 MR. COZENS: Now --

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1 MEMBER SIEBER: I presume there are some
2 basic assumptions built into these schedules, one,
3 that the applicant follows the standard review plan --

4 MR. COZENS: Yes.

5 MEMBER SIEBER: -- that the standard
6 review plan exists, and that it takes so many hours or
7 days to read through and examine these factors and the
8 outcome as positive in every case. Anything beyond
9 that represents a delay, which you would reflect in
10 the schedule.

11 I don't see a conflict between schedule
12 and safety myself. On the other hand, these schedules
13 are only -- are not particularly useful in predicting
14 how long it's going to take to do a given review.

15 CHAIRMAN WALLIS: There can be a conflict.
16 I mean, if somebody really has a safety issue, maybe
17 is a real one, and it's in conflict with the schedule,
18 I'm afraid there will be too much management pressure
19 on that person to get on with the job and finish it,
20 without really resolving the issue that concerns him.
21 That's the only thing I'm concerned about.

22 MEMBER MAYNARD: Well, I -- but I think
23 that if management is going to do that, you're going
24 to have that problem whether you have a schedule or
25 not. I think schedules are important and compatible

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1 with safety. It's how you use it that's important.
2 Schedule is a tool, and is not a hard-and-fast thing
3 that is cast in stone.

4 And I think in the beginning of these
5 processes the schedules are probably not going to be
6 all that accurate. You're going to learn as time goes
7 on you can refine them, but it becomes a good
8 management tool, such that when you do run into areas
9 it gets the right level of management involved to deal
10 with the issues. It's how you use the schedule.

11 MEMBER ABDEL-KHALIK: But do we understand
12 all the processes in sufficient detail to know the
13 optimal sequencing of the various tasks?

14 MR. COZENS: We have reasonable confidence
15 that we have a good handle on the sequencing of tasks,
16 mainly because, you know, we know what it takes to do
17 licensing, we know the type of steps that the
18 individuals that have to make decisions in this
19 process. As far as the duration of the tasks, we have
20 drawn on our practical experience of those people that
21 actually do these reviews.

22 We brought them in and asked them: how
23 much time do you think you need for this? And then,
24 we add an element of margin to that amount of time.

25 Now, with an NRO structure, having created

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1 the new Office for New Reactors, there's a real
2 benefit. You basically have a dedicated set of
3 technical resources that you can plan to start reviews
4 at a particular time. That's the number one feature
5 of planning and schedule -- when are you going to
6 start?

7 Now, the question of when you finish takes
8 into consideration the technical content of the
9 review, and only the reviewer themselves can make that
10 final decision whether or not they have found how long
11 it's going to take to complete that technical review.
12 If it's a new area, such as you get into design
13 certifications that you may have not seen before, or
14 if it's a somewhat predetermined area as far as what's
15 acceptable, such as you have a COL and you're
16 referencing a design certification that has been
17 approved, yes, it takes a different level of effort,
18 admittedly.

19 But still, even then, you could run into
20 problems with the review. We've anticipated that
21 there will be some staggering of activities, and that
22 some activities take longer than others. That is not
23 necessarily an automatic critical path item. It may
24 be the fact that that technical reviewer is not
25 available for another activity. It may have an impact

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1 in that regard. But as far as a singular review --
2 licensing review, it may not have an impact on
3 this --

CHAIRMAN WALLIS: Each one of
4 these lines looks like a task and a time schedule.
5 How many of these are there in this?

6 MR. COZENS: A COL and a DC approximately
7 have 3,500 line items a task per application.

8 CHAIRMAN WALLIS: So 3,500 lines like
9 these lines on here?

10 MEMBER KRESS: They're different, and
11 that's -- when and if you get around to using
12 Primavera, that's where it's a big help. You have to
13 have all these inputs, and it will -- it will track
14 them for you and automatically adjust them when you
15 have changes and --

16 MR. COZENS: That does this also.

17 MEMBER KRESS: Yes. And so -- yes, that's
18 a lot like Primavera I guess.

19 MEMBER MAYNARD: One of the real values
20 that can come out of this is if the review groups will
21 look at it ahead of time and identify how much time
22 they have, what tools do they need, I think it will
23 help define what they need in the way of resources,
24 analytical tools, and other things, and if with all
25 those tools they can't meet it, then they can come

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1 back and provide beforehand an adjustment to the
2 schedule.

3 MR. COZENS: Matter of fact, our
4 development is very heavily involved on stakeholder
5 feedback. For instance, tomorrow I'll be passing out
6 to our technical reviewers the template, the one 3,500
7 line item of the COL that addresses where they are
8 scheduled to have activities, and asking them for
9 feedback. Is this correct? Does something need to be
10 changed? And so we are very much trying to always
11 bring in the stakeholders that use this.

12 The key to the success of an activity like
13 this is to get stakeholder buy-in. Therefore, when
14 the challenges do happen, and they will, they are
15 willing to come back and say, "We now understand
16 better, it's not this, it's this."

17 And we can start to do that, and we --
18 there will be a constant learning curve in the sense
19 of adjustments that will be necessary to keep this
20 thing current and up to date. If it's not current and
21 up to date, it can't be a tool for success. It
22 becomes a hindrance. So keeping it up to date is
23 very, very important.

24 MEMBER SIEBER: Now, applicants are going
25 to have access to this, too.

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1 MR. COZENS: No. This is internal. We'll
2 give them milestones.

3 MEMBER SIEBER: For example, a reviewer
4 goes through the standard review plan and prepares the
5 requirements to the information in the application,
6 finds things that are missing, finds things that are
7 wrong, finds things that are not adequately explained,
8 and out comes a slew of RAIs. Along with every RAI is
9 a friendly note to the licensee, "You're not a
10 critical path." That reviewer should go do something
11 else.

12 MR. TAPPERT: Right. And that's actually
13 factored in this schedule.

14 MR. COZENS: That's the steps we go
15 through -- technical review, RAIs issued.

16 CHAIRMAN WALLIS: Factored in this, do you
17 know how many RAIs are going to be --

18 MEMBER SIEBER: No. No.

19 MR. TAPPERT: You develop RAIs. The
20 expectation is there are RAIs, because that has been
21 our experience. As Kurt said, this is just a plan.
22 And the one thing we know about the plan is it's going
23 to have to be modified as we go along.

24 We have some historical experience with
25 some of these reviews. We have done some design

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1 certifications. We're going through some of those
2 early site permits right now, so we tried to factor in
3 what we know. And where we don't have experience,
4 we've gone to the subject matter experts to estimate
5 both the level of effort and also the duration of the
6 review. That's an estimate at this point.

7 And we're going to be a lot smarter three
8 years from now. But right now we're just trying to
9 get our arms around this body of work and make sure we
10 have the right number of people and the right kind of
11 people to do this work. So that's kind of where we
12 are now. It's going to be an iterative process as we
13 go forward.

14 CHAIRMAN WALLIS: I think that's a very
15 reasonable thing to do. But I think the difficulty
16 may well be, since this is such a complex process, and
17 sort of -- you know, we know the technical assessments
18 can't always be predicted, what's going to happen.
19 But the adjustment of the schedule, as things evolve,
20 is going to be perhaps very -- the most difficult part
21 of it, as it turns out that there are bottlenecks here
22 and there and all sorts of things happening.

23 Some RAIs don't get responded to on time,
24 and it's going to -- an adjustment of the schedule to
25 all of those things is going to be perhaps the key to

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1 the whole thing.

2 MR. TAPPERT: That's very true. And
3 hopefully what we're hoping this tool will do for us,
4 though, is to be able to articulate what those impacts
5 are going to be. You know, this is now a critical
6 path. What can we do -- what can we keep going while
7 the -- while we're waiting on that RAI response? And
8 what other reviews are going to be impacted if we
9 don't get this in time?

10 So it's a very powerful tool. It's not
11 something that the agency has used a lot before, so
12 we're kind of learning as we're going as well.

13 CHAIRMAN WALLIS: Well, even a schedule
14 model for production in a factory with machines, which
15 are somewhat more predictable, is difficult. So --

16 MEMBER ARMIJO: You know, Graham, this is
17 what the people who design and build the reactors in
18 the fuel use and --

19 CHAIRMAN WALLIS: We have to do something
20 about --

21 MEMBER ARMIJO: And when something is
22 delayed for good reasons, you have the option of
23 adding resources, finding them from somewhere else if
24 you're scheduled. So I think it's -- there's no other
25 way to do it.

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1 CHAIRMAN WALLIS: I just feel that this --
2 this is very appropriate for certain business
3 activities, and I think safety is somewhat tricky.
4 Safety is --

5 MEMBER ARMIJO: Well, reactor design is a
6 safety --

7 CHAIRMAN WALLIS: My sense is --

8 MEMBER MAYNARD: And I agree you have to
9 be cautious with it. The industry, when they started
10 emphasizing shorter outages, everybody screamed there
11 was going to be too much schedule pressure, it's going
12 to be unsafe, and a bad thing to do. But what it
13 ended up doing was really forcing everybody to take a
14 look and do a better job of preplanning up front.
15 And, actually, the outages overall became safer and
16 much better controlled. And I think this will be the
17 same thing.

18 CHAIRMAN WALLIS: Yes. I think it may
19 well be true. It will be --

20 MEMBER MAYNARD: But it's how you use it,
21 and it is going to have to be managed. I agree it can
22 be misused and --

23 CHAIRMAN WALLIS: But you have to do
24 something like this. You have to do something like
25 this.

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1 MEMBER SIEBER: An applicant needs this
2 kind of information, because he's running the same
3 schedule. He's submitting things. At the same time,
4 he's preparing the site, he's placing contracts to
5 order things, he's hiring laborers, craftsmen, you
6 know, buying fuel, all kinds of stuff. Without these
7 tools the applicant is sort of screwed.

8 CHAIRMAN WALLIS: Well, I can just see you
9 telling your ACRS member that he's got one hour to
10 review this SRP section.

11 MR. ABDEL-KHALIK: Well, sometimes that
12 may not be a bad thing.

13 (Laughter.)

14 It can be done. It would have to be a
15 really short one.

16 (Laughter.)

17 MR. COZENS: Let's skip to something very
18 close and near and dear to the ACRS members -- our
19 planning understanding for ACRS meetings. That's what
20 I'd like to do for pretty much the rest of this
21 presentation.

22 But let me start out by saying we met with
23 the ACRS staff approximately I think four times to
24 kind of get a handle on, how do we schedule the ACRS
25 meetings? What type of ACRS meetings are appropriate?

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1 And we got insights when we met with them and proposed
2 a lot of these details to them, and then we just
3 stacked them up based upon one review, and then
4 started looking at what happens when we integrate it.
5 That's what I'd like to talk about.

6 For instance, like in licensing,
7 traditionally you would have the draft, or in our
8 case, the SER with open items, and then you would have
9 the final document, and you would meet -- the
10 subcommittee and full committee would meet on the same
11 thing. That's the normal, traditional type of
12 structure that had been somewhat proposed, and that's
13 what we -- let me move this so I can see.

14 But the -- that was one of our starting
15 points. But we also realized in the discussion with
16 the ACRS staff that often the ACRS desires special
17 technical subcommittee sessions to drill down into a
18 particular technical issue. Don't know what all those
19 might be at this point, but we did take as a model the
20 ESBWR. I think currently there was a group of
21 approximately 15 technical sessions for the ESBWR that
22 has either been conducted or planned.

23 Well, not knowing any better, and not
24 having any other reason to decide that it would be
25 numerically much different, we would expect you

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1 probably to --

2 CHAIRMAN WALLIS: Do you know how many we
3 did have, say, as AP 600 or -- maybe AP 1000 was sort
4 of a followup. So may AP 600 is --

5 MR. COZENS: It's on that order. Maybe --

6 MEMBER POWERS: It's pretty close.

7 MEMBER SIEBER: That's a pretty good
8 number.

9 MEMBER POWERS: I've commented on the ESP,
10 if I understand it right, you're calculating a full
11 committee and a subcommittee for the draft SER and the
12 SER?

13 MR. COZENS: That's what we would suggest,
14 yes.

15 MEMBER POWERS: I don't think we'll
16 actually do that. I think it will be one and one.

17 MR. COZENS: We had some concern with
18 that, which we can talk a little bit about. If we get
19 -- let's just say the SER with open items I think is
20 -- it had been proposed that we not have meetings on
21 that. That could be a decision.

22 The concern we had was that if we wait
23 until the final supplement, if there are any issues
24 that surface, we're at the very tail end of our review
25 process that puts it -- quite frankly, puts the

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1 schedule in considerable jeopardy, whereas if we did
2 have such a meeting earlier on we may be able to
3 address the --

4 MEMBER POWERS: I'd just do them
5 diagonally. I'd use the subcommittee for the draft
6 SER, not bring it to the full committee until it --
7 the open items had been -- had been addressed.

8 MR. COZENS: I'm not certain I understood
9 what you said. The full committee for the DSER.

10 MEMBER POWERS: Yes. I mean, I -- quite
11 frankly, I am pleased enough with what the staff has
12 done with the ESPs that I think it's templated much
13 like the -- what we found for the early -- for the
14 extended license reviews, that we're reasonably
15 familiar with the format, content, and they've gone
16 very smoothly. I mean, we -- there's not one of them
17 we haven't found something.

18 MR. COZENS: You're referring to this
19 particular meeting here, I presume?

20 MEMBER POWERS: Yes. I think I would do
21 that one and then --

22 VICE CHAIRMAN SHACK: One SEP -- ESP left.

23 MEMBER POWERS: Well, presuming that there
24 are more of them, I mean, we know we have Vogtle
25 coming up. And maybe there will be another one after

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1 that, some others after that. I just comment -- I
2 mean, maybe you want to leave it on there just simply
3 for schedule conservatism. But I will --

4 MR. COZENS: I will talk a little bit
5 about the process. These are -- I'll call them for
6 the moment as if one was to receive application --
7 these would be placeholders we would be putting into
8 the schedule, because scheduling meetings are usually
9 more challenging than dropping a meeting.

10 MEMBER POWERS: Yes. I mean, I'd
11 understand that. I'd just comment that I think you
12 did a good -- overall did a terrific job on the ESPs
13 for a new -- new thing. And we're very comfortable
14 with it, so that's -- that schedule is very generous
15 for us. I'll put it that way.

16 MR. COZENS: Just mentioning the COL
17 reference and the COL subsequent -- you know, this is
18 the first time you'll see these particular designs, so
19 we would anticipate for a design center that the
20 reference -- you would definitely want a full
21 complement of meetings, possibly may even want a
22 couple focused technical meetings.

23 But realizing that each COL also has site-
24 specific issues, that you may want to have some
25 discussions on those, and -- so a couple of

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1 opportunities here.

2 Same concept for the COL with
3 subsequent --

4 CHAIRMAN WALLIS: Can you explain what
5 a --

6 MR. COZENS: -- do have site-specific
7 issues, those issues that we would have closed out in
8 the reference that are carried through, I would not
9 expect a lot of discussion on, whereas the -- for site
10 issues, if you wanted some discussion, you know, you
11 would have an opportunity to have that discussion at
12 that point.

13 CHAIRMAN WALLIS: But these are meetings.
14 But some of the -- the design certification is very
15 important. So I would think the full committee might
16 want to meet for half a day or something on that.

17 MR. COZENS: Yes, I --

18 CHAIRMAN WALLIS: Whereas, the COL
19 subsequent, maybe it's just a regular one hour or one
20 half an hour -- one and a half hours or something.

21 MR. COZENS: Haven't established the
22 durations that you may choose to meet on. But just
23 having said that, you know, this is the basic model
24 assumptions. Then, when you start stacking with this
25 set of model assumptions, and you go to the next

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1 slide --

2 CHAIRMAN WALLIS: And you're also talking
3 about meetings. A subcommittee meeting on AP 1000,
4 for instance, may be a meeting -- may have been a
5 meeting where we went to Westinghouse and we spent two
6 days there. That's one meeting with two days.
7 Whereas some of these full committee meetings on ESP
8 may be just two hours.

9 MR. COZENS: Yes, we do appreciate that.

10 CHAIRMAN WALLIS: A very, very different
11 amount of effort goes into them.

12 MR. COZENS: Yes, we do appreciate that.
13 It could vary in duration, and, again, that's a
14 decision that the ACRS members would want to probably
15 make, and we would need to support, of course.

16 But when we stack the meetings up with the
17 assumptions of the workload we have coming up, we come
18 in with these totals. And if we held to this modeling
19 of it, that would be about 126 meetings over a little
20 over a three-year period. Almost one a week.

21 But as you say, some of these meetings are
22 only an hour or two long. Some of these -- "sessions"
23 maybe is a better phrase -- could be conducted in one
24 day. Some, as you say, maybe multiple days. And yet
25 those are decisions yet to be made.

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1 And with the realization that as the
2 review evolves, the ACRS members may see something
3 they really want to focus on. We can't predict that
4 at this point. So we've kind of -- oh, this is -- let
5 me go on to the next couple of slides. Hold that
6 thought for a moment. Let me go through these other
7 slides first.

8 This is your -- we're on a timeline. If
9 the schedules were to be as we envisioned them right
10 now, nothing moves as far as we see, the schedule
11 moves according to plan, this is what we would predict
12 the meetings look like. And these are -- now, these
13 are 20 different forms of meetings, which match up
14 with each of the cells in the previous table, so these
15 are --

16 MEMBER ARMIJO: Are these the quarterly --

17 MR. COZENS: Those are months, in a given
18 month.

19 MEMBER ARMIJO: In a month you might have
20 13, 14 --

21 MR. COZENS: Yes.

22 MEMBER ARMIJO: And this --

23 MR. COZENS: A couple things here. This
24 -- the previous slide had precisely what type of
25 meeting was it. There's a variety of 20 different

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1 forms of meetings -- SER, open items for a COL,
2 reference of subsequent, and so on and so forth. So
3 I -- this one, although I apologize it -- I keep
4 thinking you should be able to read that, but it
5 doesn't look like you can read that one.

6 I broke this down into a little bit more
7 coarse granularity, where you have full committees for
8 the SER, whether they be SER with open items or
9 supplements, or you would have subcommittees on the
10 same thing for an SER type of document. Whereas the
11 yellow and the -- I guess that would be teal --

12 CHAIRMAN WALLIS: These are months? I'm
13 trying to figure out --

14 MR. COZENS: Yes.

15 CHAIRMAN WALLIS: -- the scale.

16 MR. COZENS: Months. Only every third
17 month is mentioned, but there's three months in
18 between the tick marks.

19 CHAIRMAN WALLIS: I see July. Thirteen
20 meetings in a month?

21 MR. COZENS: Yes.

22 MEMBER SIEBER: There you go.

23 CHAIRMAN WALLIS: With preparation?
24 That's impossible.

25 MEMBER POWERS: Well, Graham, also

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1 remember our idea that subcommittees -- we may compose
2 some smaller subcommittees of, say, five members, and
3 so, for example, you -- this group of 15 could form
4 three subcommittees. And that would so -- would knock
5 out several, so --

6 CHAIRMAN WALLIS: Members at that time to
7 figure it out.

8 MEMBER SIEBER: It's like the Pony
9 Express. You ride the horse until it drops, and then
10 you get another horse and keep on going.

11 (Laughter.)

12 MR. COZENS: This slide basically breaks
13 down -- it's whether you're full committee,
14 subcommittee, and you're working on SERs, which is
15 reviewing the documents, or it's a technical
16 subcommittee meeting, whether it be for the design
17 certification --

18 CHAIRMAN WALLIS: Didn't you try to move
19 this 13 and split it up among the months around it, or
20 something?

21 MR. COZENS: I'm going to talk to that in
22 the next slide. Okay?

23 MEMBER ARMIJO: Before you go on, just for
24 a sanity check, what is the maximum and average number
25 of ACRS meetings that we've been running the last year

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1 or so? With power uprates, early site -- not early
2 site but the license extension.

3 MEMBER SIEBER: Do you mean days?

4 MEMBER ARMIJO: I mean the number. The
5 same scale. You know, is it --

6 MEMBER SIEBER: Two or three.

7 MEMBER ARMIJO: I mean, 10 with
8 subcommittees? How many a month?

9 MEMBER SIEBER: Two or three a month.

10 MEMBER ARMIJO: It is? Two to three a
11 month.

12 MEMBER SIEBER: Or four maybe.

13 MR. SNODDERLEY: Sam, this is Mike
14 Snodderley. We try to anticipate that. You bring up
15 a key point, which is one of our concerns. We met
16 with Kurt and their contractors to talk about, what
17 are the risks associated with this schedule? In other
18 words, if things don't go wrong.

19 Basically, what we -- some of the stuff we
20 thought about, which was we have certain planning
21 assumptions in our budget based on -- to justify the
22 number of members and the number of resources. And I
23 can give you those exact details.

24 But just to give you an example, we assume
25 three to four major operating events per year. We

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1 assume six rulemakings a year. We assume those types
2 of things, and those are typical of what we have done
3 in the past. Okay? So that's built into our model,
4 but -- so, of course, if -- if significant -- if a lot
5 more rulemakings and the associated reg. guides and
6 guidance come along, or something like that, it
7 affects our model.

8 That's something we're going to be
9 tracking for you. But this -- that's in addition to
10 all those meetings. So you're absolutely right. But
11 let's also recall some of those -- some of those
12 meetings are only going to require an hour or two.
13 So, for example, you know, but --

14 MEMBER POWERS: Let me be very clear to
15 you, Mike, that very seldom does a meeting only
16 require an hour or two of a member's time. There's
17 about a 10-hour prep.

18 MR. SNODDERLEY: Yes, I -- Dana, I think
19 all I was trying to address was the idea that all of
20 those meetings are not equivalent, and it goes into
21 some would require a day or two days, some would
22 require an hour or two hours. You make a very good
23 point, though, that an hour meeting does not
24 correspond to an hour of the member's time. But --

25 CHAIRMAN WALLIS: But that 13 one is

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1 really critical. What is it? Seven full committee
2 meetings?

3 MEMBER SIEBER: Every meeting is --

4 MR. COZENS: If I might just explain this
5 table. These colors here -- the purple and I guess
6 we'll call that blue for lack of any art ability --
7 are full committee and subcommittee dealing with SERs,
8 and you can see here in this one month here, which
9 happens to be July, I think it's '09, it corresponds
10 to the onslaught of when we receive applications.
11 That would say there would be seven full committee
12 meetings and three subcommittee meetings dealing with
13 SERs.

14 CHAIRMAN WALLIS: And writing seven
15 letters on this -- these subjects alone in that
16 meeting?

17 MEMBER SIEBER: Yes. You have to do this
18 plus your other work.

19 MEMBER KRESS: That's true. That's all we
20 can do that month.

21 MR. COZENS: Now, these other meetings
22 here in the bright yellow, which would be
23 subcommittees for technical and deal with the
24 reference COL, and we put just -- in each reference we
25 arbitrarily chose two technical sessions on some topic

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1 that you might choose, and you may decide not to have
2 these meetings. But for planning purposes, we chose
3 -- that seemed reasonable and rational, but you may
4 want to drill down something in the COL of something
5 you've not seen before.

6 CHAIRMAN WALLIS: Isn't it unlikely that
7 all of these things will come in exactly on schedule?
8 Maybe we can spread things out a bit more.

9 MR. COZENS: My personal opinion -- this
10 is based on what we've assumed the arrival dates of
11 applications are, and that they are received
12 successfully. If you were to tell me six months from
13 now, do I expect this to look precisely like this, I
14 would say no.

15 CHAIRMAN WALLIS: We're meeting every
16 month of the year here?

17 MR. COZENS: I have not taken into account
18 the fact that the full committee does not meet in
19 August or January. I do understand that subcommittees
20 sometimes do meet those months. So -- but because of
21 the I'll call it uncertainty of precisely when these
22 meetings would fall, I didn't try to fix that issue.
23 But it does cause us some scheduling grief to have to
24 not meet there, but that may be the way life is.

25 The point is here is just to show with the

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1 type of assumptions we have coming in, what you -- we
2 anticipate from talking to staff we might wish to do,
3 that -- what we might see. And this might move
4 around, this peak may come down, or, in theory, I
5 guess it could go up, too. But hopefully not.

6 MR. TAPPERT: It'll come down. This is
7 just to give you a sense of what we're talking about
8 for the numbers of meetings. And if you just take
9 those assumptions on the previous thing and you apply
10 it to the schedules as we currently know them, it
11 would spit out this histogram.

12 MR. COZENS: Yes.

13 MR. TAPPERT: Now, we -- you know, Kurt is
14 going to talk about some rules of engagement and how
15 we are actually going to schedule these things, and
16 we'll try to work to manage those peaks to make sure
17 that it's something we can all support. But that's
18 just to give you a sense of the magnitude that we're
19 talking about, though.

20 MEMBER KRESS: I think the ACRS provides
21 most added value design certifications. And I think
22 that's where we'll spend a lot of our time. These
23 other things might go pretty fast, once we've
24 certified a design.

25 MEMBER SIEBER: We're required by staff to

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1 review applications.

2 MEMBER MAYNARD: If they were consistent
3 with their applications, then I think it will be a
4 real key point.

5 MEMBER KRESS: And I think they will be.

6 MEMBER MAYNARD: Yes, I do, too.

7 CHAIRMAN WALLIS: What is this business
8 about ACRS meetings part days? We meet from 8:30
9 until 7:00 or something. Those are part days?

10 MR. COZENS: How about on the topics of
11 interest -- on a topic of interest.

12 MEMBER SIEBER: It's a half day, yes.

13 CHAIRMAN WALLIS: That's a half day?

14 MEMBER SIEBER: Yes, 8:00 until 8:00 is a
15 half day.

16 VICE CHAIRMAN SHACK: It's just saying a
17 full committee meeting is typically only a part of a
18 day.

19 MR. COZENS: That's correct.

20 VICE CHAIRMAN SHACK: The full committee
21 meeting he's talking about.

22 MR. COZENS: On an application, an SER
23 application that you might be looking at, you don't --

24 CHAIRMAN WALLIS: But then we spend six
25 hours wrangling about the letter we're going to write

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1 on it. That's part of our meeting.

2 MR. COZENS: Yes.

3 CHAIRMAN WALLIS: That's not just -- it's
4 not just when we're here with the meeting. It's the
5 whole thing -- everything that goes with it.

6 MEMBER SIEBER: Some poor guy has got to
7 write it.

8 MR. COZENS: But I want to talk about --
9 we realize that upon receipt of an application we
10 cannot lock crisply into a schedule for when meetings
11 need to be held. But from a planning and resource
12 consideration, we need to make certain assumptions.
13 From our planning point of view, when we set up a
14 schedule and a review on the Gantt chart, load
15 resources, so knowing what we're going to need,
16 budget, etcetera, we anticipate using the table
17 assumptions that I showed previously.

18 However, I would -- we also believe that
19 if we have particularly subsequent COLs that are
20 moving together we would suggest that the ACRS
21 consider grouping those subsequent COLs. You've
22 already been through the reference COL, and all the
23 new issues that might surface would be anticipated
24 there, and it may be more efficient on your part --
25 and this is for your consideration -- to say, for

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1 instance, on the AP 1000, I think in October of 2007,
2 a year from now, we'll receive four applications. One
3 of them will be a reference, and three of them will be
4 subsequent, essentially on an identical schedule.

5 Those subsequent ones were already made
6 probably a major portion of the decisions in the
7 reference, and it's carried down through. We don't
8 envision that will be a large ticket item. It could
9 be, but we just don't envision it that way. But there
10 are site-specific things, so you could group these
11 meetings as a cluster, one meeting of an appropriate
12 duration to talk about all three of them.

13 That would diminish the number of what
14 I'll call ACRS sessions, whatever the duration is. So
15 we thought about that, and we actually factored that
16 into our counting as we went into there. I had
17 mentioned that previously.

18 MEMBER MAYNARD: I'm sorry. The graph
19 that you showed, that accounted for that, or --

20 MR. COZENS: Yes, it did. It removed
21 about six meetings as it turned out.

22 MEMBER MAYNARD: Okay. I was going to
23 offer that as a mechanism for lowering it now.

24 MEMBER ARMIJO: It is already in there.

25 MR. COZENS: We thought about that. It

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1 makes sense to us, but, again --

2 MEMBER SIEBER: Why not do one big meeting
3 and do them all?

4 (Laughter.)

5 MR. COZENS: But the fact of the matter
6 is, the ACRS does not schedule the meetings to 12
7 months out at earliest. You have the rolling -- I
8 understand you have a rolling 12-month schedule that
9 -- where you start populating the calendar with
10 proposed meetings.

11 We would propose to use the ACRS -- you
12 also have a list of potential meetings that are not
13 officially scheduled, that when you think you might
14 need them you put it on the list, and as it comes
15 along to the 12 months in advance you start populating
16 -- using that list with discussions among yourselves,
17 I guess with EDOs, you have discussions. You take
18 advantage of this process and use the process and the
19 plan together to solidify what the meeting schedules
20 would be.

21 So we would propose, you know, we'll go
22 ahead and plan and see where the meetings fit. Ask
23 you put on your early list of possible meetings these
24 meetings we think we may need, so as we start
25 populating the 12-month rolling schedule that we, as

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1 early as possible, solidify proposed dates, and also
2 being mindful that things do change.

3 If something needs to be changed, work
4 with you and the staff or the ACRS staff to solidify
5 as early as possible what the date will be, and, if it
6 needs to be changed, change it. Maybe it's not ready,
7 but do that well in advance, as far in advance as we
8 can do it, so we can start making certain we have the
9 resources necessary to support these meetings.

10 That we have the reviews completed in time
11 to support these meetings, and that we use the EDO
12 prioritization meetings that are conducted to work
13 with the ACRS staff and the members to finalize what
14 the schedule would be, on the order of 12 months out,
15 maybe a little less than that, but something on that
16 order to start getting these things solidified early,
17 so we can plan, because whereas we are doing reviews,
18 the ACRS meetings are -- the effort we have is on top
19 of the technical activities going on.

20 So we need to make certain that we're not
21 diverting too many resources away from the reviews to
22 keep the other activities going on. So we need to
23 plan early and make certain we've allotted sufficient
24 time for our efforts to prepare to provide you the
25 information in advance and make certain that it's

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1 going to be available, as well as keeping the review
2 itself going.

3 So, and as I said, as the world events
4 happen, make adjustments. But working with staff and
5 our members to solidify the schedule.

6 MR. SNODDERLEY: Kurt, this is Mike
7 Snodderley again. I'd like to take this opportunity
8 just to make three points to reinforce what you just
9 said there. The first one I'd like to make goes along
10 Dr. Armijo's concern about an overall integrated
11 schedule, and that's something that we did talk to the
12 staff about, but I think that's a very key point,
13 which is the Office of New Reactors has developed
14 these integrated schedules focused on new reactors,
15 which is their priority.

16 And what is missing is a true overall
17 integrated schedule that also reflects the other work
18 of the agency. And we touched on some of those that
19 -- you know, such as rulemakings and operating events.
20 So although we have budgeted for those, we have not
21 done this type of scheduling that I think is going to
22 be key, as we've all talked about, for this to be a
23 success.

24 So that's something that we're aware of
25 and we're thinking about it, and, as Kurt said, we're

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1 going to try to be working with the EDO's office and
2 our 12-month rolling calendar to try to schedule these
3 things out. But that is definitely a major concern
4 and a major challenge.

5 Now, before we get -- before we get maybe
6 too pessimistic or too scared -- because the purpose
7 of this meeting wasn't to try to scare everybody
8 straight here by looking at the -- you know, the
9 figure. Scared straight from a sense that we've been
10 operating at a certain work level, and it's going to
11 significantly increase.

12 MEMBER SIEBER: Quadruple.

13 MR. SNODDERLEY: Well, I don't know if
14 quadruple. The one thing that gives us hope -- and if
15 you remember when Luis Reyez was here -- well, it's
16 coming up on six months now, that the one thing we do
17 have going for us is that the license renewals and
18 power uprates will be tapering down at just about the
19 same time in 2008 when these things are taking up. So
20 that's one thing.

21 What did we learn, though, from those
22 reviews, the license renewal reviews and the power
23 uprate reviews? Well, one thing we learned that was
24 real successful with license renewal is that it really
25 worked best when we tried to do no more than one a

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1 month, and a subcommittee for one and a full committee
2 for another in each month. And that has been
3 something that has been a success.

4 Now, I think the problem there is, as
5 we've said, we've worked with Kurt, and when we plug
6 in what we typically use for reviewing the AP 1000 and
7 for reviewing the ESBWR, when we plug in what we think
8 we're going to need to do, that's reality, that's what
9 shows up, okay? And so we're not going to be able to
10 do that with license renewal.

11 But those kinds of lessons -- the lesson
12 learned is that when we try to spread these things
13 out, we have much more potential for success. So
14 that, again, that's something -- it's a challenge,
15 it's something we're thinking about. We're going to
16 try to do the best we can, as John Tappert said, but
17 right now these are the way these things are lining
18 up.

19 And the problem I think is because when
20 the -- the applications will not be staggered.
21 They're going to come in -- you know, they're coming
22 in at the same time. So this wave effect exists.
23 It's a reality, and it's -- and, again, it will be a
24 challenge.

25 The last thing I wanted to -- the last

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1 point I wanted to make is to also remember that some
2 dates are firmer than other dates. For example, DSERs
3 with open items and final evaluations for COLs, and
4 those end dates -- those are hard, and they have to be
5 met.

6 Now, what we see when we look at the
7 models, though, is there is more flexibility for
8 moving subcommittee meetings around. So, in other
9 words, the thermal hydraulic subcommittee just has to
10 review a certain code or a certain -- or the materials
11 committee. That material, though, is submitted and
12 will be being reviewed by the staff over a six- to 12-
13 month period.

14 So the point is is that those -- we have
15 a little more flexibility to move those subcommittee
16 meetings around within a three- or four-month window,
17 as opposed to the final reviews, which are more hard-
18 wired. So that's something else to keep in mind,
19 so --

20 CHAIRMAN WALLIS: But one problem with
21 that committee is that it sometimes comes up with the
22 conclusion that the work is inadequate.

23 MR. SNODDERLEY: And that's why it's also
24 -- that's why it's so important to make sure when we
25 schedule those technical subcommittee meetings six

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1 months before that hard -- before that hard-wire
2 decision is required, so if issues are raised there is
3 sufficient time to resolve this. And that's something
4 that we're also considering. And that's also
5 something that we differentiate between a subcommittee
6 meeting and a final review meeting where typically
7 we're just resolving the last five or open items.

8 So, you know, typically those full
9 committee meetings, remember at the end, was we've
10 identified some issues, we've got it down to, you
11 know, remember it was typically eight to ten open
12 items, and then it was four to five, and typically we
13 were done.

14 So, but these are -- again, these are the
15 planning assumptions, and I think one of the
16 objectives I had for this meeting is I just want you
17 to understand what -- that the staff is developing
18 models, planning models, and what assumptions are
19 being assumed for the ACRS. And we appreciate your
20 feedback and your thoughts.

21 I've already picked up a lot of things and
22 some notes that I'm going to be taking and working
23 with Kurt and Rich and John with their staff and
24 trying to improve these models, because I do think
25 that this is -- this is going to be one of the only

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1 ways that we'll be able to accomplish this is with
2 early planning and understanding of what's coming.
3 Otherwise, I -- I don't believe we'll be able to keep
4 up.

5 CHAIRMAN WALLIS: Very useful. I have a
6 few comments. One thing you said, that we might be
7 scared. But ACRS never gets scared.

8 (Laughter.)

9 And we try not to scare anybody else.

10 MEMBER KRESS: They have a master -- they
11 have a computerized program plan, which is something
12 like Primavera. Are you planning on getting something
13 like that, just specific for ACRS?

14 MR. SNODDERLEY: No. Right now my plan
15 would be to work with the staff and use their tool, as
16 opposed to trying to maintain two tools or two
17 databases.

18 MEMBER KRESS: Yes, but a lot of the times
19 those things have specific individual names on them,
20 and --

21 MEMBER SIEBER: You have to have --

22 MEMBER KRESS: Yes. I mean, you factor it
23 in along with the other things that we do. You know,
24 it might be worth thinking about.

25 MEMBER POWERS: There is not going to be

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1 any staff available to submit anything different,
2 so --

3 MR. SNODDERLEY: Yes. I think, Tom, to --
4 I definitely will consider that, but to just tell you
5 what my -- what I've found, we've had a lot more -- in
6 planning with the EDO's office and trying to work out
7 our schedules for the next three and six months, we
8 were -- the EDO was maintaining a database for
9 scheduling, and we were maintaining a database for
10 scheduling. We meet every month to reconcile our
11 databases, and recently we found, why are we doing
12 this? Why are we maintaining two databases, you have
13 ours, we have ours, and we were all taking all these
14 resources to maintain these two databases? Why don't
15 we just maintain one?

16 Now, it turns out we've decided to
17 maintain the ACRS database, because it was --
18 whatever, that was the decision that was made. You
19 decide one is better than the other, and you maintain
20 it. Right now, my feeling is that the staff has a --
21 that the problem is not the planning tool. I think
22 the tool is great. I think the problem is -- and let
23 me say, Graham, the ACRS doesn't get scared. But the
24 ACRS staff are -- I get a little scared sometimes.
25 So --

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1 MEMBER KRESS: But their program will have
2 ACRS meetings, subcommittee, full committee. Your
3 program ought to have David Fisher supports the --

4 MR. SNODDERLEY: Oh, of course. And in
5 our 12-month rolling calendar, remember, this is going
6 to feed into our 12-month rolling calendar that will
7 have that -- that level of information, assigned staff
8 member, lead staff member, lead member.

9 MEMBER KRESS: Okay.

10 MR. SNODDERLEY: What it is -- what we're
11 being asked to review and the date. So, no, you --
12 I'm sorry, let's clarify that. Our scheduling system
13 is not going to change. This system will feed into
14 our system, because in the end what we're doing is
15 we're still going to be meeting every month with the
16 EDO to coordinate what it is they need from us that
17 month.

18 And all we're saying is that -- and make
19 -- our next step is really to coordinate more with the
20 EDO. We've been coordinating with each other, and it
21 may -- and the EDO probably doesn't realize yet that,
22 hey, in July 2008, right now, which is a long way off,
23 but it does appear, and there are certain areas where
24 the ACRS may not have much time to review anything
25 else but these COLs and these -- and these design

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1 certification meetings. And we'll have to plan, or
2 we'll have to do something. But that's kind of where
3 we are.

4 MEMBER MAYNARD: The ACRS current
5 scheduling tool may work for the staff, but for me
6 individually it's not quite visible enough for me. I
7 get written documents every once in a while, but it
8 would be nice to see that integrated schedule.

9 MEMBER KRESS: See where you specifically
10 fit in there.

11 MEMBER MAYNARD: But we can talk about
12 that later.

13 MR. SNODDERLEY: Yes.

14 MEMBER MAYNARD: I take this presentation
15 as a challenge to us that we've got additional
16 workload coming up. We need to take a look at
17 prioritization and how we handle things and a number
18 of things, because one of the things we have to be
19 careful of I think is to not provide inadequate
20 reviews on important things.

21 So I think prioritization -- we may find
22 some things that we -- really aren't adding that much
23 value and we don't need the review, and trade that
24 time to be able to put it on things that we could add
25 value and really do a better job.

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1 MR. SNODDERLEY: You're absolutely right,
2 Otto, but you have to also recall we -- in our
3 planning we've been doing that. We've been
4 distinguishing between those things which were
5 statutorily required to review and those things when
6 we -- that we can possibly give up. And,
7 unfortunately, even taking everything off of our plate
8 that we just do because we're not required, but even
9 with the statutory requirements and this, it's still
10 a challenge.

11 The other thing is what -- we can start in
12 the P&L showing you the 12-month rolling calendar, but
13 what we typically do is we -- your anticipated
14 workload, the first thing we always go over in the
15 P&P, which is the next three months. That's really
16 where -- that has been our planning tool and our
17 communication tool to you, because we want -- we're
18 focused mostly -- we want you to focus really on the
19 next three months, because that's what's the most
20 important. The next thing, you know --

21 And also, I think another thing that's
22 valuable that we've had in the past is the yearly
23 retreats where we talk about more long-term planning
24 and what's coming down the pike. But, clearly, we --
25 I'll take that as an action item and we'll share the

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1 12-month rolling calendar with you, so you can get a
2 feeling for what's coming up in the next 12 months.

3 CHAIRMAN WALLIS: If you take a very high-
4 level view, you get what you pay for. And if the
5 staff takes 20,000 hours to review some document, and
6 we are only allowed 50 hours of ACRS time, you'll get
7 50 hours of work. If you give us 200 hours, you'll
8 get a 200-hour job.

9 So, you know, at a high level, what we're
10 able to do is going to be related to the schedule. I
11 just -- you know, if you make it too tight, then the
12 -- our amount we can contribute may just have to be
13 less.

14 MR. COZENS: Let me just go over my
15 conclusions here, kind of wrapping up, see if there's
16 any additional questions.

17 Our new plant licensing plan, our program
18 plan, is heavily based upon stakeholder input. This
19 is a living document. To do it once and leave it on
20 the shelf, we might as well never have done it. This
21 is something that not only for our planning, but as it
22 relates directly to ACRS, it must be constantly
23 monitored and maintained to assure that it represents
24 the reality of where we are and where we're going.

25 We have tried to integrate all review

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1 activities, whether it be for the technical review
2 staff, OGC, down to our technical editors, and making
3 certain we know what resources we need, when we need,
4 how many hours do we need from them, and then if the
5 reality of the reviews changed, that it's not
6 sufficient, either too many hours or too few, make
7 adjustments, either specifically on an application or
8 generically across the fleet of applications.

9 This tool is a tool, but it will be a very
10 central tool to NRO managing its review efforts.
11 You've noticed the one thing I have not discussed here
12 today at all is the content of the reviews. That is
13 managed under other activities. This is just the
14 steps that we go through. So you put the content of
15 the SRP, the reg. guides, the DG-1145 all together, to
16 go along with the schedule, that makes a full suite of
17 activities and understandings of what staff's
18 expectations are.

19 As far as the specific ACRS meetings,
20 we're trying to support the legislative mandates that
21 exist with regards to new reactors. This is one
22 particular case we're obligated to come to you and get
23 your review and feedback. This is a significant
24 workload, as I think we've all realized looking at
25 what's in front of us. But we think it is manageable

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1 with a little bit of creativeness and maybe a little
2 bit of shifting here and there. We'll work our way
3 through it.

4 CHAIRMAN WALLIS: Ours is very much less,
5 if you guys come very well prepared.

6 MR. COZENS: Always true. Cannot argue
7 that point.

8 But as we go through this, we also may
9 have lessons learned that we may need to modify our --
10 how we work with the staff, with the ACRS staff, as
11 our experience is collectively gained. And we -- the
12 real message here is it's not where are these meetings
13 to date, that we need to use the process that exists
14 today, that ACRS used to schedule its meetings and the
15 topics of its meetings.

16 And we've brought in fully -- working
17 fully with the ACRS staff and the members to exercise
18 that existing process to find the best fit that will
19 work for everybody.

20 With that, that concludes my prepared
21 remarks. And if there's any additional questions, I'd
22 be happy to answer them.

23 MEMBER KRESS: I think we are probably
24 through. You answered most of our questions as we
25 went through. So I'll turn it back to you.

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1 CHAIRMAN WALLIS: Well, I'd like to thank
2 you. I think it's very useful.

3 MEMBER KRESS: Yes, extremely.

4 CHAIRMAN WALLIS: Very important stuff.
5 We'll have to see how it works out.

6 MR. COZENS: It'll be fun.

7 MEMBER KRESS: We're here to help.

8 (Laughter.)

9 MR. COZENS: Thank you.

10 CHAIRMAN WALLIS: Who are we helping? is
11 the question. I mean, are we helping -- are we
12 helping the NRC?

13 Well, we have -- we're going to take a
14 break. The next item on the agenda is the draft
15 report on the quality assessment of selected NRC
16 research projects. We do have a draft report. I'm
17 just wondering if it's going to take us an hour and a
18 half to review it.

19 MEMBER POWERS: Up to the discretion of
20 the members, of course, but my own feeling is that
21 we've gone over it -- Hossain has done an excellent
22 job of excerpting out and summarizing the comments, so
23 it's merely a matter of a transmittal letter and a
24 request for another batch.

25 CHAIRMAN WALLIS: I looked it over. The

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1 only comment I had was that maybe we said too much.
2 That was all. That was the --

3 MEMBER POWERS: I spoke to the project --
4 both project managers, and they wanted more.

5 CHAIRMAN WALLIS: They wanted more, okay.
6 So that's about right. I would think that if the
7 people who are involved have read it, but I've read my
8 -- I don't really have much to say, just to go ahead
9 and do it.

10 MEMBER POWERS: Yes. That's my feeling
11 about the subject as well, that, once again, Dr.
12 Hossain has just done an excellent job summarizing the
13 cat scratchings that we provided him, and --

14 CHAIRMAN WALLIS: So we will --

15 MEMBER POWERS: On the other hand, I also
16 comment that I really found the -- this particular set
17 there was -- of reviews there was more unanimity among
18 the reviewers. And I know they were doing their
19 voting independently, but there was a great deal of
20 unanimity and evaluation in these things, what not.

21 I will also comment that in speaking to
22 the NRC program managers they have internalized our
23 scoring system. Okay? I mean, they understand our
24 scoring system. For instance, when I told them, well,
25 they're coming in, you know, five-ish, six-ish, and

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1 they go, "Well, that's good on your system." I mean,
2 they understood our system. And I thought -- I was
3 very happy with that.

4 What we need, in thinking about these
5 things, is to think about what moves you up and down
6 out of that kind of middle ground sort of thing. I
7 mean, what would somebody have to do to get a nine?
8 What would somebody have to do to get a three? Well,
9 we've seen a three, so -- so what does it take to get
10 a two? Okay?

11 CHAIRMAN WALLIS: Okay. So we'll -- we're
12 going to take a break. We don't need the report --
13 the Court Reporter after this for the rest of the day.
14 We'll see you in the morning. We'll take a break
15 until I think about quarter to 3:00. And those of you
16 who haven't looked at this draft report will have a
17 chance to look at it perhaps in the break.

18 MEMBER ARMIJO: Not the letter, just
19 the --

20 CHAIRMAN WALLIS: Well, the letter is sort
21 of straightforward I think.

22 (Whereupon, at 2:28 p.m., the proceedings
23 the foregoing matter went off the
24 record.)

25

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

536th Meeting

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.

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WASHINGTON, D.C. 20005-3701

New Reactor Planning Activities

ACRS Meeting

Presented by:
Richard Barrett
Kurt Cozens

October 4, 2006

Agenda

- ◆ Business Process Integration Activities

- ◆ New Plant Licensing Plan
 - Purpose and Scope
 - Program Plan Document
 - Scheduling Activities
 - Anticipated ACRS Meetings

Business Process Integration Activities

New Reactor Program Business Process Integration Activities:

- ◆ Facilitate communication among key Offices
- ◆ Address issues at a high level
- ◆ Create inter-office working groups to resolve specific issues
- ◆ Identify issues requiring Sr. Management attention
- ◆ Utilize the Master Integrated Schedule as a communication and coordination tool

New Plant Licensing Plan

Purpose and Scope

- ◆ Develop the schedules, IT environment, and planning document (Integrated Licensing Plan) for NRO's expected work scope
- ◆ Expected workscope: ~26 licensing reviews
 - Design certifications - 3
 - Early site permits - 4
 - Combined operating licenses - 19

Scheduling Process

- ◆ Developed resource-loaded schedules (Gantt Charts) for COLs, DCs, and ESPs
 - Schedule and resource templates
 - ◆ Basic building blocks
 - Integrated (~26) licensing review Gantt Chart
 - ◆ Building blocks used
 - Make adjustments as necessary

Gantt Charts

- ◆ Integrated licensing review Gantt Chart
 - Based on stakeholder inputs
 - ~80,000 task line items
 - ◆ COL and DC Gantt Chart template ~3500 task line items
 - ◆ ESP Gantt Chart template ~700 task line items
- ◆ Resource loaded
 - Skill sets defined for each SRP section
- ◆ Created in MS Project Server Enterprise environment
 - Status maintained via NRC intranet
 - Resource utilization key insight for management of reviews

Example of Schedule Model

The screenshot displays a complex project schedule model. It features a grid with columns for task names, start and end dates, duration, and resource allocation. The tasks are organized into hierarchical levels, with some tasks expanded to show sub-tasks. The interface includes various toolbars and menu options, typical of a project management software like Primavera.

Modeled ACRS Meetings

Application Type	Document Type	Anticipated ACRS Meetings* Type and Number**	
		Full Committee	Subcommittee
Design Certification	SER with O/I	1	1
	SER Supplement	1	1
	Technical Issues	-	Up to 15
COL - Reference	SER with O/I	1	1
	SER Supplement	1	1
	Technical Issues	-	Up to 2
COL - Subsequent	SER with O/I	1	1
	SER Supplement	1	1
ESP	DSER	1	1
	SER	1	1

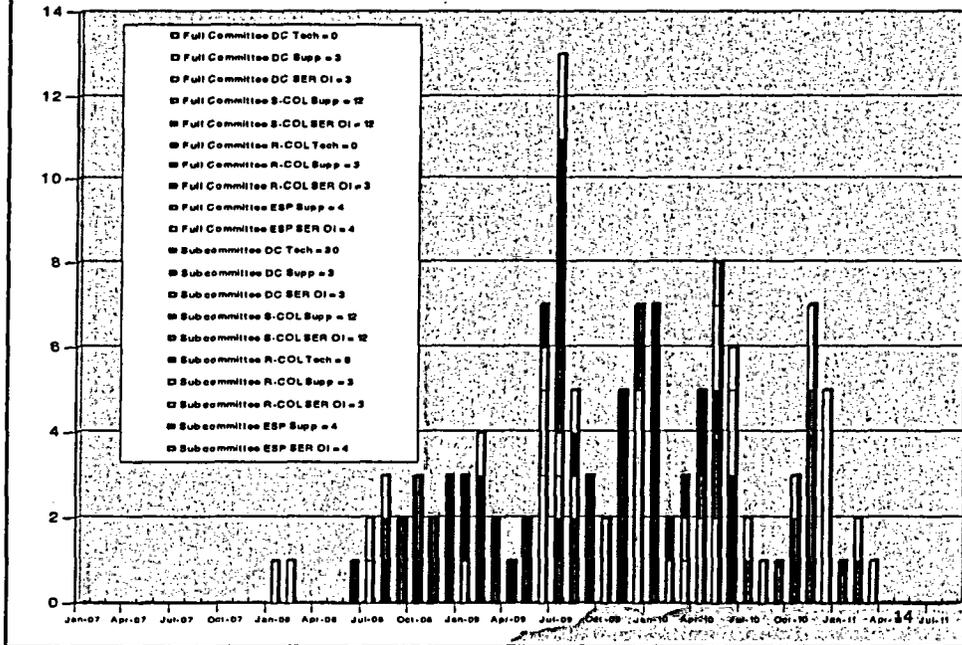
* The ACRS will determine the number and scope of meetings to be conducted
 ** Number of meetings assumed for planning

Total Anticipated Meetings

Application Type	Document Type	Anticipated ACRS Meetings Type and Number	
		Full Committee	Subcommittee
Design Certification	SER with O/I	3	3
	SER Supplement	3	3
	Technical Issues	-	30*
COL - Reference	SER with O/I	4	4
	SER Supplement	4	4
	Technical Issues	-	8*
COL - Subsequent	SER with O/I	12	12
	SER Supplement	12	12
ESP	DSER	4	4
	SER	4	4

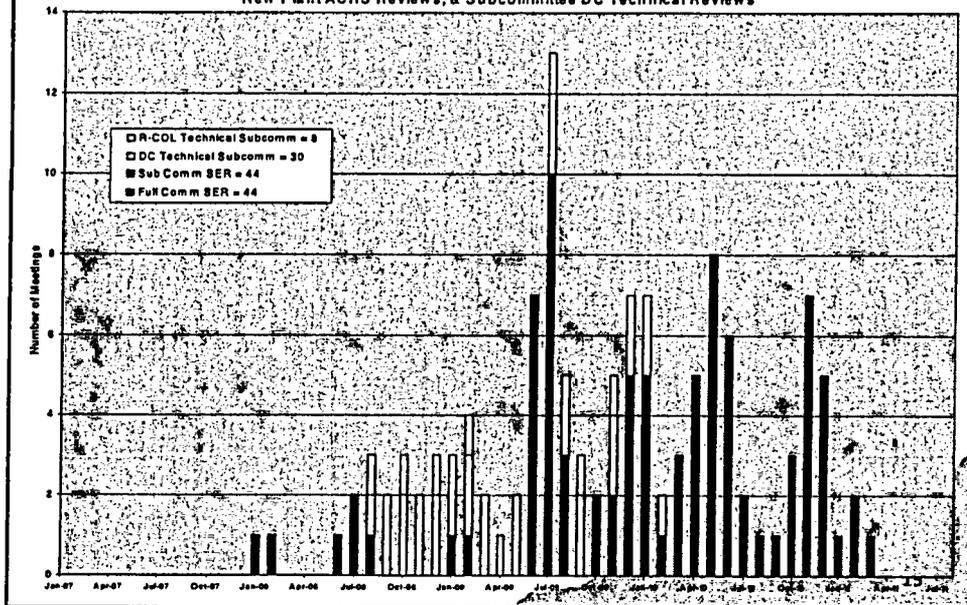
* The ACRS will determine the num

Total Anticipated Meetings



Total Anticipated Meetings

New Plant ACRS Reviews, & Subcommittee DC Technical Reviews

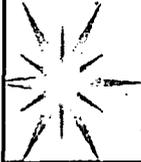


Scheduling of ACRS Meetings

- ◆ Planning
 - Use assumed type and numbers of ACRS meetings
 - ◆ Assumes that most ACRS meetings are part-days
 - Group S-COL meetings when possible
- ◆ Scheduling Process
 - ACRS potential meeting list
 - ◆ Populate when application received
 - ACRS 12-month rolling schedule
 - ◆ Establish schedule and scope
 - Based on nominal review schedule and ACRS topics of interest
 - EDO prioritization meetings
 - ◆ Adjust working with ACRS staff
 - Based on ACRS or staff needs

Conclusions

- ◆ New plant licensing plan
 - Based on stakeholder input
 - Living document – changed based on review needs
 - Integrates all review activities
 - Key tool for NRO management approach
- ◆ ACRS meetings
 - Supports ACRS legislative mandate
 - Significant workload, but manageable
 - May be modified as experience is gained
 - Scheduled using existing ACRS process



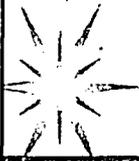
Standard Review Plan and Regulatory Guides Update in Support of New Reactor Licensing

October 4, 2006
Stephen Koenick, NRR
Stephen O'Connor, RES



Objective

- Purpose
 - Provide standard review plan (SRP) and regulatory guides (RGs) update plans and status
- Outcome
 - ACRS endorse review plans and develop waiver letters as appropriate



Agenda

- Background
- Proposed scope of ACRS review
- Plans for specific reviews
 - SRP
 - RGs

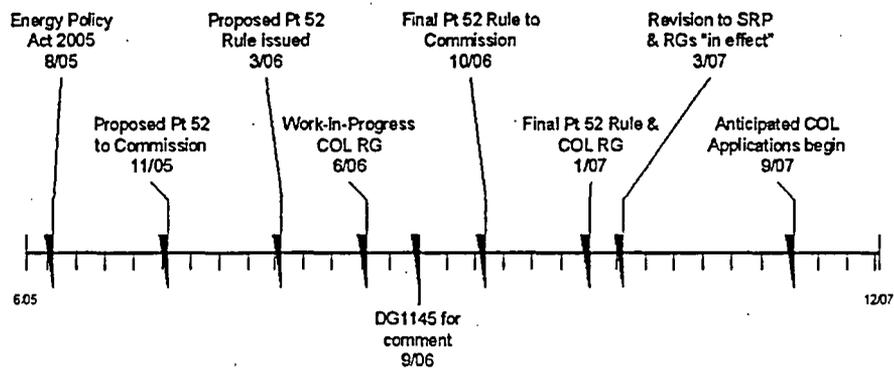
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Background

New Reactor Licensing Infrastructure Timeline



October 4, 2006

4

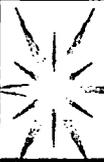


Background, continued

- Up to date infrastructure necessary to promote efficiency and effectiveness of the review while providing for regulatory stability
- 10 CFR 50.34(h), *“Conformance with the Standard Review Plan (SRP)” Applications shall include an evaluation of the facility against the SRP revision in effect six months prior to the docket date of the application.*
- SRP is not a substitute for the regulations, and compliance is not a requirement.

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5



Background, continued

- Accelerated schedule for revision to the SRP and referenced RGs by March 2007
- Many instances of RGs referenced as SRP acceptance criteria

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6



Proposed Scope of ACRS Review

- Staff recognized need to facilitate ACRS review of significant technical changes introduced in revisions
 - Plans for SRP provided September 5, 2006 (ML062430334)
 - Plans for RGs provided August 24, 2006 (ML062360563)

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7



SRP Process

- Preliminary revisions to be made publicly available following review and approval of technical and administrative aspects of the update
- Formal issuance scheduled for end of March 2007, following reconciliation of Part 52 rulemaking and comments received on concurrent regulatory guide revisions including DG-1145.

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8



SRP Process (continued)

- Most of SRP revision reflects current practice and does not introduce new staff positions
- 24 SRP sections identified in the September 5th letter for which ACRS may be interested
 - 10 sections related to RGs being updated
 - 14 sections are new or contain new staff positions
- Staff working with ACRS staff to identify additional sections of interest to the ACRS

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9



SRP Process (continued)

- Certain SRP sections will not be technically complete until January 2007
- Staff will provide these sections to ACRS when available
- Staff will issue final SRP sections in March.
- Sections will be available for public comment after issuance.
- Comment resolution (including ACRS identified issues) may establish a basis for alternatives to the SRP acceptance criteria.

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10



RG Update Program

- Over 450 Regulatory Guides
- 63 High Priority RGs to support new reactor licensing
 - 31 planned for revision by March 2007
 - 28 not needed to be updated by March 2007
 - 4 without sufficient technical basis to support development by March 2007
- Remainder of RGs are planned to be addressed over the next three years

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11



RG Update Process

- Expedited RG development process
 - Concurrent offices reviews
 - Concurrent ACRS/public review
 - Webpage with status
 - Generic Federal Register Notice
 - 45-Day public comment period
 - Public workshop

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12



RG Update – ACRS Review

- Provided 26 RGs for consideration
- Requested waiver of reviews on 14 RGs
 - Minor and editorial changes
- Review of remaining 12 concurrent with public comment period
 - October - December Committee meetings
 - Sub-Committee meetings, as necessary
 - February Committee meeting, as necessary

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13



RG Update Status

- 3 RGs published
- 2 RGs in public comment period
- 4 RGs completed public comment period
- 22 RGs will be published for public comment (October – November)

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14



Regulatory Guide 1.7 Standard Review Plan 6.2.5

Combustible Gas Control In Containment

**ACRS Full Committee
October 4, 2006**

**James Pulsipher
Division of Safety Systems
Office of Nuclear Regulatory Regulation
US Nuclear Regulatory Commission**

Briefing Objectives

- Recap of 2003 revision of 10 CFR 50.44
- Discuss the draft final revisions of RG 1.7 and SRP 6.2.5
- Request approval of the revisions

Background

- Staff met with ACRS on April 10, 2003, to discuss the final risk-informed modifications to 10 CFR 50.44, and the final regulatory guide, SRP, and technical specifications
- ACRS letter dated April 21, 2003, recommended approval of the rule, but did not specifically mention RG or SRP

Background (cont.)

- SECY-03-0127 (July 24, 2003) transmitted the final rule to the Commission; Commission SRM, dated August 28, 2003, approved the final rule
- Final rule published September 16, 2003; became effective October 16, 2003

Summary of §50.44 Requirements

Divided into 3 main sections

1. Currently operating plants
2. Future plants which are like current plants
3. Future plants which are not like current plants (for example, pebble bed reactor)

Summary of §50.44 Requirements (cont.)

For Currently Licensed and Future Reactor Licensees:

- Eliminated the design basis accident as a source of significant combustible gas
- Eliminated the need for recombiners and/or purge/repressurization systems
- Eliminated the need for oxygen and hydrogen monitors and other combustible gas control systems to be safety grade
- Applicability is focused on containment type rather than fuel/cladding type

Summary of §50.44 Requirements (cont.)

For Future Reactor Licensees:

- Consolidated combustible gas control regulation into a single part of the CFR

Conforming Changes to Related Regulations:

- §50.34(a)(4) revised to ensure that the need for high point vents is addressed in applicant's PSAR
- §50.34(g) re-designated as (h) and new (g) added to ensure that all new applicants include analyses required by §50.44 in their applications
- §50.46: Relocated requirements for high point reactor coolant system vents to §50.46a
- §52.47: Eliminated reference to combustible gas control requirements in §50.34(f)

Regulatory Guide 1.7, Revision 3

- Very different from Revision 2; however, virtually identical to version in SECY-03-0127
- Provides detailed guidance on implementing rule
- Some of its provisions come from the old §50.44
Example: Containment structural integrity, from old §50.44(c)(3)(iv)(B)
- Regulatory Positions:
 1. Combustible Gas Control Systems
 2. Oxygen and Hydrogen Monitors
 3. Atmosphere Mixing Systems
 4. Hydrogen Gas Production
 5. Containment Structural Integrity

Regulatory Guide 1.7, Revision 3 (cont.)

- The only non-editorial change from SECY-03-0127 is a clarifying footnote in Regulatory Position 2
 - Added in response to post-rule-revision comment from Nuclear Utility Group on Equipment Qualification
 - Clarifies that environmental equipment qualification (per §50.49) of oxygen monitors is not required by §50.44, but is sufficient

Standard Review Plan 6.2.5, Revision 3

- Addresses only future plants which are like current plants, because:
 - New SRP revision not applicable to current plants
 - Future “non-LWR” plants are too different to easily include and license applications are not currently anticipated
 - Both are referred to guidance in Regulatory Guide 1.7
- No technical changes from SECY version; only editorial, and to conform to LIC-200 format and content
- Technical provisions of SRP are like RG, with the addition of typical guidance to staff reviewer on how to perform review