

Official Transcript of Proceedings

NUCLEAR REGULATORY COMMISSION

Title: Advisory Committee on Reactor Safeguards
Design Center Licensing Subcommittee

Docket Number: (n/a)

Location: teleconference

Date: Thursday, January 20, 2022

Work Order No.: NRC-1814

Pages 1-167

NEAL R. GROSS AND CO., INC.
Court Reporters and Transcribers
1716 14th Street, N.W.
Washington, D.C. 20009
(202) 234-4433

DISCLAIMER

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

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

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

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS

1323 RHODE ISLAND AVE., N.W.

WASHINGTON, D.C. 20005-3701

(202) 234-4433

www.nealrgross.com

1 UNITED STATES OF AMERICA

2 NUCLEAR REGULATORY COMMISSION

3 + + + + +

4 ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

5 (ACRS)

6 + + + + +

7 DESIGN CENTER LICENSING SUBCOMMITTEE

8 + + + + +

9 THURSDAY

10 JANUARY 20, 2022

11 + + + + +

12 The Subcommittee met via Video
13 Teleconference, at 2:00 p.m. EST, Joy Rempe, Chair,
14 presiding.

15 COMMITTEE MEMBERS:

16 JOY L. REMPE, Member

17 RONALD G. BALLINGER, Member

18 VICKI BIER, Member

19 CHARLES H. BROWN, JR. Member

20 VESNA B. DIMITRIJEVIC, Member

21 GREG HALNON, Member

22 WALTER KIRCHNER, Member

23 JOSE MARCH-LEUBA, Chair

24 DAVID PETTI, Member

25 MATTHEW SUNSERI, Member

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

ACRS CONSULTANT:

DENNIS BLEY

STEPHEN SCHULTZ

DESIGNATED FEDERAL OFFICIAL:

MICHAEL SNODDERLY

ALSO PRESENT:

BENJAMIN BEASLEY, NRR

AMY CUBBAGE, NRR

MICHAEL DUDEK, NRR

CAROLYN LAURON, NRR

SCOTT MOORE, Executive Director, ACRS

MOHAMED SHAMS, NRR

BRIAN SMITH, NSIR

ROBERT TAYLOR, NRR

CONTENTS

	<u>Page</u>
I. Opening Remarks	
Joy Rempe	4
II. Staff Presentation on New and Advanced	
Reactor Licensing Processes	10
III. Break	87
IV. Staff Presentation on New and Advanced	
Reactor Licensing Processes (Continued) . .	88
V. Opportunity for Public Comment	161
VI. Member Discussion	163
Adjourned	167

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

2:00 p.m.

CHAIR REMPE: So good afternoon, this meeting will now come to order. This is the meeting of the Advisory Committee on Reactor Safeguards, Design Center Licensing Subcommittee.

I'm Joy Rempe, the lead for this meeting. Members in attendance today include Ron Ballinger, Vicki Bier, Charles Brown, Vesna Dimitrijevic, Greg Halnon, Walt Kirchner, Jose March-Leuba, Dave Petti and Matt Sunseri. We also have our consultants, Dennis Bley and Steven Schultz in attendance. Mike Snodderly is the designated federal official for this meeting.

Today the Subcommittee will discuss new and advance reactor licensing processes with the NRC Staff. During this meeting, Staff will present their proposed approach for ACRS participation in the review of the Kairos licensing application for the Hermes.

However, I'd like to ask my colleagues today to also consider how this information might interact with other ongoing Part 53 and Part 52 alignment and lessons learned subcommittee topics that we've been, or will soon be discussing.

At the end of their presentation, the

1 Staff will provide an overview of interim staff
2 guidance they recently issued for reviewing
3 construction permit applications.

4 During our February full committee
5 planning and procedures session, ACRS will discuss
6 this ISG further and determine any future actions.

7 The ACRS was established by statute and is
8 discovered by the FACA, Federal Advisory Committee
9 Act. The NRC implements FACA in accordance with its
10 regulations found in Title 10 of the Code of
11 Regulations, Part 7.

12 The Committee only speaks through its
13 published letter reports. And we do hold meetings to
14 gather information and perform proprietary work that
15 will support our deliberations in future committee
16 meetings.

17 The rules for participation in this
18 meeting were announced in the federal register on June
19 13th, 2019.

20 The ACRS section of the U.S. public
21 website provides our charter, bylaws, agendas, letter
22 reports and full transcripts of all full and
23 subcommittee meetings. And including the slides that
24 are presented therein. And the agenda for this
25 meeting was posted there.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 A phone bridge line has been opened to
2 allow members of the public to listen in on the
3 presentations and committee discussion. As stated in
4 the federal register notice, and in the public meeting
5 notice that was posted on the website, members of the
6 public who desire to provide written, or oral input to
7 this subcommittee meeting, may do so and should have
8 contact the designated federal official five days
9 prior to the meeting.

10 It's my understanding that no one has
11 requested such time to provide public comments. But
12 we'll still provide an opportunity at the end of this
13 meeting. And written comments can be forwarded to
14 Mike Snodderly, the designated federal official.

15 A transcript of the meeting is being kept
16 and will be made available, as stated in the federal
17 register notice.

18 Due to the COVID pandemic, today's meeting
19 is being held over Microsoft Teams for ACRS and NRC
20 Staff participation. And there is also this bridge
21 line allowing participation by the public.

22 When it does come time, if a member of the
23 public does want to participate by providing public
24 comments, they'll have to remember to press *6,
25 identify themselves and speak with sufficient clarity

1 and volume so that they may be readily heard. And
2 when you're not speaking, I request that participants
3 mute your computer microphone or your phone.

4 And I emphasize, this is especially
5 important at this time when we're having to perform
6 these Teams meetings. Because if there is too much
7 noise on the public bridge line we'll have to
8 disconnect it.

9 And before I start to proceed with the
10 meeting, I see that Dennis Bley has his hand up.
11 Dennis, did you have a question or a comment?

12 MR. BLEY: I do have a comment and a
13 question. I guess for some reason I had thought this
14 is going to be a closed meeting, but it's clearly an
15 open meeting.

16 Is the ISG, a fait accompli, has it been
17 issued? That's the first question.

18 Then the second one is, is the Committee
19 considering writing a letter on this, or will you talk
20 about that at the end?

21 CHAIR REMPE: So, yes. I'll let Mike add
22 to it, but yes, the ISG has been issued for 45 days
23 public comment, is my understanding.

24 And I am very interested in the answer to
25 your second question because it would be good to

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 understand what the Staff's vision is for this
2 discussion.

3 MR. SNODDERLY: So --

4 CHAIR REMPE: Do I need to bring it over
5 to you, rather than Brian Smith --

6 MEMBER BROWN: So, Joy, before you do
7 that, is this for Kairos only?

8 CHAIR REMPE: No, that's my point. Even
9 though the slides talk about Kairos, think about the
10 broader picture, okay?

11 MEMBER BROWN: No. No, no, no. Is this
12 presentation related to Kairos?

13 CHAIR REMPE: No. They have some slides
14 that talk about the proposed approach for reviewing
15 Kairos, Charlie.

16 However, I'm asking you and the other
17 colleagues on ASCR to think about the bigger picture.
18 Okay?

19 MEMBER BROWN: Okay. Well, then this
20 presentation is how the Staff is trying to say they're
21 going to do something different than Part 50 or 52 to
22 go review and approve the license for Kairos?

23 CHAIR REMPE: For Kairos, they're going in
24 with a construction permit, Charlie. And so --

25 MEMBER BROWN: I got that.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

1 CHAIR REMPE: -- it's more to like what we
2 did with SHINE and the other Northwest Medical
3 isotopes where we reviewed it, and in fact, the
4 process is quite similar to what we did for SHINE, in
5 my opinion.

6 But again, the way this is being
7 presented, it sounds like that there is a broader
8 vision in play here. And I just would like the staff
9 to clarify that. Okay, Charlie?

10 Let's turn it over and let them answer
11 some questions and then I'll let you and Dennis ask
12 additional questions, okay?

13 MR. DUDEK: So, absolutely. Thank you,
14 Senior Member Rempe.

15 So, Mr. Bley, the ISG has been issued.
16 It's out for public comment, and we're actively
17 seeking public comments on it.

18 And second, I think Brian, in his opening
19 remarks, will address our expectations, or not
20 expectations, for letters. And that will become very
21 clear very soon.

22 And Mr. Brown, Senior Member Brown, I
23 would also say that you're question on the scope and
24 breadth of this discussion and what it could or should
25 apply to will also be addressed in some of Brian's

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 opening remarks and key messages.

2 MEMBER BROWN: Okay, thank you.

3 MR. DUDEK: So, Senior Member Rempe, are
4 we ready for Brian to really hit the ground running?

5 CHAIR REMPE: Yes. I was kind of just
6 going to turn the meeting over to you to start, but
7 let's turn it over to Brian.

8 MR. DUDEK: Right. Thank you.

9 CHAIR REMPE: He's with the Office of
10 Reactor and Regulation.

11 MR. SMITH: All right. Well, before I get
12 started I saw that Scott Moore had raised his hand.
13 Scott?

14 MR. MOORE: Thanks, Brian. I guess I'd
15 just like to add that the part about the licensing
16 processes came about several months ago. And I
17 noticed that the Committee Members were asking
18 questions that went to processes and saying things
19 like, well, we want to see this again when the license
20 gets to a different stage.

21 And I thought that it would help the
22 Committee Members if you had background information on
23 how the Staff licenses and what the Staff does at
24 various stages?

25 I talked with Rob, Rob Taylor, the deputy

1 director at NRR. Rob also thought that that would be
2 helpful. So that's how part of this briefing came
3 about.

4 It wasn't so much that there is a
5 different vision for the future. I think that they're
6 going to cover what they're doing now and what happens
7 at different stages.

8 And so that's the emphasize for a portion
9 of this briefing. So I don't want anybody to get
10 sidetracked that there is something new coming. But
11 I'll turn it back to Brian at this point.

12 CHAIR REMPE: So, Scott, I should I guess
13 apologize because, again, maybe it was the transition
14 in the chair position, or whatever, but I had not
15 heard that, with all my interactions with Larry or
16 Mike, that this was motivated by discussions you and
17 Rob had.

18 And so that's, I've been puzzled about
19 this motivation for this meeting for a bit of time now
20 and I'm just kind of surprised to hear this actually
21 right now. So thank you.

22 MR. MOORE: Sure. I think Brian can
23 address the, what they want to cover. Thanks. Brian?

24 MR. SMITH: Thanks, Scott. And thanks,
25 Chairman Rempe and Members of the Subcommittee.

1 I'll go into a little bit further as to
2 why we want to have this presentation today. But like
3 I said, thanks for the opportunity for this briefing.
4 For allowing me and the Staff to update you on this
5 and provide a lot more detail here.

6 My name is Brian Smith and I am the
7 director of the Division of New and Renewed Licenses
8 in NRR. Our division is responsible for the licensing
9 of new light water power reactors.

10 Mo Shams, the director of the division of
11 advance reactors and non-power production and
12 utilization facilities is also in attendance. He just
13 turned his camera on there. Mo's division is
14 responsible for the licensing of non-light water
15 reactors, as well as research and test reactors.

16 So, as we already mentioned, we are here
17 to brief you on the licensing processes for new and
18 advance reactors. So, just as we were talking, why
19 now and why this topic.

20 Well, in the last five years our licensing
21 of new plants and designs has significantly slowed
22 compared to what we experienced in the ten years
23 before that. However, we are entering into a new
24 phase of power reactor licensing.

25 We recently accepted the Kairos Hermes

1 test reactor construction permit for review. We're
2 also expecting the construction permit from X-energy
3 this spring, and TerraPower next year.

4 From the light water SMR side, we expect
5 the NuScale standard design approval application in
6 December of this year. And the UAMPS Carbon Free
7 Power Project COL application that will reference that
8 NuScale SDA the following summer.

9 We're also in pre-application engagement
10 with numerous vendors on a variety of designs. And
11 have started to interact with you on many of those
12 designs via topical reports over the last year.

13 So in addition to these diverse designs,
14 there are also new licensing approaches being taken or
15 considered by these applicants.

16 I mentioned construction permits. We have
17 not issued any power reactor construction permits in
18 over 30 years. As Chairman Rempe mentioned.

19 We do have experience, somewhat recent,
20 with construction permits for SHINE and Northwest
21 Medical Isotopes for medical isotope facilities. But
22 we may also see partial standard design approvals
23 issued that will be referenced in COL applications.

24 Applicants can submit construction permits
25 for sites where their early site permits have been

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 issued. We've already seen a custom COL application,
2 and we may see more of those in the future. We may
3 even see an application for a manufacturing license.

4 So in addition to that, the Staff has also
5 conducted some lessons learned reviews on the more
6 recent licensing reviews. We've identified some
7 improvements and have proposed changes in many of our
8 processes and procedures.

9 We are also planning to use a new flexible
10 review process. We are making many of these changes
11 also to be consistent with the direction driven and
12 the Nuclear Energy Innovation and Modernization Act,
13 or NEMA.

14 So, it was with all of these changes in
15 designs, licensing approaches and review changes that
16 we felt it was a good time to brief the Subcommittee.

17 So as we mentioned earlier, also if we
18 have time towards the end of this briefing, we also
19 plan to discuss our light water reactor construction
20 permit interim staff guidance document that's out in
21 draft for comment now. And whether or not, based upon
22 that presentation, we'll figure out with your input as
23 to whether further review by the Committee will be
24 necessary.

25 We do consider this information that we're

1 providing today as information briefing, and so we're
2 not going to be requesting a letter from the ACRS. At
3 least for the licensing processes portion.

4 All right, so if you can go to the next
5 slide please. So, I want to touch on a few more
6 things.

7 So, 10 CFR Parts 50 and 52 both remain
8 viable regulatory methods to licensing all new power
9 reactors. There are advantages and disadvantages to
10 each of these licensing processes, and the applicants
11 will choose the process that works best for them.

12 Most reactors licensed in the U.S. were
13 licensed under Part 50, which includes a two-step
14 process. Issuance of a construction permit, followed
15 by an operating license.

16 For the new Part 52, it offers a one-step
17 licensing process that includes issuance of a single
18 combined license that allows plant construction and
19 subsequent operation and allows resolution of more
20 licensing issues prior to plant construction.

21 So as I already discussed, we've begun to
22 see a trend that some future applicants, for power
23 reactors, may choose the Part 50 process while others
24 may choose Part 52. And as you're aware, 10 CFR Part
25 53 is now also being developed.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 The same rules intended to provide a risk-
2 informed technology inclusive framework for advanced
3 reactors to be licensed. However, this rule will not
4 be available for applicants to use until after 2025.
5 Thus, these early applicants will follow the licensing
6 processes in either Parts 50 or 52.

7 So for the last few years the Staff has
8 been stressing the importance of pre-application
9 engagement with vendors. We issued a draft white
10 paper last year that provides information to new and
11 advance reactor developers on the benefits of robust
12 pre-application engagement in order to optimize both
13 safety and environment application reviews.

14 So in the paper we encourage early and
15 active pre-application engagement. Effectively using
16 white papers and topical reports. And we specifically
17 identify topics to address in those white papers and
18 topical reports.

19 We also stress the need for the submission
20 of a high quality application. As well as early
21 coordination with technical management and legal staff
22 on highly challenging issues.

23 The Staff has also identified and is
24 implementing lessons learned for process and procedure
25 enhancements. Some of these include the following.

1 We have been, and are developing, new review guidance.
2 We're updating existing review guidance where
3 necessary. And we plan to implement a new flexible
4 review process that you'll hear more about later.

5 And we are continuing to streamline our
6 safety evaluation reports. And we're using a risk-
7 informed approach to focus staff resources on review
8 areas commensurate with their safety significance.
9 And we'll further address all of these items later on
10 in our presentation.

11 CHAIR REMPE: So, Brian, I'm going to stop
12 you right now. Dave has a question and I have a
13 question --

14 MR. SMITH: Okay.

15 CHAIR REMPE: -- after Dave.

16 MR. SMITH: Okay, go ahead.

17 CHAIR REMPE: Dave, go ahead.

18 MEMBER PETTI: I just want a
19 clarification. I thought I heard you say that the ISG
20 was for LWR applications, is that true only?

21 MR. SMITH: That's the way it is written.
22 There are some more generic parts to it that could be
23 utilized by non-light water reactors. But the
24 principle purpose for it was for light water reactors.

25 The TICAP and ARCAP guidance development

1 initiatives handle the aspects for non-light water
2 reactors.

3 MEMBER PETTI: Okay. So, is it fair to
4 say that that's just a subset of what we're going to
5 hear in these slides today?

6 Because we're going to talk about Hermes,
7 which is a non-light water reactor. So, I'm trying to
8 put the pieces together and I guess I didn't
9 understand.

10 The ISG is sort of a subsidiary document
11 for a subset here. But you're talking about a broader
12 set of changes to your review approach that cut across
13 the technologies per say.

14 MR. SMITH: That's correct.

15 MEMBER PETTI: Okay. Okay, thanks.

16 CHAIR REMPE: So, Dennis, I see your hand
17 up but I'm going to put myself next because I would
18 have had my hand up earlier right after Dave's.

19 MR. SMITH: Okay. I finished my remarks
20 and so I was open to questions now anyway.

21 CHAIR REMPE: Yes. Okay. So I had a
22 question sort of along with Dave saying it. I'm kind
23 of struggling with the schedule for guidance updates.

24 Because I think it's great that you've
25 tried to clarify more in the ISG of what you expect in

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 an appropriate submittal for construction permit. But
2 in preparing for the upcoming discussions on the Part
3 50, 52 alignment topic, I see things that are not yet
4 discussed in the ISG for the construction permit.

5 And I know that when we've had prior
6 discussions on part 50, 52 we've said, you know,
7 implementation and the guidance for implementation are
8 very important for trying to do what you're thinking
9 about with Part 50, 52 alignment and lessons learned.

10 And I just am struggling with how staff is
11 making decisions on when to update guidance and to
12 release it so people can understand what's really
13 intended with changes. Is there some sort of master
14 schedule that lets us understand why staff is doing
15 some updates and delaying other updates?

16 MR. SMITH: A master plan. I did review
17 the Part 50, 52 licensing package recently, and within
18 that package there is a list of the guidance documents
19 that we believe are impacted by the proposed changes
20 in the rulemaking.

21 And it does, there is one enclosure, I
22 believe, to the package that lays out, these are the
23 documents we plan to update at this time, and then
24 here is a list of the documents we feel that can be
25 updated at a future time. And it does layout kind of

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 the reasoning for that.

2 CHAIR REMPE: So, let me be a little more
3 specific to say why I'm curious.

4 MR. SMITH: Okay.

5 CHAIR REMPE: Let's talk about PRAs. Your
6 interim staff guidance doesn't explicitly say you need
7 a PRA but it kind of implies it. And then I know that
8 in prior discussions, I'm not saying anything that's
9 not in the open public, that it said, hey, we're going
10 to require a PRA for Part 50.

11 And then we know in Part 53 there is this
12 discussion about, well, maybe something else might be
13 acceptable than a PRA. And then there is this, well,
14 what exactly would be an acceptable level of detail
15 for a PRA in a Part 50 construction permit application
16 when things are still being developed.

17 And so to me the guidance is very
18 important to understand what staff's intent is for
19 these various rulemaking activities. And I could say
20 the same thing about other aspects of how the guidance
21 is really important in understand what the staff
22 expects.

23 And so, yes, you've identified what needs
24 to be changed, but how it will be changed. Because
25 the rule by itself doesn't explain all aspects. Does

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 that make sense why I'm asking for a master schedule
2 of the staffs and to explain the staff's intent?

3 MR. SMITH: Yes. And in some ways we're
4 working efforts in parallel. So, we do have, for
5 those set of guidance documents for the 50, 52
6 rulemaking that we believe needs to be updated now, we
7 do have draft versions of those that will be available
8 for review. Already marked up to be consistent with
9 the proposed changes in the rule.

10 Currently, as you just said, Part 50 does
11 not require a PRA as part of the construction permit.
12 And so the guidance that we're issuing, and maybe
13 Carolyn can talk more about it later if needed, we're
14 kind of stuck in that it's not a requirement at this
15 time.

16 Applicants can go ahead and include
17 information related to a PRA that may have developed
18 as part of development of the construction permit and
19 their design as part of the application, but there is
20 no requirement for them to do that at this time. And
21 so we're kind of limited if you will, in what we can
22 put into the guidance document.

23 CHAIR REMPE: Yes. And then Part 53
24 guidance, they impact the guidance. So it just seems
25 a very difficult problem to try and figure out how to

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 update the guidance and have it available for lease
2 with the rule making package for 50, 52, and then also
3 thinking about later effects from what's going on with
4 Part 53.

5 And this same thing occurs with some of
6 the EPZ stuff and operator's licensing certification
7 and all of these other topics. And so I think it's a
8 conundrum, but I'll stop there and probably bring it
9 up again in subsequent slides but it was something I
10 wanted to bring up early. And, Dennis, it's your turn
11 now.

12 MR. BLEY: I have to get my mic open.
13 Thanks. Brian, just a couple of things. And I'm in
14 the tell them what you're going to tell them stage of
15 today's presentation. I want to make sure I kind of
16 understand what you're going to tell us.

17 So, what I think I've heard is, this ISG
18 is intended for all LWR reactor licensing processes,
19 50, 52 and 53, in all LWR reactor sizes but that TICAP
20 and ARCAP will do something similar for the non-LWRs.

21 And second, and Joy touched on it, and I
22 looked forward to hearing more about this, is kind of
23 how this ISG fits with respect to the Part 50, 52 and
24 the Part 53 rulemakings and are you intending to
25 revise it to support those as they come to fruition or

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 how does it really work.

2 And we heard from Scott, our executive
3 director, that this is really just documenting this
4 evolved approach. But we heard from you that it's
5 also focusing on a new review process. So I think
6 there is something new here.

7 From what I just said, is there anything
8 you disagree with?

9 MR. SMITH: I was making a note real
10 quick. So, the first thing, the ISG, it was written
11 to reflect Parts 50 and 52 and not Part 53. It's
12 written to address the regulations as they exist at
13 this time, not future changes in the 50, 52 rule
14 making or the Part 53 rulemaking, it's to address
15 current set of regulations.

16 And with respect to the review process,
17 it's how the staff might go about conducting its
18 review. Not necessarily an application process change
19 that would impact the applicants. What they would
20 include or how they would include it, it's more about
21 how the staff would go about conducting its review.

22 MR. BLEY: Okay. And that involves some
23 things that haven't been done before, is my take. Or
24 haven't been done this way before. By the way, I like
25 your backdrop.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 MR. SMITH: Thank you. I wouldn't call it
2 too groundbreaking in ways of doing things, it's more
3 doing more focus reviews. I think Ben may get into
4 that a little bit later on, as kind of taking a core
5 team approach to evaluate in the applications.
6 Focusing a lot more on the real safety significant
7 aspects of the designs.

8 MR. SHAMS: Brian, I can augment --

9 MR. SMITH: Sure.

10 MR. SHAMS: -- if that's all right.

11 MR. SMITH: Sure.

12 MR. SHAMS: Member Bley, is that okay if
13 I augment?

14 MR. BLEY: I'm no longer a Member, but
15 sure.

16 MR. SHAMS: All right.

17 MR. BLEY: But go ahead.

18 MR. SHAMS: That's perfect. Thank you.
19 So as Brian indicated, it is not a, per say, a
20 different set of criteria, per say, or a different set
21 of ways to get to a safety conclusion, but in a way
22 it's how we're organizing the review, it's how we're
23 sourcing it, it's how we're excluding it to start with
24 the safety significant, risk significant aspects of
25 the view. Focus our resources on that.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 And that's relevant in the sense that we
2 don't have and SRP to structure the review around as
3 it has been for decades with the light water reactor.
4 So this is more of an informed review based on the
5 reactor type, scale, risk, as we see it, source term
6 and the like.

7 And we're structuring that review in a
8 core team that's focused just on that part of the
9 review. Does that make sense?

10 MR. BLEY: I'm sure it will make more
11 sense later, but thanks.

12 MR. SHAMS: Okay, sure.

13 MR. BLEY: Both of you.

14 MR. DUDEK: Any additional questions. I
15 would also add that one thing, one piece I did not
16 hear from either Mo or Brian is that we're also
17 concentrating on the length of the review.

18 We're doing some novel approaches in
19 accordance with NEMA and the review schedules.
20 Whether it's six phase, four phase or otherwise,
21 trying to shorten the phase and be more effective in
22 our review times to get things faster, done faster,
23 and more effectively.

24 MEMBER BROWN: That implies that you're
25 not going to review some stuff if you're going to do

1 it faster. I mean, I'm struggling a little bit.
2 Maybe like Dennis I guess.

3 I mean, a lot of plants were built to 50
4 and 52 and now we need an ISG to tell people how to
5 apply for a plant under 50 and 52?

6 MR. SMITH: I address the construction
7 permit application process. It's something, like I
8 said, we haven't done for a power plant, nuclear power
9 plant, in more than 30 plus years.

10 So it's looking at the guidance that was
11 issued back in the 1970s and looking at ways of
12 updating that as necessary. Or to reflect the current
13 times, if you will.

14 MEMBER BROWN: But we didn't have to do
15 that for Vogtle?

16 MR. SMITH: Vogtle went through the COL
17 process.

18 MEMBER BROWN: Oh, okay. So, okay. All
19 right. We went through that, I just didn't remember
20 the piece parts.

21 MR. SMITH: Yes, sir.

22 MR. DUDEK: Yes, we'll get into the one
23 step and the two steps processes by 50 and 52. But I
24 would also offer that this presentation will really
25 get into, and that the ISG is only one small piece of

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 what we're doing. This is an overall review approach
2 on how to become more efficient and effective in our
3 timelines and our application of the reviews.

4 So it has to do with length of time.
5 Being risk significant in what we review. Also, you
6 will hear about how we're effectively using white
7 papers and topical reports to gain a regulatory
8 foothold and to gain some key insights earlier on some
9 of those technical topics that we would often struggle
10 with. And that would elongate the schedule during, as
11 an example, for what NuScale did.

12 Some of the rad protection, the turbine,
13 missile issues, the crane drop accidents. So a lot of
14 those issues, we're getting them early in white papers
15 and topical reports to be able to get an early
16 regulatory foothold and an early look at them before
17 the application even comes in-house. So that's how
18 we're proposing to do things a little bit differently.

19 MEMBER BROWN: I guess, do you use a
20 different, slightly different example. I mean, how
21 can I phrase this.

22 I mean, a lot of the delays, at least
23 based on my observation, or the slow downs I would
24 call them, not delays, was a result of incomplete
25 information that was sent in the design control

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

1 documents, the various SRP chapters that were being
2 reviewed, et cetera. This is during the design phase.

3 Obviously it was done under COL
4 operations, but once we, I mean, in the I&C world we
5 addressed that way back in 2008 and '09 where we
6 issued this pre-application type review process to
7 make sure people understood what was being expected
8 from NRC. Along from the I&C standpoint. And that
9 worked pretty well when we got up to Vogtle and then
10 to NuScale and then to APR1400.

11 Which compressed those timeframes to look,
12 you look at the SBWR, it took us almost two years to
13 get through it. APR1000 was faster, 1400 was faster,
14 and NuScale was faster. All because of the pre-
15 application in the amount, the type of information
16 that was submitted that allowed you to review it and
17 us to understand the review.

18 So I'm trying to figure out how this
19 integrates in for that thought process, that's all.

20 MR. DUDEK: So I would offer that if you
21 just hold off on those questions until Slides 14 and
22 15 I think we would discuss many of those lessons
23 learned and many of those actions that we plan on
24 taken that you've just discussed, as a matter of fact.

25 MEMBER BROWN: Okay, thank you.

1 CHAIR REMPE: So, Dennis, I still see your
2 hand up but I think it's a hold over from the past
3 that didn't get lowered, right?

4 MR. BLEY: That's true.

5 CHAIR REMPE: Okay. So then, just
6 briefly, and I will bring it up later, but when I look
7 at some recent interactions that I've seen with the
8 staff, and when we look at some of the future
9 submittals that might be coming down the pike, I'm
10 wondering why the staff has also not considered formal
11 guidance on what is an acceptable level of detail in
12 a, in a CP or a COL application.

13 And I know that some of the ISG starts to
14 encroach on that topic, but also an acceptable level
15 of detail for topical reports.

16 (Off microphone comments.)

17 CHAIR REMPE: I hear some, Mike, is that
18 you responding back or is it just you left your mic
19 open? Oh, it must be a left open mic.

20 But anyway, that's something that I think
21 might help avoid some issues we're seeing in the
22 future. But it's just something to think about, and
23 we can discuss more later. Unless you have a quick
24 comment now that you are starting to think about that.

25 MR. SMITH: Yes, ma'am, we are. And one

1 of the main drivers for issuing this ISG on
2 construction permit guidance, what was just that from
3 the industry on what is the appropriate level of
4 detail necessary for a construction permit.

5 CHAIR REMPE: Okay. Yes. I mean, we
6 struggled with that in the SHINE review. That we
7 wanted a little more and it's a fuzzy line.

8 But anyway, please go ahead. I know we've
9 taken a long time on this initial slide.

10 MR. SMITH: Hopefully we can better
11 address it through the presentation.

12 MR. DUDEK: Okay, so, Carolyn, would you
13 go back to the agenda slide so we can kind of tell
14 them what we're going to tell them, and tell them what
15 we're going to tell them?

16 So, you've heard today kind of the premise
17 behind what we're going to discuss today. We're going
18 to give you a brief overview on the licensing process
19 for 50 and 52.

20 I think these are good background slides.
21 I'm not going to go in-depth into the two kind of
22 busier process slides, but I will go into greater
23 detail on the third slide, which is a pretty good
24 picture about how the two process side-by-side and how
25 they interact.

1 We're going to talk about the importance
2 and what we're doing differently and what we're
3 touting in the pre-application activities. And then
4 we're going to talk about some of the activities
5 supporting an official review.

6 And then Ben Beasley is going to take over
7 on Slide 18. And really, really where the rubber
8 meets the road on how we're using white papers and
9 topical reports in a new and novel fashion. And
10 accordance. And also some of the review process
11 enhancements.

12 And then as we have time at the end, we're
13 going to discuss that. That one piece about the CP
14 ISG guidance. And Carolyn Lauron is ready to brief
15 you and answer questions associated with that.

16 MR. BLEY: When you say white papers, when
17 you say white papers, you're talking about NRC Staff
18 white papers?

19 MR. DUDEK: Or applicant white papers.

20 MR. BLEY: Applicant white, okay.

21 MR. DUDEK: So either way. Okay? So,
22 Carolyn, if you'd please go to slide, so really, the
23 purpose today as we've discussed --

24 MEMBER BROWN: Can I interrupt you again?

25 MR. DUDEK: Sure.

1 MEMBER BROWN: When you say, thanks,
2 Dennis for reminding me, white papers. Are white
3 papers, the thought process there, is they are
4 supposed to give you enough outline or are they going
5 to be a substitute for design control document type
6 things which tell people how they're going to do
7 something or is it going to be more general in the
8 white papers?

9 Like, we'll do the right thing and we'll
10 meet your requirements, as opposed to providing any
11 detail.

12 MR. DUDEK: So --

13 MR. BEASLEY: Do you want me to chime in?

14 MR. DUDEK: Sure.

15 MR. BEASLEY: This is Ben Beasley. And I
16 will be talking about white papers on several slides
17 later.

18 MEMBER BROWN: Okay.

19 MR. BEASLEY: And just to address one
20 specific thing. I'm only going to be talking about
21 white papers that are submitted by applicants, by
22 developers. I'm not going to get into staff developed
23 white papers.

24 And as we talk about white papers, one of
25 the points that I'll emphasize is that it is a

1 mechanism for informal feedback. And so, typically we
2 do not make any findings, we aren't drawing any
3 conclusions on white papers.

4 It's not a design control type of document
5 that's getting that level of control at the applicant,
6 or from us. Does that address your question?

7 MEMBER BROWN: Yes. I'll listen to what
8 you have to say later.

9 MR. BEASLEY: Okay.

10 MEMBER BROWN: Thank you.

11 MR. BEASLEY: Very good.

12 MR. BLEY: So in a sense, it's something
13 like your pre-application meetings, it's just to get
14 information across from one side to the other here.

15 MEMBER BROWN: Yes, but the ISG, I think
16 it's five, six or seven, I can't remember which one it
17 is for the I&C, does say, hey, identify the
18 architecture for the system, for instance, and get us
19 some of the details that go along with it.

20 It lets you know that they're heading in
21 the right direction when they come in with their
22 formal documents. But they're not, though they're not
23 committed on those. I mean, that just gives you a
24 roadmap.

25 MR. DUDEK: Okay. Any additional

1 questions or insights?

2 MR. BLEY: Well, when I asked the question
3 I was aiming at staff, but thanks, Charlie, for your
4 comment.

5 MEMBER BROWN: Oh, sorry about that. I'll
6 let the staff answer it then. I thought you were
7 talking to me.

8 MR. DUDEK: I couldn't have said it any
9 better, Member Brown. So, out of all the things
10 discussed, and the purpose and the objectives and the
11 key points today, so this part of the presentation,
12 before we get to the ISG, is really that last bullet.

13 That's what we want to focus on today, is
14 how the staff is doing things differently, how we're
15 streaming our review processes. So that's how I'm
16 going to proceed and then Ben will take it over.

17 Next slide please. So this slide and the
18 next slide really outline the, I think these are good
19 things to keep in your back pocket. They are out of
20 the information, the NRC's information book.

21 They outline the two processes. This is
22 the CP and operating license two-step process. It
23 outlines exactly what the staff is doing, what the
24 applicant is doing. What our inputs and outputs are
25 to the Commission and to the hearing process.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 You can go to the next slide, Carolyn.

2 CHAIR REMPE: Mike?

3 MR. DUDEK: Yes.

4 CHAIR REMPE: I'm sorry. I really like
5 diagrams, and these are a good step forward but
6 they're not consistent in what they show.

7 For example, these diagrams probably
8 should show the public interactions, which will appear
9 in the next diagram, right?

10 And the next diagram omits ACRS
11 interactions. And so, is there a reason, and doesn't
12 the Commission decide on the, and this one actually,
13 I'm not sure, don't they decide when the operating
14 license goes or is it just a Staff decision?

15 MR. DUDEK: I believe it's a Commission
16 decision on the operating license. That's the 103G
17 finding. I believe that is.

18 And it will get to those interaction
19 points in Slide 8, 9 and 10, I believe. That has all
20 the interactions for stakeholders and the Commission.
21 So they refine these even more so.

22 CHAIR REMPE: So, again, these are on your
23 website. And it would be nice if someone would fix
24 them and make them so they're consistent and show the,
25 some of the key parts in a consistent fashion, is my

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 point. It's up to you guys what you do with the
2 website but it just would be nice.

3 MR. DUDEK: Correct. I think there is a
4 level of detail possibly omitted for these. And I
5 will take that back for action.

6 And again, this one just shows, at a
7 higher level, the two-step licensing process. And in
8 the next slide, Slide 7 Carolyn, shows the one-step
9 process at a very high level.

10 And then I'll speak to Slide 8, is really
11 my speaking slide. This shows at a very high level
12 that the two licensing processes side-by-side.

13 You know, Part 50, a lot of the applicants
14 have come to us in drop-ins and said, we think that
15 quite possibly Part 52 takes too long between getting
16 an early site permit and design certification and then
17 getting the COL. It could be five, six years before
18 we get to construction and operation.

19 And while it does eliminate a lot of the
20 risk, because the public hearing is all combined into
21 one instead of the two parts that we see under Part
22 50, we foresee that we're able to break down and start
23 construction a little bit earlier, even though that
24 there is a risk at the end between the construction
25 permit and the operating license.

1 So that's what we've heard in the drop-
2 ins. And that's I think at least two of our future
3 applicants are headed. And that's why we've heard
4 them and tried to update that ISG guidance to provide
5 a little bit more clarity on that level of detail.
6 Kind of the discussions that we've already been having
7 throughout this meeting.

8 MEMBER PETTI: So, Michael, this is Dave.
9 Just a question. So I infer from what you said, let's
10 call them the legacy vendors, understand these two
11 processes quite well.

12 So what you're really talking about are
13 some of the newer players coming in who don't have
14 that background in Part 50. And they're sitting on
15 the sidelines and they're watching Part 52, the few
16 that have done it.

17 And they need more guidance because
18 they've never been through Part 50. Is that sort of
19 --

20 MR. DUDEK: Well, as Brian alluded to, the
21 Reg Guide 800 for the Part 50 hasn't been updated
22 since 1979. So these applicants have come in and
23 expressed interest in using it and what that level of
24 detail is for how they would proceed in the process.

25 Because a lot of things have changed in,

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

1 what, 20, 30 years. So, that's where we, we took an
2 initial stab at getting the ISG updated. We
3 interacted with all our technical stakeholders and we
4 identified, we tried to identify the most risk
5 significant aspect that you will see in that enclosure
6 that Carolyn will talk about a little bit towards the
7 end of this meeting.

8 And now it's out for a 45 day comment
9 period. So, if we've missed something, if there are
10 significant things that we have overlooked or didn't
11 include, by all means, we're looking for written
12 comments on that. And we're looking for input.

13 MEMBER PETTI: Okay, thanks.

14 MR. DUDEK: Okay. So this is the one-step
15 versus the two-step process. As you've said, some of
16 those newer players are sitting there scratching their
17 heads, why we need to go through.

18 They understand the benefits of the Part
19 52 one-step licensing process, but it's also the
20 length of time. They think they can gain some
21 efficiencies and effectiveness by submitting their
22 PSAR, breaking ground, getting their construction
23 permit and taking that risk at the end of the day for
24 public hearings.

25 So, that's really what we've heard and why

1 we're doing things, we're looking at things a little
2 bit differently and trying to, as Chairman Rempe says,
3 move towards getting some clearer guidance out on the
4 street.

5 All right, so with that being said, Slide
6 9 please. Some additional licensing processes. You
7 know, while you're looking at a Part 50 application
8 for a two-step, there are certain considerations to be
9 held. Such as early sites permits.

10 You know, an equivalent level of
11 information does need to be required if you're not
12 going to enter into different parts of the Part 52
13 process. Such as, does early site permits, that site
14 characterization piece.

15 An equivalent level of information does
16 need to be included into the Part 50 process. As well
17 as some of those design aspects. And we're trying to
18 provide clarity on what those designs and what the
19 level of information is that we're expecting.

20 MR. BLEY: Michael?

21 MR. DUDEK: Yes, sir.

22 MR. BLEY: Can you refresh my memory a
23 little?

24 I think, when one gets an early site
25 permit under Part 52, and I think we saw this down in

1 Georgia, you're allowed to do certain non-nuclear
2 parts of construction after you have that early site
3 permit. That's true, isn't it? Like, the cooling
4 water system and that sort of thing.

5 MR. DUDEK: I believe there are very
6 distinct ground rules established for ESD applicants
7 and approvals where you can move some dirt and you can
8 do some non-nuclear activities. I believe that is
9 correct.

10 MR. BLEY: Okay, thanks. That's what I
11 remember but I hadn't seen one in a little while. Go
12 ahead.

13 MR. DUDEK: Okay. But some of the other
14 aspects of the Part 52 that have paid dividends is
15 from manufacturing licenses, SDAs, which NuScale is
16 fully utilizing, and we're expecting an update to
17 their design certification here coming in December.

18 I believe overall that they're going to
19 use this new SDA to solve the carve outs and a few
20 other distinct design aspects that they wish to
21 improve for that DCA. And especially that they're
22 going to be using for the UAMPS, the proposed UAMPS
23 project.

24 There's a hand.

25 MEMBER KIRCHNER: This is Walt Kirchner.

1 MR. DUDEK: Yes, sir.

2 MEMBER KIRCHNER: Good afternoon. I think
3 there is an important distinction that is very subtle
4 about 52 versus 50. Basically, people knew applicants
5 who come in under 52 essentially, all right, that's
6 the word I wanted to use, they need an essentially
7 complete design.

8 And most new reactors that are not
9 evolutionary are not essentially complete designs,
10 they are very pro, not even pro-typical, they're just,
11 yes, they're first of a kind. And they're often not
12 nearly as well, how should I say it, thoroughly,
13 completely designed as what you would see coming from
14 an LWR applicant.

15 MR. DUDEK: Well, would Brian or Mo like
16 to add some additional insights on that of what we've
17 seen in some of our experiences with some of these new
18 designs and how complete they are?

19 I mean, I can speak to the NuScale. And
20 we struggled with that earlier, as we discussed
21 earlier in the meeting. Is that the length of review
22 and the quality review depends on the quality of
23 information that we received.

24 And I think we struggled with that a
25 little bit early in the NuScale review, and then we

1 turned it around. We got the information we needed
2 and we started blazing the trial forward.

3 But you're exactly right. I think the
4 ability to review and the staff's effectiveness at
5 their review solely and squarely depends on the
6 quality of information provided to us.

7 MEMBER KIRCHNER: And so, my takeaway is
8 that, the preface is, if someone picks 52, they better
9 have a very mature, essentially a complete design
10 otherwise it's not going to turn out to be an
11 expeditious process, it may turn out to be a very
12 painful, laborious process of recycling through the
13 system.

14 MR. SMITH: This is Brian Smith, Mr.
15 Kirchner. I think you're right. And that may be why
16 some of these early submitters of applications are
17 choosing the Part 50 process over the Part 52.

18 It's also partly why we're highly
19 encouraging the pre-applicant engagement process. And
20 encouraging them to address these specific issues that
21 we laid out in the white paper.

22 We know that, as you say, the design
23 information. Well, is there enough testing that's
24 been performed as well on some of these unique safety
25 functions and features, as well to be able to support

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 an application.

2 So, we understand where you're coming from
3 with that.

4 MR. BEASLEY: And this is Ben Beasley.
5 I'll chime in a little bit as well.

6 Some of what we're hearing a little bit of
7 is that after they get their operating license,
8 potentially through a Part 50 process and they build
9 a plant or two of that design, then they would seek an
10 SDA or a design certification for the multiple plants
11 that they hope to sell following that.

12 And so, the expeditious process to get
13 something built quickly and proven might be Part 50.
14 But then they would move over to Part 52 and take
15 advantage of the opportunities there for the standard
16 approval.

17 MEMBER KIRCHNER: So when you, you're
18 probably coming to this so I apologize for
19 interrupting, but when you have these pre-application
20 engagements, do you go through this or do you pretty
21 much let the applicant pick, obviously the regulations
22 are there. They're available to anyone to utilize,
23 and the burden of the proof is on the applicant that
24 they have the material to satisfy the NRC review
25 process, but do you have a candid discussion with the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 applicants about the options and what's required?

2 MR. DUDEK: And I'll start that. And I
3 would say, absolutely yes. I say for each one of the
4 three applicants that are currently in-house, in my
5 shop, they have all come to us and we had that brutal
6 and cold-hearted discussion of, this is what we hope
7 to accomplish and this is what we want to do, how can
8 we most effectively do that.

9 And I think where we've ended up with all
10 three applicants is with topical reports. So they
11 want to flood an idea to us and get an early
12 regulatory foothold or they have something new and
13 novel that they want the staff to view and get initial
14 thumbs up, thumbs down on, or methodologies that
15 they've developed and that they want to implement in
16 their overall COL applications, they have been
17 submitting those things to us early and allowing us to
18 buy in on those concepts and ideas and risk-
19 significant aspects.

20 And then develop an SER or develop some
21 kind of position paper on those that gives them an
22 early, what we like to call an early regulatory
23 foothold. So that they kind of know the bounds and it
24 allows them to better proceed with their design and
25 how they design it.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 MR. BEASLEY: And on my, on our side, we
2 have had similar conversations with the potential
3 applicants. And it hasn't been hard conversations,
4 they, because of the aggressive schedules that they
5 are pursuing they've recognized the two-steps process
6 lets them get started a little bit earlier, gives them
7 more time while the construction permit application is
8 being reviewed. It gives them time to finalize their
9 design before they submit the COL application.

10 And so, it hasn't been a hard discussion,
11 but certainly we have recognize that to do a COL
12 application you need to have a finished design, a very
13 mature design in order to be able to support that
14 application. And the applicants have recognized that
15 as well.

16 And we Mike said, they're sophisticated
17 enough to recognize the benefits of pre-application
18 and the regulatory footprint that they can get through
19 pre-application engagement, and so we are benefitting
20 from that, from several of the developers.

21 MR. BLEY: Could you folks talk a little
22 bit about the thing you brought up where somebody gets
23 a Part 50 license, and maybe they do a couple of
24 plants refining their design, and then comes in under
25 Part 52. The ease of transferring things that were

1 reviewed under Part 50 to Part 52 is kind of an
2 undefined area.

3 Have you worked anything out there that
4 seems to becoming clear to you?

5 MR. BEASLEY: So, I'll chime in first and
6 just say that we haven't heard anything formal from
7 any of the applicants of that, pursuing that line.
8 It's just hallway conversations of thinking down the
9 road if they're successful in getting some reactors
10 sold and going into a larger production effort that's
11 kind of what their thought is.

12 With respect to transferring a review from
13 the Part 50 to a Part 52, I haven't really heard any
14 thinking along those lines. And certainly, when we
15 have talked about, talked with the applicants about
16 subsequent applications that use the same design, it
17 certainly should expedite our review.

18 The more we can, the less there are design
19 changes the more we can rely on the previous review.
20 And so that should make things go easier.

21 And so I know that some of the applicants
22 are thinking along those lines, but we haven't done
23 anything formal about transferring those types of
24 reviews.

25 MR. BLEY: Well, the process makes sense

1 on first blush and I think it's a good one. And that
2 would eventually let Part 52 do what it was supposed
3 to do in allowing you to replicate plants pretty
4 easily.

5 I would think that it wouldn't be, it
6 would be useful if the staff started thinking about,
7 you know, as you go from a design cert to a COL you
8 have that process for identifying whether the designs
9 are identical or whether they've changed a little bit.
10 And it would seem that same process ought to apply.

11 Surely, easily as you come from Part 50
12 over to 52, unless there are a lot of design changes.

13 MR. DUDEK: So, I would offer that the,
14 two different aspects. So the level of information
15 needed during an operating license and development of
16 that FSAR for FSCR, it should be equivalent to what's
17 produced, in some respects, during a COL application.
18 The level of information should be the same.

19 And the standard design approval is a
20 pretty flexible process so it would take that level of
21 technical information or level of design information,
22 and staff would have to look at it and do a delta
23 review. But in my humble opinion, I would think that
24 that would be pretty equivalent to be able to get an
25 SBA for an FSRA that was established under a COL

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 versus an operating license under Part 50.

2 MR. BLEY: That seems to make sense. And
3 seems to be, at least on for starters, as being pretty
4 transparent and easy to do. So it will be an
5 interesting time.

6 MR. DUDEK: Next slide, Carolyn. So
7 Chairman Rempe, I think this is really where I think
8 your questions reside about a lot of the mandatory
9 hearings and the ACRS review. This is really the more
10 in-depth slides on, this one is, Number 10 is on Part
11 52. And I think Number 11 is on Part 50.

12 But it outlines, in greater detail, what
13 those interactions are with members of the public,
14 with the commission, with the ACRS and what the
15 approvals are. So, I think that's where these next
16 couple slides really add some value.

17 CHAIR REMPE: I agree but it just might
18 not have the same level of detail. It seem
19 appropriate, especially since they're on the website.
20 Those earlier diagrams.

21 MR. DUDEK: Understood. And I'll take
22 that back and Brian, Mo and I can consider those
23 comments. Absolutely. And maybe there is a better
24 one that we can combine all of them into to.

25 CHAIR REMPE: The reason I'm also

1 emphasizing this is, I think when we get with Part 53
2 I've also regularly brought up it would be nice if we
3 can see in the diagram how it's different and some
4 things like that. And also as you do the alignment
5 for Part 50, 52, to see how things have changed. It
6 would be nice.

7 MR. DUDEK: I will take that for action as
8 well. Some very, very good comments.

9 If there is no other comments --

10 MEMBER BROWN: I have one.

11 MR. DUDEK: Sure.

12 MEMBER BROWN: All of these charts,
13 including the two back on Slide 6, which showed ACRS
14 meetings in both steps, they say meeting. This most
15 recent one you show now makes it more obvious. What's
16 that, Slide 11. 10 or 11, one of the two.

17 Rarely is, in other words, we're supposed
18 to have one meeting that's going to review the entire
19 process, design certification process. That's what
20 that implies.

21 And I find it very difficult to see that
22 we're going to have one meeting to cover all aspects
23 of all of the technical areas that are supposed to be
24 reviews. Reviewed.

25 MR. DUDEK: So Mo is going to help me, but

1 I think it's grouped, it can be classified as group of
2 meetings because even during the NuScale review in
3 Phase 5 there were three months of meetings, right, on
4 different technical topics, on different chapters.
5 And it depends on how you break it out.

6 But we did some very good learnings under
7 NuScale on identifying re-significant elements of each
8 chapter and having meetings on those topics versus
9 chapter-by-chapter meetings. Mo?

10 MR. SHAMS: Thank you, Mike. A hundred
11 percent what you said. Dr. Brown, that is not our
12 intent at all to, in any way, prescribe how you're
13 going to meet with us, in specific one meeting or
14 another.

15 When we develop, I'll just use the
16 example, when we developed the Kairos schedule we've
17 envisioned the interaction with ACRS over a period of
18 time. Starts, depends on the maturity of a given
19 section or a give part of the application. We can
20 bring that early, we discuss it with you. It depends
21 on your interest. And then we mature as we go forward
22 in the review.

23 So this is just a representation --

24 MEMBER BROWN: Okay.

25 MR. SHAMS: -- of your interactions with

1 us.

2 MEMBER BROWN: All right. I just didn't
3 want to send the wrong message out to the public
4 relative to what was the involvement. Some people
5 expect multiple sessions --

6 MR. SHAMS: Certainly.

7 MEMBER BROWN: -- and I think that's what
8 we could expect. What you said was fine as long as
9 it's just over some time that's all.

10 MR. SHAMS: Certainly. That's the case.
11 Yes.

12 MEMBER BROWN: Thank you.

13 CHAIR REMPE: Along those lines about
14 sending the wrong message to others, the staff review
15 doesn't get completed before it comes to ACRS. There
16 is an iterative process with this Part 52 because of
17 the way chapters are submitted and things are
18 resolved.

19 And sometimes folks might even document
20 some reports that have been issued that they think
21 that ACRS review is after staff is over and adds to
22 the length of the schedule. And in fact, if you'll
23 think about what happened with part, the DC for the
24 NuScale design, we finished our last meeting and
25 issued our letter pretty close to after the staff

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 review was completed.

2 So, something else in the diagram might
3 avoid some confusions by other organizations. That's
4 just a comment to consider to.

5 MR. SHAMS: Certainly. And I'll take that
6 comment. We can add some notes to the cited document
7 to explain that this is just a sort of a, a bit of a
8 linear depiction of how this goes, but that's not the
9 way it goes. They overlap, they complement each other
10 and what have you. We can add that.

11 CHAIR REMPE: Thank you.

12 MR. SHAMS: Sure.

13 MR. DUDEK: At the very least, an
14 iterative process and a F on the meeting would
15 definitely be warranted. At least on this slide.

16 So, Carolyn, without any further ado, I
17 think we've seen the public involvement and we've had
18 discussion on these slides. And this is really the
19 relationship as we've discussed before between the
20 ESD, the SDA and the COL.

21 Just a very good overview slide and how
22 you can interchange and mix the pieces and parts and
23 the benefits of Part 52.

24 So the next slide. So this is really
25 where the rubber meets the road, in my belief, on this

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 presentation. And in the things that the staff review
2 doing new and different.

3 And I can talk all day on pre-application
4 activities because I'm a big supporter. And this is
5 something that I tell it in every discussion with my
6 applicants.

7 As Brian had mentioned in the very get go,
8 there's an ML number listed in that very first bullet
9 of pre-application and engagement white paper that
10 we've sent out to all the applicants, it was
11 originally developed and issued for advance reactors.
12 But we've read it on the SMR side of the house.

13 And as Brian has come over, he's brought
14 a lot of good learnings to us. So we're really
15 utilizing this as well as sending it out to all of our
16 applications. Whether it's GH, Holtec or NuScale.

17 And really, not only reiterating these
18 messages it's really making it a firm stance that some
19 of this stuff really is needed.

20 And the second bullet really goes to the
21 applicant's general responses. I think we've
22 discussed a little bit of that.

23 Getting good information and getting good
24 and timely responses from our applicants it just adds
25 to our effectiveness of the review. If we don't have

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 timely responses and their not quite hitting the mark
2 of where we need to go technically, then it's going to
3 take additional time. It's going to take additional
4 RAIs, or RSIs, in the pre-application realm goes.

5 Or it may necessitate us to stop the
6 review and really press pause until the applicant is
7 really able to get us something that we can bite on to
8 begin the review. Because as you remember, our
9 acceptance review states that we're able to, we have
10 enough information to be able to complete the review.
11 Or at least start.

12 And that's a higher bar than what we need
13 to start the review. So we really do go above and
14 beyond to look for holes and things that the staff has
15 questions on. And we try to get those out and on the
16 table very, very quickly.

17 MR. BLEY: This is Dennis Bley again. One
18 thing, and the ISG does talk about the lessons learned
19 from the construction permits for the NPUFs, but one
20 of the key things that was really of interest between
21 the staff and the ACRS, at the time, since mostly
22 nobody who had been involved in earlier reactor
23 construction permits were still around, in either
24 organization, was the depth and breadth that was
25 really needed in the construction permit.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 And on the reactor safety side, I think
2 when we came down was, you had to identify anything
3 that looked like it might be important for inclusion
4 in the safety analysis and identify any key knowledge
5 gaps that would need to be filled in before the
6 operating license was requested. On a combined
7 license.

8 I didn't see that particular aspect
9 spelled out, maybe it is, I might have missed it, in
10 the ISG. Is it there or have you thought much about
11 that side of it?

12 That issue of what really needs to be here
13 in the safety analysis, at the construction permit
14 stage, was kind of the key issue and we both had to
15 wrestle with back a couple years ago.

16 MR. DUDEK: Absolutely. And if I could
17 offer, Carolyn, would you take that for note and maybe
18 add that into your talking points towards the end of
19 the discussion where we're specifically highlighting
20 the ISG?

21 Would that be okay, Member Bley?

22 MR. BLEY: Again, I'm a consultant not on
23 the committee, but yes, that would be fine.

24 MR. DUDEK: Okay.

25 MR. BLEY: And I just want to make sure

1 it's there. Maybe it's already there and I might have
2 missed it in my reading.

3 MR. DUDEK: Okay. We'll try to adjust
4 that during the latter part of our discussion today on
5 the ISG. Absolutely.

6 MEMBER HALNON: Hey, Mike, this is Greg
7 Halnon. On the pre-application engagements, a
8 relatively young process back when I was in licensing,
9 but have you guys set any kind of procedure or office
10 instructor, or anything like that, that gives the
11 standard template for how those meetings go?

12 What materials to bring, who to bring and
13 what the expectations for the results of those would
14 be?

15 MR. DUDEK: So let me get started. A lot
16 of that is depicted in the pre-application engagement
17 paper that we've sent out.

18 And it also depends on topic-by-topic
19 discussions on what the applicant wants to discuss.
20 If they want to discuss ECCS system, well, we can set
21 that up.

22 And that goes to the last bullet on the
23 slide is that we have changed our thinking just a
24 little bit and tweaked it to, hey, a pre-application
25 audit on a specific topic could be very valuable. Or

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 we have a page turn it, if the applicant has something
2 that they want to submit to us, we meet with them
3 early and go through it page-by-page and answer any
4 specific questions that they have to make sure that
5 this doesn't fall flat when it comes in the door.

6 MEMBER HALNON: Okay. I'll wait and we'll
7 talk more about it, but I recall that I went to some
8 pre-application meetings and either we didn't bring
9 the right people or the NRC didn't have the right
10 people available. And it turned out to be moderately
11 effective, if not less effective.

12 I just wonder if there is any formal
13 expectations put out there yet on how to do that.

14 MR. DUDEK: So let's talk about that. And
15 that really goes to the third bullet is, what are the
16 expectations and when.

17 It allows the NRC to adequate budget and
18 resource our staff and know what work is coming in.
19 And we've really been focusing on what the applicants
20 are submitting to us.

21 The regulator engagement plans and letters
22 of intent. Both are very useful tools on, hey, what
23 do we want to discuss, when do we want to discuss it
24 and who do we need on the phone during these
25 discussions.

1 So to exactly that, that third bullet is
2 really the tool that we're using to get there. Or
3 trying to use to get there.

4 MEMBER HALNON: Okay, thanks.

5 MR. DUDEK: Mo, did that --

6 CHAIR REMPE: I'm sorry, I had a couple
7 of, or one question and then a couple of comments. Is
8 there a firm process in place for when you decide
9 whether to have ACRS review a white paper? Is it
10 always allowed?

11 You mentioned, provide us a list of
12 documents or are there some that you just decide, no,
13 this isn't worth even offering to ACRS?

14 MR. DUDEK: So, I don't have that level of
15 knowledge, but I will speak for topical reports. And
16 the fact that the committee does see all of my topical
17 reports that we review and approve. That is a
18 commitment that we've made to the committee, and I
19 think that we've fulfilled it.

20 And in fact, we just had one yesterday on
21 NuScale's building and design, right. But as for
22 white paper, I think that's really, Dan, Mo and Ben
23 can really add some insights on that piece.

24 MR. SHAMS: Thanks, Mike. So let me have
25 Ben start and I can augment.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 MR. BEASLEY: So, white papers, and I
2 will, again, get into this in my slides a little bit,
3 are really more for informal feedback. We do not, so
4 the other word is flexibility.

5 And so we want to provide applicants some
6 flexibility. And so, again, general, we do not
7 provide any kind of formal feedback to a white paper.
8 And so because of that, there is really no need for
9 ACRS to get involved.

10 But as Mike said, certainly for topical
11 reports we offer all of those to ACRS for a year
12 review if you are interested. But white papers, it's
13 much more informal, much less specific and so there is
14 not any conclusions being drawn by the, or findings
15 being drawn by the staff for those.

16 MR. SHAMS: Thank you, Ben. If I might
17 just add a little bit. So yes, exactly as Ben
18 indicated, it's an informal process.

19 We scale it up or down based on the
20 vendors interest. And so we have not really
21 identified the need, given its informal, number one.

22 Number two, just the level of information
23 being exchanged between us and the vendor, we have not
24 identified a need to come to the committee. But
25 that's not to say that we wouldn't identify that in

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

1 the future. But it would be a bit of a rare occasion
2 that we would come to you for a white paper, but not
3 impossible.

4 CHAIR REMPE: Okay, thank you. And then,
5 actually at this slide and the prior slide where I was
6 going to try to emphasize the point I raised earlier
7 about, I think the NRC Staff should consider some
8 guidance for technical and topical report content.

9 I've seen at least one applicant, and I'll
10 suspect there will be more, that their plan is to have
11 multiple reviews of topical reports. And I get that
12 the Staff thinks they've made some progress in the
13 safety evaluation that clearly says, until you get
14 data though we aren't going to approve this
15 methodology.

16 MR. SHAMS: Right.

17 CHAIR REMPE: It has been official from
18 some aspects, but then the unattended consequences,
19 that suddenly your total staff hours and your schedule
20 gets expanded. And so, maybe some sort of minimal
21 threshold is needed.

22 And the same thing with what is an
23 acceptable submittal for a COL application guidance
24 would be helpful, I think, in avoiding controversies
25 in the future.

1 MR. SHAMS: So if I, yes, if I take that
2 question on. So, for the COLA application we actually
3 do have a detailed guide. And we strive to have a
4 detailed guidance. So, Reg Guide 1.206, it lays out
5 what is needed in a COLA application.

6 For a topical report, I think you're
7 bringing a very interesting point. To what degree we
8 would provide sort of an expectation of a level of
9 detail. That's something that we need to reflect on.

10 But the point we need to offer, why this
11 is a bit challenging, because there are no sort of
12 topics for topical reports and technical reports,
13 these are just areas that a licensee decides they want
14 to improve a methodology versus an approach for doing
15 the certain analysis versus a set of data that they
16 obtain from testing. So it's broad in that regard.

17 All we would offer really is just that
18 clarity on the level of detail. Specificity and how
19 do you address the regulation.

20 So, I heard the comment and it's very
21 interesting, but I just wanted to share that. But it
22 is not, it would not be that simple to provide a
23 unified and sufficiently detailed guidance.

24 MR. BEASLEY: And I'll echo Mo's
25 observation there. One of the things we've been

1 thinking as we've had a variety of developers,
2 developers that are new to the nuclear industry, we
3 wanted to provide some flexibility.

4 You know, different, even experienced
5 reactor vendors do things differently. And so we
6 wanted to provided that flexibility for a developer,
7 a vendor to approach issues the way that they wanted
8 to and support them in that.

9 And so that would be a challenge to
10 provide some specifics for what needs to go into a
11 topical report or a white paper, with respect to
12 enabling that flexibility that we want to offer.

13 MR. BLEY: Yes, that makes a lot of sense.
14 This is Dennis again. On the other hand, maybe you
15 need something similar for yourselves so that when
16 somebody submits a topical, or wants to resubmit a
17 topical or is proposing an area where it's clear,
18 they're going to come back several times in the same
19 area to give you the flexibility to say, this doesn't
20 have the level of detail we need yet and work on it
21 some more before you submit it.

22 And otherwise, I got that same sense Joy
23 did that you could be re-reviewing similar but
24 slightly different information many times. If what we
25 saw a couple of times, continues.

1 MR. SHAMS: Yes.

2 MR. BLEY: Think about it.

3 MR. SHAMS: No, that's true. That's very
4 true. And we're seeing that.

5 One of the approaches that we're seeing
6 from a couple of different developers is they will
7 send us a white paper, get informal feedback on that,
8 get our thoughts. They'll make sure they'll advance
9 their design a little bit and then they'll come in
10 with a topical report.

11 And that will further the design some.
12 And then they'll come in later with maybe a more
13 comprehensive topical report. And so, yes, we are
14 seeing that.

15 I think what you've seen is that when the
16 applicants come in with topical reports that even
17 maybe are not as robust that they could be, we are
18 writing lots of limitations and conditions. And so,
19 again, a part of our thought is wanting to provide
20 that flexibility.

21 And if you don't give us much real
22 information then there is going to be a lot of
23 limitations and conditions in the safety evaluation
24 that we --

25 MR. BLEY: And maybe the thing you do from

1 there is, you don't come back to us until you've
2 addressed all of those limitations. Don't come back
3 every time you fix one of them.

4 MR. SHAMS: Yes.

5 MEMBER PETTI: I mean, couldn't you do
6 something like a best practices? Because you guys see
7 the topical reports, we see the topical reports and we
8 see the huge difference.

9 The disparity, frankly, from what I call
10 the legacy vendors that have been through this many,
11 many times, and the new guys who just don't know where
12 the bar is, if you could just tell them, best practice
13 is that there is data behind this model and that the
14 topical report does that. Otherwise, understand that
15 there could be a potential limitation, you'll have to
16 come back. That will take longer.

17 What are the implications of not meeting
18 the best practice, if you will, without calling it a
19 guidance and saying you have to do it that way. But
20 to make sure they understand the implication.

21 Because it's like you're getting a
22 dropper, an eyedropper at a time, instead of the whole
23 cup.

24 MR. DUDEK: So yes, I would offer many,
25 this is a perfect segue into Slide 15, which is, I

1 believe, nope, how about 16. Which really is the best
2 practices slide.

3 And I can go back to the previous slide,
4 if needed, but the best practices. And I would offer,
5 the topical reports do exactly that.

6 We have just finished a updating LIC-500
7 regarding the overall structure and how we process
8 topical reports. We have added some additional meat
9 to that guidance document on what is the level of
10 information required to accept topical report.

11 And as I think Mo and Ben discussed is, it
12 is topic-by-topic. And it is very dependent on those
13 pre-application engagements and those pre-application
14 discussions.

15 Does the staff, for the topic presented,
16 does the staff truly know what is being proposed and
17 what the applicant is asking for. Once they know that
18 and they see the technical details, then we can start
19 filling in the blanks. And we do that in the
20 technical review.

21 And as we said, we do not accepted it now
22 until we have full understanding and enough
23 information to complete the review. So we have to
24 have enough information in-house and an understanding
25 about what applicant needs to be able to move it

1 forward to completion.

2 Now, that's not to say that we're not
3 going to seek some clarification or ask a request for
4 additional information in that process. In those
5 processes. But the level of information is there to
6 process and to start with that review. And to send it
7 out to all of the applicable reviewers and get people
8 involved.

9 CHAIR REMPE: Still my --

10 MR. DUDEK: So I would offer that.

11 MEMBER PETTI: Okay.

12 CHAIR REMPE: Still, my thoughts,
13 theoretically, if there was, someone came in with a
14 method and they didn't have any data, why not say, yes
15 that method looks good, but why didn't you suggest
16 this as a white paper and we'll give you that
17 feedback. But until you have data, we're not going to
18 accept it as a topical report. Is that too drastic of
19 a response back to avoid having multiple reviews of a
20 topical report on a methodology?

21 MR. DUDEK: I don't think so at all. And
22 I think we've actually put that into practice, Mo,
23 right?

24 MR. SHAMS: Absolutely. And I was going
25 to jump in there. There are plenty of situation where

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 we acknowledge that this topic is not right for being
2 a topical reports to get a staff review and get an
3 ACRS review for it, and it better off be a white
4 paper.

5 So we've done that. And it's a great
6 advice to us and to the vendors. Yes.

7 CHAIR REMPE: And so probably we have not
8 seen that since we don't review the white papers.

9 MR. SHAMS: That's exactly right.

10 CHAIR REMPE: But I've seen --

11 MR. SHAMS: That's exactly right.

12 CHAIR REMPE: And some of the members are
13 saying, we're seeing things where it just seems like
14 you might want to be a little more restrictive even.

15 MR. SHAMS: Hey, and I appreciate,
16 certainly appreciate the point. And I think being
17 sort of operative while, I mean, the level of maturity
18 for the different topics by different vendors varies.

19 And I understand that we can establish a
20 sort of a minimum bar that everybody has to meet. But
21 also, that has to be sort of balanced with the
22 opportunity to give them flexibility to come in and
23 get some formal review and positions on some parts of
24 their methodologies. But points well taken.

25 MEMBER PETTI: I just had two more

1 questions/comments. One is this understanding of not
2 reviewing white papers.

3 And maybe I'm just going back too far in
4 history, long before I was on the Committee, but the
5 NGNP white papers that I wrote a lot of retractions
6 of, went through the full thing. Was that just
7 because DOE requested it so it was sort of not normal
8 it was out of the normal compared to what you normally
9 do with a regular application, because it wasn't even
10 a real applicant, I'm am --

11 MR. SHAMS: Sure. So, that's why I, when
12 I sort of responded I got kind of stayed a little bit
13 hedging because there will be white papers that we
14 would come to you. Depends on the topic, depends on
15 the pedigree of the paper.

16 MEMBER PETTI: Okay. Okay. No, thanks,
17 that helps.

18 MR. SHAMS: Yes.

19 MEMBER PETTI: Okay.

20 MR. SHAMS: Sure.

21 MEMBER PETTI: And then, I saw the bullet
22 on the audits and I got the sense that both sides, the
23 applicants and staff found audits to maybe have more
24 value than they thought going in and so that in fact
25 you might be doing more audits than RAIs, is that --

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

1 MR. SHAMS: So, I think that's a great
2 observation on what we've experienced recently. And
3 I think Mike and the team have been sort of sharing
4 with you, looking for ways to improve our efficiency,
5 having more direct interactions with licensees.

6 Build trust, build knowledge. Sort of,
7 you kind of cut back on a number of formal RAIs and
8 writing back and forth. So we're seeing that.

9 I wouldn't say a blanket statement that it
10 is the absolutely best approach due because there are
11 times where clarity becomes more important than just
12 being steady in the review. So you'd have to write
13 down the question such that vendor or the applicant
14 knows exactly what you're asking for.

15 So in general, they offer a great way of
16 getting information faster, but there are times where
17 we have to write RAIs to declare the clarity needed.

18 MEMBER PETTI: Okay, thanks.

19 MR. SHAMS: Sure.

20 CHAIR REMPE: And then I guess I want to
21 explore your response back on the use of Reg Guide
22 1.26.

23 MR. SHAMS: Sure.

24 CHAIR REMPE: So if a person came in with
25 a COL application and you were to accept it, then the

1 staff would have expected that they would clearly
2 define the approved methodologies and all the safety
3 related SSCs with sufficient detail that there
4 wouldn't be any questions later.

5 And that's been conveyed that they will
6 not, the staff is not going to accept any more
7 applications that are that way. Is that a true
8 statement?

9 MR. SHAMS: That is a fair statement, yes.
10 Yes, the reg guide would layout the process for
11 reviewing the application. The content of the
12 application, certainly the content of the application,
13 the regulation itself. So it's 5279 that lays out
14 what needs to come in the COLA.

15 But then the reg guide would layout more
16 of the, like lack of details if you would and what
17 we'd be looking for. So, yes, I would say between the
18 regulations and the guidance the applicant should have
19 sufficient information on what they need to submit.

20 CHAIR REMPE: And this reg guide, it
21 sounds like it's not totally done or it's being
22 updated or it's out there and the staff had that
23 guidance in the past?

24 MR. SHAMS: So, that guidance has been
25 updated back in 2007. Prior to the new reactor

1 renaissance, if you would. And that was geared
2 towards the Vogtle and the Summer approaches found.

3 I cannot speak to our design to renew it
4 now. What we're trying to do, as you all have been
5 partnering with us on that is the TICAP, ARCAP.
6 That's our new guidance, if you would, for non-light
7 water reactors.

8 And the intent is to develop that to plan
9 to deal with the 1.206. But 1.206 still stands for
10 light water reactors.

11 CHAIR REMPE: But for the non-LWRs, is
12 there perhaps some updates needed to make it more
13 clear to some of the design developers coming in?

14 MR. SHAMS: Yes. I would say probably our
15 efforts are best geared to the TICAP, ARCAP and that
16 other pieces of guidance that we're developing, as
17 Mike indicated, that the CP guidance that we would
18 use.

19 So, we're, one of the things that I wished
20 we had responded to earlier, when you asked about, how
21 do you decide which guidance to approach or the time
22 for it, we really sort of canvas all the pieces of
23 information that's out there.

24 Applications coming in, type of
25 applications, what technology is coming in and what

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

1 regulatory framework that they're coming in under 50
2 versus 52. And we tailor our efforts based on that.

3 So I'll say for 1.206 update, that would
4 not be a top priority for us. We're focused more on
5 ARCAP, TICAP because that's where we're seeing folks
6 are coming in with.

7 MEMBER BALLINGER: 1.206 has an update
8 date on 2018, not 2004 or '05, or whatever you said.

9 MR. SHAMS: I said 2007, but you're
10 absolutely right. I'm sure there are other updates
11 came along the way. But that was in my mind that the
12 main update, back in the day when we were taking on
13 Part 52.

14 MR. DUDEK: Any additional questions? I'd
15 like to focus back on the best practices and some of
16 the learnings on Slide 16 if I could.

17 So there is multiple things in our toolbox
18 in pre-application engagement activities that we can
19 utilize. Whether it's those face-to-face page turn
20 activities that I discussed earlier, which we meet in
21 the room and actually go through their submittal to
22 ensure that there is no gaps identified and that we
23 have a clear understanding of what their trying to
24 request in their topical report.

25 Also, as we've discussed, regulatory

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

1 audits are also being utilized for a lot of those
2 activities. If we see that we have a huge gap in what
3 we need or what we proceed, sometimes we write the
4 RSI. And sometimes along with that RSI, if it's
5 extremely in-depth and complex, we will open up that
6 regulatory audit to have those discussions to ensure
7 that we have an adequate understanding.

8 We've also, as we saw in NuScale, we've
9 issued regulatory gap analysis letters on any unique
10 areas of the design that we see a gap between the
11 regulations and what the applicant wants to do. We
12 found that very beneficial to at least identify and
13 get those items out on the table during NuScale.

14 And I think that we, for every new
15 application we refer the applicants to those gap
16 letters for good practices. And things that would be
17 beneficial if they undertook.

18 Also a best practice that we've identified
19 is getting early alignment and discussions on, and
20 reviewing those consensus codes and standards and
21 incorporating them into the staff guidance. And
22 really that comes down to understanding the technical
23 elements that the applicant is coming in with and
24 asking those good questions in how they relate to any
25 consensus codes and standards.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 I also note, as with anything else, we're
2 always looking at our supported documentation. And I
3 think this goes to Chairman Rempe's comments of how do
4 you pick and choose and how are you reviewing and
5 updating documentation?

6 And I think Brian has alluded to, there is
7 a lot of the regulatory guidance that we're updating
8 as part of the 50, 52 rulemaking. Dan is certainly
9 doing a lot of updating of their version of 1.206 with
10 the ARCAP and TICAP guidance.

11 The ISG is going out. We have updated the
12 guidance on topical reports in LIC-500. And that
13 should be on, that's going through management review
14 now and so on and so forth. So updating our guidance.

15 And as the last bullet states, we're also
16 taking a critical look at how we conduct some of our
17 activities during the review. Whether it's how we
18 interface with the ACRS, how we conduct the rulemaking
19 activities.

20 And when we start some of those activities
21 can pay a lot of dividends down the road. And we have
22 a lot of good learnings on both fronts. The
23 rulemaking and the ACRS during the NuScale Phase 5,
24 Phase 5 review.

25 Next slide please. Again, activities

1 supporting an efficient review. This goes directly to
2 some of the comments that we've had earlier.

3 Submission of a high quality application.
4 So, we can only do so much with what we get. And in
5 a lot of those pre-application engagements really set
6 the standard and set the expectations on what a high
7 quality application is.

8 If we get a high quality application, as
9 we've discussed many times with one of those senior,
10 more polished or old school applicants that kind of
11 know what we're looking for and how to present things,
12 things go much, much smoother. And we are able to
13 accept those applications and move them forward and
14 offer them consolidated timelines associated with that
15 and get those back out on the street and get them a
16 regulatory footprint sooner, sooner perhaps than if we
17 have a lot of questions and a lot of RAIs on a topic.

18 And as Brian said in his opening remarks,
19 using a risk-informed approach to focus the staff
20 resources. You know what, and I think we experienced
21 that during the ACRS review of the NuScale
22 application.

23 We took a look, a risk-informed approach
24 and we're brought those items in front of the ACRS,
25 and it worked out very, very well versus going through

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 an entire chapter, by chapter, by chapter. And
2 commensurate with the safety significance.

3 So I think that's a tried and true aspect
4 and something that we're trying to focus and get early
5 buy in with our applicants on.

6 Complete and timely submission of response
7 to request for additional information. This is where
8 a lot of the time of the review is taken.

9 We take the time to develop a question
10 that works with the gap that we see in whatever we're
11 reviewing, whether it's a topical report or COL or
12 design certification or an ESP we send up, per our
13 processes of request for additional information.

14 And it really is incumbent upon the
15 applicant to understand, first of all, it's incumbent
16 upon the staff to develop a high quality RAI and
17 really get down to the crux of the issue and what is
18 the safety concern with what I'm asking.

19 And then it's incumbent upon the applicant
20 to request a clarification call if they don't
21 understand what the staff is requesting. And then
22 provide a response in a timely and high quality manner
23 so that the staff can complete that review and add
24 that input back into their safety evaluation report.

25 The fourth bullet is tracking the process

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 of highly challenging issues. That's something that
2 we utilize very, very well during the NuScale review.

3 There were a lot of new things that we
4 hadn't seen before. So, what does any good engineer
5 do, they make a list. We make a list and we start
6 tracking what those highly challenging issues are.

7 How we're progressing, who's in charge of
8 them and what discussions have, we've had so that we
9 can easily pass that list to management to help us
10 facilitate and push those communications and those
11 issues forward if we're being, we're not gaining the
12 alignment on a timely or efficient manner. Yes, sir.
13 Yes, Vesna?

14 MEMBER DIMITRIJEVIC: Sorry, I'm looking
15 for my microphone.

16 MR. DUDEK: Go ahead.

17 MEMBER DIMITRIJEVIC: So, I'm very curious
18 here. Basically, you know, sometimes this safety
19 significance meaning, we know that something is safety
20 significant when we see it.

21 But how do we here, to use this risk-
22 informed approach, how do we determine the safety
23 significance of that issues?

24 How do you visualize those safety
25 significance would be determined?

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

1 MR. DUDEK: So maybe Mo and Brian can help
2 me, but I think it starts off with SSCs that are
3 highly risk and we compare it to a current operating
4 plant. The ECCS. Some of those high profile systems
5 that we all know that are integral to a plants startup
6 and shutdown operations.

7 MEMBER DIMITRIJEVIC: Yes. And that's
8 exactly what I meant. We all know what is safety
9 significant when we see something based on our light
10 water reactor experience, right?

11 But even then, that's not always the case
12 because in many cases it's depending of the
13 contribution, you know. The lack of power could be
14 more significant than ECCS. I mean, it's all
15 depending of the design and things like that.

16 And then you're meeting totally new
17 designs that this is totally out of the bat. So, you
18 know, and we have idea when we discuss the, so we are
19 not really using PRA, right.

20 And we discuss other approaches to rank
21 the term of safety significance. And I just wonder
22 how do you propose to define this in your actions?

23 MR. DUDEK: So I think, and Mo might be
24 able to help me, I think that goes to engineering
25 judgement and what we know of the current operating

1 fleet and what's risk significant. And then we parlay
2 that into our new reactor designs and we add that to
3 the HCIs and the first of a kind design features that
4 we identify in documents.

5 But if this applicant comes in and they
6 don't have an ECCS system, that goes right on the
7 list. Holy smokes, we've never seen this before, how
8 do we deal with this. So we start those engagements
9 early.

10 MR. SHAMS: If I may offer additional
11 thoughts, I think Mike said everything spot on. I
12 think it's a combination of a number of things.

13 So, if we're in a safety case that's made
14 through a PRA, per say, or for instance, then we have
15 a tool to guide us and guide our attention to the risk
16 significant attributes of the design. If the safety
17 case is made through a different approach, like a
18 maximum hypothetical event or such, then the focus is
19 on how bounding is that event.

20 The point is well taken. We don't have
21 the particular experience that we have or the length
22 of experience that we have with light water reactors.
23 So, that for a while is going to result into being
24 potentially more conservative, seeking more
25 information, focusing more on areas until we learn

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 that they're not particularly that significant.

2 So there is a learning part of it that we
3 just all have to endure. And to the best that the
4 tool is going to inform that learning and it expedite
5 that learning process, I think we're all striving to
6 do that.

7 MEMBER DIMITRIJEVIC: You know that,
8 lately I have becoming, you know, most of my life I
9 work with risk involved application, but lately I've
10 becoming very sensitive because this term is now
11 becoming used all readily, already used without really
12 basic point of the risk informed application system to
13 understand the risk we are talking about.

14 So, you know, without defining what risk
15 we are talking about we cannot have a risk-informed
16 applications, you know.

17 MR. SHAMS: Yes.

18 MEMBER DIMITRIJEVIC: And then it becomes
19 a sort of, you know, overly used in situation when we
20 don't really have a, you know, the current risk to
21 which is the PRA. And we may have a totally different
22 risk metrics.

23 So, I just would like to see, sometimes
24 when we are discussing, that's okay, these things
25 cannot be solved. As you say, we will learn as we go.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

1 That's totally understanding.

2 But I would like that there is some list
3 of the things we track. As I say, neither here or
4 there. You know, and how.

5 We didn't decide of them, we are using
6 these terminology but right terminology is challenging
7 because of blah-blah, blah-blah. And there is some,
8 you know, like dictionary of the other things which we
9 don't really have a precise definition and we don't
10 know enough in this moment to discuss it.

11 Because you just said, they say, oh fine,
12 good risk-informed, we're going to decide that we're
13 going to rank, and then this is the number, this is
14 more than a streamline process, we're going to use
15 risk-informed approach, we're going to use basic
16 safety significance, which we may not know about that,
17 these.

18 So it should be kind of, you know, a
19 column there saying that the issue with that could
20 mean blah-blah, blah-blah, you know. I just wanted to
21 make this comment because I'm getting very sensitive
22 that this is going to be risk-informed, it's going to
23 streamline and everything is going to be fine.

24 MR. SHAMS: Great comment and feedback for
25 us, thank you.

1 MR. DUDEK: Yes. Point well taken, Member
2 Dimitrijevic. So bear with me, four more bullets
3 about how we're continuing to support and promote an
4 efficient review, and then we're going to dig in on,
5 going to turn it over to Ben to dig in on white papers
6 and topical reports.

7 And really, supporting an efficient
8 review, you know, it's that fourth and last bullet.
9 Early coordination with everyone, whether it's the
10 applicant, technical reviewers, technical management,
11 senior management on any of those highly challenging
12 issues get early understandings to everyone. Up, down
13 and sideways.

14 And even with the legal staff. So getting
15 some of the legal reviewers onboard for these highly
16 challenging issues and things that we haven't seen
17 before, first of a kind items, has proven very, very
18 useful. We've brought them into a lot of the
19 discussions. And they've guided our path forward on
20 multiple things.

21 Third to last bullet. I think we've used
22 pretty extensively, and discussed today, how we're
23 using audits just a little bit differently in the pre-
24 application forums. And it can be to review things
25 that aren't exactly clear or first of a kind. You

1 know, anything that we want to dig in on a little bit
2 further we've been opening those pre-application
3 audits on.

4 We've even been using them more, even more
5 effectively during our review to dig in on key items
6 and get those answers. In concert with asking, those
7 requests for additional information.

8 In order to do that in audits, each
9 applicant has been developing an electronic reading
10 room so that they can put proprietary documents and
11 non-public documents up in those reading rooms and we
12 can read that information. That's the only thing that
13 we can do for it. We can't copy it, we can't download
14 it because it is the applicant's documents.

15 We've been using reading rooms pretty
16 effectively during audits to review whether it's
17 predecisional information, or that proprietary
18 information. And to gain additional insights during
19 those evolutions.

20 MEMBER HALNON: Hey, Mike, this is Greg.

21 MR. DUDEK: Sure.

22 MEMBER HALNON: Who's controlling the
23 reading rooms now, is that a vendor that the licensee
24 sets up or you guys?

25 MR. DUDEK: Oh, we do not control it in

1 anyway, shape or form, it's the vendor's reading room.
2 They allow certain members access to certain
3 documents. And you only have reading rights.

4 MEMBER HALNON: Okay. So there is no FOIA
5 or anything like that issues at all then?

6 MR. DUDEK: We do not have any of that
7 information in our possession, correct.

8 MEMBER HALNON: Okay, thanks.

9 MR. DUDEK: And then the last bullet is
10 something that Dan is trying very successfully, and
11 it's that use of core team review approach.

12 Having, and the concept behind that is,
13 having the same people review the same items for other
14 applications so that you're getting a consistent
15 technical message out for similar topics. So that has
16 clearly demonstrated benefits and has value as we move
17 forward. So that's something that we're evaluating on
18 an even greater scale.

19 MR. BLEY: That has a lot of value, and in
20 the past the Committee has criticized areas where we
21 see two very different level of review as you go from
22 application to application. I think that's a great
23 step.

24 MR. SHAMS: Thank you. And that's our
25 vision for that approach is to provide that

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 consistency. To be able to also have a degree of
2 scalability.

3 Looking at the technology, it's maturity,
4 it's novelty of the safety features. So we find that
5 approach one of enabler to do that scalability we're
6 looking for.

7 But I also wanted to convey that it is not
8 an approach of isolation because there are so much
9 expertise around the agency that we need to leverage
10 in a number of areas. So it is one that combines
11 both.

12 The ability to concentrate and integrate
13 the review within a group to have that consistency and
14 the focus, but also one that reaches out to the
15 subject matter experts around the agency to support
16 the review in a broader way. So we're looking forward
17 to see how that, how well that's going to work on a
18 high risk application.

19 CHAIR REMPE: Mike?

20 MR. DUDEK: Joy.

21 CHAIR REMPE: I think we're going to
22 switch topics to white papers, and then there is going
23 to be reviews of topical reports and then the Kairos
24 specific discussion. And we'll not going to get all
25 of that done, clearly, because we're past 3:30 for the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 scheduled break time.

2 Is this a good time to have a break or is
3 the white paper review discussion pretty quick and
4 you'd like to get through a couple more topics before
5 we have a break?

6 MR. DUDEK: I mean, it's completely on
7 your discretion, Chairman Rempe, but yes, I think this
8 would be a good break time because I will be switching
9 over to Ben Beasley and he will be really digging into
10 the white papers topical reports.

11 And it's not specifically how we're doing
12 Kairos, it's, we're highlighting some of the process
13 improvements and ways we're advertising how we're
14 doing Kairos. So a little bit different twist then
15 just how we're doing the Kairos review.

16 CHAIR REMPE: Okay. So I guess let's go
17 ahead and take a break and come back at 2:00 p.m.

18 We might be going late today, and is there
19 somebody in your staff that's going to have to take
20 off or are we just going to hold off on the
21 construction permit ISG if we can't get to the topic?

22 MR. DUDEK: Well, that's a perfect
23 question. The Committee has come to us and requested
24 information on the ISG. A briefing on the ISG. So we
25 were going to start those discussions today and then

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 gauge your interest and your level of, the level of
2 activity in possibly giving you a second briefing.

3 But if, again, at the end of the time that
4 discussion is not able to be had today, we can
5 certainly work with Mr. Snodderly and Ms. Burkhart to
6 provide a more fulsome briefing on the ISG at a later
7 time.

8 CHAIR REMPE: So, again, your story is a
9 little different than the way I heard it because it
10 was like a spontaneous addition and we had planned to
11 discuss this based on what Member Bier had looked at
12 with her review and so I thought this was a staff
13 initiated advanced discussion, but we'll do what we
14 can today and we're flexible either way.

15 But let's go ahead and take a break. And
16 we'll come back at 4:00 p.m. So that will give us 12
17 minutes for a break, okay, everybody?

18 MR. DUDEK: Okay.

19 CHAIR REMPE: Thank you.

20 (Whereupon, the above-entitled matter went
21 off the record at 3:48 p.m. and resumed at 4:00 p.m.)

22 CHAIR REMPE: I have it's 2 o'clock, and
23 so let's go back on the record. And we'll hear about
24 white papers, right?

25 MR. DUDEK: That's correct. Mr. Beasley?

1 MR. BEASLEY: Yes. Good afternoon. So I
2 am Ben Beasley. I am a senior project manager in the
3 licensing branch in the division of advance reactors
4 and non-power production and utilization facilities.

5 And so, here starting Slide 18, we'll talk
6 about white papers. The advance reactor policy
7 statement encourages early engagement by reactor
8 developers. And we've been talking a lot about pre-
9 application interactions.

10 There is also a regulatory roadmap for
11 non-light water reactors that was put out in 2017
12 which describes various feedback options and various
13 reviews. Feedback options include verbal exchange,
14 written correspondence, safety evaluations.

15 Typically for white papers we will have a
16 discussion and agreement with an application on the
17 scope of view of the white paper and the type of
18 feedback that they want.

19 So an applicant may submit a white paper
20 to us seeking informal feedback, and that can allow us
21 to look at a preliminary design. We can focus on
22 technical issues related to the safety of the design.
23 Whatever feedback the applicant is seeking.

24 And again, it's informal so our response
25 does not constitute an agency position or provide any

1 finality or back fit protection, anything like that.
2 The objective of a white paper is to increase the
3 applicants understanding, for them to be able to
4 explore problems or potential design support, design
5 specific decisions.

6 And we don't have any internal guidance or
7 specific requirements for the development or the staff
8 review of white papers. We've given feedback on white
9 papers through meetings, through letters. We've even
10 given feedback through a joint report with the
11 Committee and the Nuclear Safety Commission.

12 So, it's a, I mentioned earlier, a lot of
13 flexibility in this process. We have had an applicant
14 ask for more thorough feedback of a white paper and so
15 we've pushed back on that a little bit.

16 The intent is to keep white papers
17 informal, but again, wanting to be flexible we can
18 work with an applicant to give them the type of
19 feedback that they're after, that's really going to
20 help them to mature their design. And staff usually
21 spends about a hundred hours or so in that ballpark
22 reviewing a white paper.

23 So next slide please. So the benefits of
24 white paper, I've just listed some here. It's
25 preliminary feedback in response to the applicant

1 request, so they will ask us about licensing
2 approaches.

3 They'll talk about the content and the
4 format of their application. What regulations may be
5 applicable to their specific design, what codes and
6 standards they're interested in using.

7 Qualification strategies, methodologies,
8 testing plans, are those sorts of things. We've
9 gotten white papers for all of these. And it is
10 helpful to be providing the applicant's feedback on
11 that. It was very useful for them.

12 And it is very useful for us as well. We
13 gain a good understanding, a good knowledge of their
14 design and the possible licensing approaches that
15 they're going to pursue.

16 One other benefit is, and that's been
17 mentioned before as well, is just that as look at
18 white papers and topical reports and gain that
19 knowledge, that gives us the opportunity to have a
20 more efficient and a shorter review once an
21 application is submitted.

22 So next slide, Carolyn. So the
23 relationship between white papers and a licensed
24 application. Hopefully an applicant tells us in their
25 regulatory engagement plan what their plans are for

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 white papers and topical reports.

2 Most of them do, but sometimes their
3 efforts are fluid and they don't spend the time
4 updating their regulatory engagement plan. But that
5 is certainly useful for us for planning purposes.

6 And as I mentioned, of course we provide
7 feedback to the applicant, which is useful for them in
8 developing their application and maturing their
9 design.

10 It's very dependent on the topic of the
11 white papers. Some things are just, I'll say
12 atypical, where they have some design features, some
13 novel approach and they just are interested in our
14 thoughts on that. And so that works well. Again,
15 that's informative for us as they're, just so that
16 we're aware of what possible licensing approaches they
17 might pursue.

18 It supports their ability to assess
19 different alternatives, and make progress on their
20 design. And it helps us to prioritize our review.
21 Prioritize our preparations for their application.

22 And as we've mentioned a couple of times,
23 white paper feedback is informal. It provides less
24 specificity and less regulatory certainty than topical
25 reports.

1 MEMBER HALNON: So they, Ben, this is Greg
2 Halnon. What is the form of feedback you give, is it
3 emails, verbal, both? Is it written?

4 MR. BEASLEY: Yes.

5 MEMBER HALNON: What's the form?

6 MR. BEASLEY: Yes, we have done all of
7 those. So we've had discussions in meetings, public
8 meetings. And the written documentation is the
9 meeting summary of that. We have written letters
10 back, we have written emails back.

11 As I mentioned, we even did a joint report
12 with SNSC. So it merely is varied. It's really work
13 they're interested in.

14 If they're trying to keep their budget
15 low, I mean we, I said that we generally in the
16 ballpark of 100 hours, we've had some white papers
17 where they ask us to keep it less than 50 hours. And
18 so there is not really time to write them much of a
19 letter in that, and so we would do the review and then
20 hold a meeting with them and give them our feedback in
21 the meeting.

22 MEMBER HALNON: Okay.

23 MR. BEASLEY: Mo?

24 MEMBER HALNON: When the industry writes
25 a letter through NEI, is it the same way as with an

1 applicant?

2 MR. BEASLEY: So I'm going to have to
3 defer to Mike maybe. I have not dealt with any white
4 papers from NEI. I would presume it is a similar
5 process that we would do the review, to the extent
6 that NEI would like, in order to support their
7 efforts.

8 Mike or Mo, any other insights on that?

9 MR. SHAMS: Yes, let me chime on this,
10 Ben. So if I may just sort of highlight something
11 that Ben said that was important.

12 So our response to white papers is
13 actually neither, and is intended to be flexible to
14 adjust to the vendor's budget. What they would like
15 to reinvent it, if you would, for that purpose.

16 To be able to, that scale it up or down
17 based on the level of effort they want us to spend.
18 Whether it's a meeting, a little bit more than that.
19 So that's kind of what Ben was reflecting on.

20 To the second part of the question about
21 what you do with an NEI, it depends on what process
22 that paper is coming in. If it is a, if it is a
23 rulemaking process then it becomes part of the
24 rulemaking. That's a set of comments that we would
25 consider.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 If it's a methodology that they're looking
2 for us to endorse, then that's a different approach
3 maybe. We would do a fee waiver for that. If it's
4 something that we actually needed it and it's going to
5 support the guidance. So it's going to depend on what
6 process it shows up in.

7 MEMBER HALNON: Okay. All right, thanks.

8 MR. SHAMS: Sure.

9 MR. BEASLEY: Ben. So we're ready for the
10 next slide. Slide 21. So this is the beginning of
11 topical reports.

12 An applicant can submit a topical report
13 for review and approval that contains information
14 about anything they want. Reactor, SSCs, a safety
15 topic, a methodology.

16 Non-LWR applicants commonly submit a
17 topical report to us outlining which regulations they
18 believe are applicable to their design. And also what
19 they are proposing to use for their principle design
20 criteria.

21 A topical report may reference technical
22 reports that provide results of researching testing
23 for analyses, which can then be used to validate
24 computer codes, computer models. Or other information
25 for the application.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 And I'm going to make the distinction here
2 between the topical report and a technical report. In
3 the regulatory roadmap the distinction is that the
4 technical reports are for staff information. We don't
5 provide feedback on them.

6 We review them, we study them because we
7 want the material in them. We're interested in the
8 information provided. But it's not generally given to
9 us for, well, it isn't given to us for feedback. So
10 feedback would be through the white paper or through
11 a topical report.

12 Now, Mr. Halnon earlier had asked about
13 meetings, pre-application meetings. We really have
14 not described that, discussed that in the pre-
15 application white paper that was referenced earlier.

16 The meetings tend to be more informal in
17 that their specifically asking for feedback in
18 meeting, you know, staff is going to be hard pressed
19 to consider something presented by an applicant and
20 give feedback immediately.

21 Certainly we can discuss a variety of
22 things in pre-application meetings, but what
23 regulatory approaches makes sense, stuff like that.
24 You know, what the guidance is asking for.

25 But the pre-application meetings are not

1 something that we have seen a lot of activity on with
2 respect to that being a source of information exchange
3 or source of information for the staff.

4 So on the next slide.

5 CHAIR REMPE: Excuse me.

6 MR. BEASLEY: Yes.

7 CHAIR REMPE: I took a brief look at this
8 LIC-500 and in addition to my comment earlier about
9 you might want to think about talking about a minimal
10 level of detail, there was another point that we
11 raised in our NuScale lessons learned letter about the
12 importance of having the topical reports approved
13 before we looked at chapters that used the
14 methodologies.

15 And that happened with the NuScale example
16 where we were reviewing chapters on transient and
17 accident analyses that relied on the methods before
18 the methods were approved. And so this is something
19 else you might want to mention in the report.

20 And I didn't see that in this LIC-500.
21 But maybe I missed it.

22 MR. BEASLEY: Right. Very good point.

23 MR. SHAMS: Yes, it probably isn't. And
24 I certainly appreciate the comment. It probably
25 isn't. And I think that would really be captured,

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

1 which I believe it is, under lessons learned from
2 looking at the NuScale review as a whole.

3 It's just, to kind of control the time and
4 such, application wanted to get a particular
5 methodology approved, it really is just a case-by-
6 case. It depends.

7 But to your point, it is far more
8 beneficial to have done the methodology approval first
9 before referencing in an application. So certainly
10 that's a great point.

11 MR. BEASLEY: Yes. Absolutely. So move
12 on to 22 here. So, just in general, for topical
13 reports we spend in the ballpark of maybe 500 to 1,000
14 hours on those. So it is certainly an order of
15 magnitude, greater review than white papers.

16 The benefits to the applicants is that
17 they get early review and feedback on those topics
18 from us. And as well, if ACRS chooses to review the
19 topical report and the safety evaluation, then the
20 applicant is getting the benefit of your feedback as
21 well.

22 And so that is a valuable tool for the
23 applicants. It does improve the efficiency of the
24 licensing process by allowing us to see the
25 methodologies, their designs, they're operational

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

1 requirements before they come in with an application.

2 And of course it does give us a lot of
3 efficiency if, when they submit those applications
4 that we've already reviewed it and have a safety
5 evaluation written with some limitations and
6 conditions that can be referenced in their
7 application.

8 And this point, the third bullet is
9 similar. Just that it facilitates some regulatory
10 certainty on those methodology designs that are
11 referenced.

12 One of the big advantages, as we get into
13 some of the more advanced designs. Like we're looking
14 for the right adjective there, but the further out
15 designs is early identification of potential policy
16 issues.

17 They can also provide the technical basis
18 for a specific licensing action. And it's used
19 extensively for obtaining our findings, our thoughts
20 on the proposed design features or analysis methods or
21 whatever the topic of the report is looking in to.

22 MEMBER KIRCHNER: Ben?

23 MR. BEASLEY: Yes.

24 MEMBER KIRCHNER: This is Walt Kirchner.

25 MR. BEASLEY: Yes.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

1 MEMBER KIRCHNER: Turning back to
2 technical reports, often the vendors will have
3 technical reports that they will include as part of
4 the SAR, right?

5 And then it becomes part of the licensing
6 basis. At that point then you would probably at least
7 look at the technical report as part of your review of
8 that particular chapter?

9 MR. BEASLEY: Yes. And it's, I mean, I
10 didn't mean to imply that we don't look at the
11 technical reports --

12 MEMBER KIRCHNER: Right. I knew you
13 didn't.

14 MR. BEASLEY: Right. But it was whether
15 or not we provide feedback on them. We're not writing
16 a safety evaluation for the technical reports.

17 MEMBER KIRCHNER: Okay.

18 MR. BEASLEY: But yes. When it comes in
19 as part of the application, then yes, it is providing
20 basis for our findings in the application review in
21 the safety evaluation.

22 MEMBER KIRCHNER: Right. But then it has
23 no generic applicability, it's just case-by-case as
24 it's cited, right?

25 MR. BEASLEY: Right. That's correct. Go

1 ahead. I think we're ready for Slide 23. The
2 relationship between topical reports on a future
3 application.

4 So this is similar to the white paper.
5 Usually the applicants tell us about their plans for
6 topical reports in a regulatory engagement plan, which
7 is very useful for us to, for planning purposes, to
8 prepare a team to be available to review the topical
9 reports.

10 The staff findings are, can be referenced
11 because we have written a safety evaluation. The
12 findings can be referenced in a license application.

13 And of course the conditional, the
14 limitations and conditions are expected to be
15 addressed when we are reviewing a specific
16 application.

17 And in a topical report having a safety
18 evaluation will certainly provide more specificity and
19 more regulatory certainly than white papers.

20 So that was the last slide I had on
21 topical reports. I know I've probably talked a little
22 fast. Any questions on topical reports?

23 And some of this is not new to you.
24 You've been reviewing topical reports for us for quite
25 a while.

1 MR. DUDEK: And I just wanted to add that
2 for Chairman Rempe that her identified lessons
3 learned, we have absolutely captured that as part of
4 the NuScale review. To complete the topical reports
5 before they come to, the SER comes to the full
6 committee. So yes --

7 CHAIR REMPE: So, I was going to ask you
8 in the next slide rather than now, but since you've
9 brought this up. It says it's going to be issued in
10 early 2022. I'm real curious about when it will be
11 issued, and if you can give us any other heads up of
12 what all is in your lessons learned report?

13 MR. DUDEK: It has not been approved, it's
14 still going through management review. I believe it's
15 sitting on Rob Taylor's desk.

16 So we are hoping that that's going to be
17 completed and signed out in the near term. And when
18 it does, we will interact with Mr. Snodderly to see if
19 Committee would like to receive a briefing on that.

20 CHAIR REMPE: I would like to see a copy
21 of it, whether we get a briefing or not. I think it
22 would behoove us to be aware of what's in it.

23 Dave, did you have a question? Your hands
24 up.

25 MEMBER PETTI: Yes. The regulatory

1 engagement plan, I know ACRS usually doesn't review
2 that, doesn't get to see it, but it might be helpful
3 when you get to some of these advance designs, at
4 least I have personally experienced in Kairos, as the
5 lead for the ACRS, is that the topical reports came
6 in, in the exact opposite order, technically, as I
7 would have expected.

8 And it may be really hard to review it,
9 because you only saw, there were three topical reports
10 that were all sort of highly interrelated, and reading
11 one without knowing what the other two said made it
12 difficult. And I'm just trying to figure out if there
13 is something there that we could avoid inefficiency,
14 if you will.

15 MR. DUDEK: So I would offer, and I'll
16 take a first stab at this is, a lot of the information
17 that the applicants have been provided in those
18 letters of intent, or those regulatory engagement
19 plans, is very proprietary and has not been actively
20 shared outside of the people that need to know it.

21 And they have been keeping very close to
22 the best on the names of the topical reports, when
23 they're being submitted, and even the timelines. So
24 I've been struggling myself in trying to get that
25 information in-house on, to get a full schedule and a

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 full idea of when things are coming in and what's
2 coming in.

3 MEMBER PETTI: Yes.

4 MR. DUDEK: So I share your concerns, but
5 yes, those have been submitted in a proprietary
6 format.

7 MR. BEASLEY: And just from my experience,
8 as Mike said, they do keep them pretty close to the
9 vest. It's their business plans and so they consider
10 it propriety and ask us to treat it as such.

11 But certainly, you know, your point is
12 good. And I think you've shared that with us before.
13 Just the order of the topics was kind of reversed of
14 what would be expected. And that's something that we
15 can look out for.

16 We typically don't, applicants don't
17 typically ask for feedback, although we do interact
18 and we do discuss the regulatory engagement plans with
19 them. We typically don't provide them any kind of
20 formal feedback, but certainly that's something we
21 should watch for and can do.

22 CHAIR REMPE: I just was hoping we'd see
23 other proprietary information. Maybe don't have a
24 meeting on it, but to not let the cognizant ACRS staff
25 member be aware of the whole plan is, and it sounds

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 like, Mike, you're not even seeing their engagement
2 plan?

3 I mean, is it something the staff limits
4 more tightly than other things with the proprietary
5 information?

6 MR. DUDEK: So I'm still working on
7 getting those for all three of my applicants.

8 CHAIR REMPE: But they submit it to NRC,
9 but you're not allowed to see it?

10 MR. DUDEK: I am allowed to see it when it
11 comes in, yes.

12 CHAIR REMPE: So it's just it hasn't come
13 in. So once it's come in, couldn't it be shared with,
14 in this case, Dave is overseeing the Kairos one,
15 right?

16 MR. DUDEK: Yes. We can coordinate that
17 with our management and try to set expectations on
18 sharing that. Mo?

19 MR. SHAMS: Yes, let me dig that. So I
20 certainly appreciate the desire to look at this
21 information. And I don't think we really have any
22 secrets here that we wouldn't share with the
23 Committee, per say.

24 But just, we're looking at these documents
25 as management documents. We have many of these tools

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 that we run the reviews by. So to the extent that
2 it's relevant to an area that you all are reviewing or
3 interacting with us on, we certainly, we would share
4 it with you.

5 But these are just documents that are
6 influx that the vendor offers to us at their
7 discretion. It is not something that we ask them to
8 do. So, just as a management tool.

9 So to whatever degree that supports your
10 review, we can see how we can support in that regard.

11 MR. BEASLEY: And yes, as Mo said, we're
12 primarily using it for planning purposes for resource
13 expectations. These reg engagement plans are very,
14 very light on any technical information.

15 They may give us the title of the topical
16 report and the quarter in which they expect to send it
17 and that may be all they tell us. So there is no
18 technical depth to them at all.

19 But certainly there is no reason, I don't
20 think, that we couldn't share it with staff as long as
21 you protect the proprietary aspects of it.

22 MEMBER PETTI: So the other concern I have
23 is, as we're going here, you're going to talk about
24 these cross-cutting areas that should be looked at in
25 more detail. And I've already been asked, what's the

1 Committee want to see on Kairos.

2 Well, what I really don't want to have
3 happen is what happened in NuScale where there's still
4 a topical report out there that's dragging along and
5 we're already starting into the CP application. So,
6 if you just had, if you have the full picture in your
7 head it just would obviate that sort of concern.

8 MR. SHAMS: I think that's a fair
9 question. We should have the ability to provide this
10 information. Whether it's directly that the
11 engagement plan itself or a synopsis of it that sort
12 of relates to parts of their review.

13 So we should be able to support that.
14 That is not too much to ask.

15 MEMBER PETTI: Yes.

16 MR. SHAMS: And thank you for asking that
17 question. Yes.

18 MR. BEASLEY: So, the list of documents on
19 this slide, you're familiar with all of these. We've
20 talked about the light water reactor, CP ISG. We
21 talked about the NuScale lessons learned, we've talked
22 about TICAP and ARCAP.

23 The staff white paper on the applicable
24 regulations to non-light water reactors, that was
25 developed in conjunction with OGC, and has been very

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 useful for the industry for the applicants.

2 The ISG on right sizing environmental
3 reviews is very important to making these reviews
4 efficient and timely. And of course Reg Guide 1.232
5 on design criteria for non-LWRs and 1.233 on the use
6 of the licensing modernization project are very
7 important.

8 So, next slide please. So more process
9 enhancements. So we are working, we're continuing, we
10 have been working for a few years on a streamlining
11 our safety evaluations.

12 One of the things we're doing now is we're
13 taking out the back and forth on RAIs and just keeping
14 the information from the responses that is supporting
15 the basis for our decisions.

16 We're looking to improve the quality and
17 the readability of the SER. We're emphasizing that we
18 need to be writing in plain language. We want to
19 focus on the basis for our decisions and not be
20 providing lots of detailed information or history or
21 that type of thing.

22 And we've also alluded to a new review
23 process. We're referring to it as the flexible review
24 process. It does support the generic master schedules
25 that were developed for the nuclear, NEIMA, Nuclear

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 Energy Innovation and Modernization Act.

2 And then one of the other things we're
3 focusing on in a flexible review process is to try to
4 get early interactions with you. And through those
5 early interactions that will support us focusing on
6 specific technical areas that you're interested in.

7 So I think we're ready for the next slide,
8 which is comparison of the different review models.
9 So this one says the Kairos pilot model, it is our
10 flexible review model. And we are piloting it on the
11 Kairos Hermes application.

12 The division has proposed this approach
13 because it is quicker. Being able to review an SER
14 without any open items for us, for management, for the
15 attorneys, for you is a more efficient process. It is
16 a quicker process.

17 And so that's why the, why we did that
18 with the flexible model. And that makes it comparable
19 to the four phase model that's shown in this table.

20 For the different milestone groups in the
21 flexible model, the draft safety evaluation is where
22 the technical reviewers will be evaluating the
23 application for compliance with the requirements. And
24 they'll be composing their input for the safety
25 evaluation.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 Then any holes, questions that they have,
2 that's addressed in SER completion where we will work
3 the RAIs and audits to get any additional information
4 we need and close those gaps in the safety evaluation.

5 So the responses to the RAIs and the
6 audits help us complete the review and complete the
7 documentation, which is in the safety evaluation
8 report. And that roles into the advance safety
9 evaluation.

10 During that milestone group the project
11 managers and the lead technical reviewers on the
12 review team assemble the entire safety evaluation.
13 They check it.

14 Check the inputs that's been received from
15 all the various technical reviewers, assemble it and
16 edit it. Check references. It gets a tech edit.
17 Those sorts of things.

18 And then once that advance SER is pulled
19 together it is given to the managers to review and
20 given to OCG for their review. So once we have the,
21 once the SER approval milestone group is finished we
22 have the approved SER which would then be made public
23 an would be promptly provided to ACRS to support your
24 full review.

25 And there is, two or three slides from now

1 I'll show you my intent for what we want to do on the
2 Hermes project. This milestone group schedule shows
3 that you get a, after the whole SER is assembled and
4 reviewed and able to be made public, but we do want to
5 engage you much earlier. And so we'll talk about that
6 in a couple slides.

7 But then after your review staff will make
8 any additional changes that we need to. And produce
9 that final version of the safety evaluation report.

10 MEMBER KIRCHNER: Ben?

11 MR. BEASLEY: I'll pause here. Yes?

12 MEMBER KIRCHNER: Yes, thank you. This is
13 Walt Kirchner. Well, this Kairos model, pilot model,
14 okay, I get it, but it implies there will be no RAIs?

15 MR. BEASLEY: No. The RAI portion of the
16 process is in milestone group two, SER completion. So
17 yes, we would certainly be having RAIs, we will be
18 having audits to address additional information needs.

19 The draft SER stage, the milestone group
20 one, is where the reviewers are conducting the
21 majority of their review. And our expectation is that
22 they compose safety evaluation input.

23 But obviously that input is going to have
24 some, they might have some additional information
25 needs. It's going to have gaps in it. And so that's

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 what's addressed in milestone group two through
2 audits, through RAIs, is closing those gaps. Filling
3 those holes.

4 MEMBER KIRCHNER: I just, personally I
5 found this confusing. Or the implication, not what
6 you just described. It's not captured.

7 I mean, basically it's the four phase
8 approach in the middle, you just subdivided A, B and
9 C into steps, I supposed.

10 MR. BEASLEY: Well, so we didn't, what we
11 did when we came up with the flexible review process
12 was we started from scratch. What's going to work
13 well for us.

14 And there were a couple of nuance things
15 about the four phase schedule, the six phase schedule
16 that had kind of constrained the project managers in
17 NRO. And so they were the ones, it was NRO project
18 managers that were taking what they had learned in
19 managing projects for the large LWRs and putting
20 together this process.

21 And it's flexible. We're using different
22 tools for planning and managing the project, for
23 tracking it. And so it's, a lot of the flexibility is
24 for us, it's for the project managers.

25 As far as other people, they may not see

1 the, it's not obvious what the differences are going
2 to be. And because they're not great. Like you said,
3 it is very similar to the four phase schedule.

4 MR. SHAMS: It has been, and if I may just
5 add a little bit. So as we were designing this
6 project, I would not look at this also as a revolution
7 but rather as more of an evolution a bit.

8 But the focal point is, we try to
9 emphasize the SER and the SER development as the
10 products from the staff. That's where our focus is.

11 And as we kind of discuss a little
12 earlier, we're considering the scalability of our
13 reviews and what we need to do. And in that regard,
14 there are reviews that maybe RAI has become less of a
15 tool, and maybe through audits we get all we need.

16 There are reviews also where perhaps the
17 review itself is, or the application is fully complete
18 and we don't need to do an SER with open item.

19 So we did, we wanted to de-emphasize these
20 particular, if you would products that may or may not
21 be relevant to a review given its scale and
22 complexity. So that's why the new terminology, again,
23 it's not intended to be a revolution, but it's
24 intended to be just focused on the SER and the SER
25 pilot.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 With that, there will be a use of RAIs if
2 necessary versus audits. There will be items that are
3 open that needs to be closed. So that was our intent
4 of the terminology that we used.

5 CHAIR REMPE: Dave, did you have your hand
6 up?

7 MEMBER PETTI: Yes. Two questions, or
8 points. I think Kairos is in the chute, it's the
9 right item to model as a pilot.

10 But it may be necessary, but not
11 sufficient if you look at, I mean, this is a 35
12 megawatt machine that's going to come in under the
13 test reactor rules which allow less depth or burden of
14 proof as opposed to one of the larger DOE ones that
15 are going to come in. I think we may want to consider
16 those as pilots as well to convince ourselves that the
17 process is robust across the size of the technologies.

18 The second point is that, I think you said
19 this but I wasn't sure, the ACRS review, that's the
20 formal review, but it would seem to me it would be
21 useful to get briefing back around milestone two. You
22 know, what were the big issues you guys found to get
23 us to stop thinking about it. To kind of align, get
24 our brains starting to work on it.

25 Here is the design, here is what we found

1 were the big issues. So I think it would make the
2 Item C go faster if we kind of had some earlier
3 interactions, not with letters and all that stuff, but
4 more briefings and interaction.

5 MR. BEASLEY: And you're right. I agree.
6 And we'll get into that in a couple of slides.

7 MEMBER PETTI: Oh, okay.

8 MR. BEASLEY: Yes.

9 MEMBER PETTI: Good.

10 CHAIR REMPE: So before you go there,
11 again, this is a construction permit where there is an
12 ACRS review for it as well as an ACRS review for an
13 operating license. How different is this from what we
14 did with SHINE?

15 MR. SHAMS: I can take a stab at that. I
16 don't particular believe it's that different. I think
17 we didn't particularly have that terminology and the
18 designations that we have for these different groups.

19 We essentially have done the same parts of
20 it, and perhaps organized somewhat differently. But
21 I would not say that the delta is that significant.

22 CHAIR REMPE: That's my take on it too.
23 And so again, if one were to say we'd like to start
24 doing this with a Part 52, I might have a lot more
25 questions. And so I was really relieved to hear at

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 the beginning of this meeting, because it wasn't clear
2 to me before this meeting that --

3 MR. SHAMS: Yes.

4 CHAIR REMPE: -- this wasn't a pilot for
5 the whole caboodle. And so I'm real happy to hear
6 this is just a pilot for an NPUF that's a non-light
7 water reactor. And so I'm a bit more relieved.

8 I would like to see more structure on
9 these interactions that show up in the Slide 28.
10 Because I think some structure to them, maybe grouping
11 what topics or chapters together for the discussions
12 would help facilitate the final review, as it did with
13 the SHINE process.

14 MR. SHAMS: I agree. And we're definitely
15 modeling --

16 CHAIR REMPE: Also, we had meetings on
17 SHINE and there would be --

18 MR. SHAMS: I'm sorry, go ahead. I'm
19 sorry.

20 CHAIR REMPE: Yes. In the SHINE process
21 we had a bunch of chapters and we had something where
22 a question would come up by ACRS that no one had a
23 good answer for, and so we had follow-ups in the
24 meetings. And so I think that that helped make the
25 final review in the letter we issued on SHINE going a

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 little bit smoother.

2 MR. SHAMS: And we're committed to
3 offering the same level of interactions and
4 opportunities. Again, being this is a pilot, we're
5 looking for what would be the optimal way of reaching
6 out to you, the timing. And I know Ben indicated
7 that.

8 We actually wanted to come to you as early
9 as next month, but it is just a matter of scheduling
10 with the vendor. Or the applicant.

11 So we're on the same wavelength. We'll
12 structure this, we'll learn from this experience. And
13 we're certainly looking forward to applying it to a
14 larger reactor. One of the DOE reactors as well.

15 CHAIR REMPE: Thanks --

16 MR. DUDEK: Chairman Rempe, I would also
17 offer, as a note, is that for the NuScale SDA that has
18 less rigor than the design certification, we do, the
19 tentative plan is to use the four phase review
20 schedule. And I have noted the importance of, early
21 in Phase 2 or B, getting to the Committee and briefing
22 them on any highly challenging issues as was
23 recommended earlier in this discussion.

24 CHAIR REMPE: Yes, because SDA, if things
25 go as I see in the popular press where you have an

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 over 50 percent up-rate, there might be a lot more
2 questions and so we'll see how well that works. But
3 of course there is not finality with an SDA.

4 MR. DUDEK: Correct.

5 CHAIR REMPE: So there is a bunch of
6 things to think about on that one. But this one
7 doesn't raise as many questions in my mind.

8 MR. BEASLEY: So let's go on to Slide 27.
9 So this is a notional schedule that I don't want you
10 to pay any attention to the dates. This was prepared
11 before we had really firmed up the dates for the
12 Hermes project. And it was just illustrative.

13 And so you can see here, the primary point
14 I want to make is the long line for the ACRS review.
15 It's in the, the Kairos Hermes review is the top set
16 of bars. And what, the like fifth bar down is the
17 ACRS review.

18 So that's, I'll get into this in the next
19 slide of how I want to do this. But the intent is
20 that the earlier we can have involvement from you the
21 early we can have involvement from our management
22 team, the earlier we can have involvement from the
23 attorneys. The quicker the review is going to go, the
24 more efficient the review is going to be. And so
25 that's part of our objective.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 We talked earlier about the core team. We
2 do have attorneys that are on the core team. And so
3 that is very beneficial for us.

4 As we get into the next slide, it's going
5 to, in order to be able to work early with you, it's
6 going to necessitate that we work early with our
7 managers.

8 MEMBER KIRCHNER: So, Ben, can I turn that
9 around on you and say that the ACRS helps the staff
10 engagement their management sooner, and the lawyers,
11 to expedite the process?

12 (Laughter.)

13 MEMBER KIRCHNER: No response required.

14 (Laughter.)

15 MR. SHAMS: No response required is fair.

16 (Laughter.)

17 MR. BEASLEY: And so this slide is just a
18 feeble artist, I can't even say that, I'm not even a
19 feeble artist, I'm an engineer, so I just tried to
20 illustrate what I was thinking with respect to how we
21 might work together quickly, or early, in the process.

22 And so as staff is doing a review, we're
23 going to have some chapters that we will complete
24 earlier than others. And so my thought was, we'll get
25 those reviewed so that they can be made available to

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 the public and share them with you and start engaging
2 on the review.

3 I'm hoping that this doesn't bite me. I
4 am a, very much am an optimist and so my expectation
5 is that this will work. It could be that it may not
6 work out so well, but we're going to push hard to try
7 to make it work. To get you as much as we can as
8 early as we can. And so, we'll have to see how the
9 review goes.

10 As you've mentioned, it might work for
11 this review because it is just a construction permit
12 for a test reactor. And so once we get to, once this
13 process is applied to a larger effort, it may not work
14 quite as well. But certainly, my desire is for early
15 engagement.

16 And what I've identified as sharing with
17 you is the completed chapters, but I am completely
18 open to any ideas, any suggestions you have for how we
19 can engage early with you on whatever topics that you
20 want to hear about.

21 MEMBER BALLINGER: This is Ron Ballinger.
22 I'm lead for the SHINE application and there are a
23 couple of unique things that are going on with SHINE,
24 but I've come to the conclusion that the RAI cycle
25 turns out to be the long pole in the tent. In the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 sense that if there is anything that can be done to
2 minimize the number of RAIs and the length of that
3 cycle, boy, that would be a big help.

4 MR. BEASLEY: Yes. And so one of the
5 statutes that we're going to employ to try to be more
6 efficient in our reviews is increased use of audits to
7 try to address that issue. Because, yes, we recognize
8 that RAIs are, you know, a lengthy process. And so
9 if we can get the information we need through audits,
10 you know, that tends to go much quicker.

11 Another thing that we're doing that's a
12 little bit of a nuanced approach with Kairos, and it's
13 actually Kairos that's doing it with us, is as we
14 share with them preliminary RAIs, they respond, they
15 tell us that they're going to respond quickly. And so
16 that preliminary RAI never matures to becoming a full
17 RAI that gets sent by letter.

18 And so again, this process, I'm very
19 hopeful, I'm optimistic that it's going to work well
20 with this project. You know, one of the factors that
21 it may work well is because we have such a responsive
22 Applicant, such an Aggressive applicant that really
23 wants to make it go quickly and is really taking
24 advantage of the opportunities to respond to us, you
25 know, before we get involved in a little bit more

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 lengthy, formal, RAI process.

2 MEMBER BALLINGER: Yes. I mean, I
3 understand that it's a two-party event here. I mean,
4 you wouldn't ask for the RAIs if you didn't need them.
5 And so it's incumbent upon stressing to the applicant
6 that the completeness of the application is really the
7 initial driving force.

8 MR. BLEY: So this is Dennis Bley.

9 CHAIR REMPE: I see your hand up, Dennis.

10 MR. BLEY: I'm sorry?

11 CHAIR REMPE: I see your hand up, but I
12 just wanted to quickly before, since I'm Chair of the
13 subcommittee, I just wanted caution you about using
14 audits.

15 There was a recent design center
16 interaction where it turned out that the staff really
17 did a good job on documenting the results of the audit
18 so we could investigate how something had been
19 resolved. And when you don't have an RAI with a paper
20 trial, it could get lost. So if you do that, just
21 please make sure that everybody knows it's important
22 to document well. And then go ahead, Dennis.

23 MR. BLEY: The discussion here got me
24 thinking. And if you guys think back, our second
25 round of review on NuScale was organized under topical

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 areas rather than chapters. Some of those cut across
2 multiple chapters.

3 And I know it's difficult, but if you can
4 think of a way to pull together your reviews so that
5 your RAIs were integrated in that kind of way, it
6 might help clear up a number of issues all at one time
7 and help the applicant in responding to you. Instead
8 of having quite as many, you'd have fewer with more
9 detail.

10 MEMBER BALLINGER: But I think that we're
11 trying to do that with SHINE.

12 MR. SHAMS: We are.

13 MR. BLEY: May I make a note that --

14 MR. SHAMS: Oh, go ahead, Dennis, go
15 ahead.

16 MR. BLEY: I just was going to say it's a
17 good suggestion, and I'm making notes, so go ahead ---

18 MR. SHAMS: Yes. And I wanted to also
19 perhaps comment on that, is to make sure that we're
20 absolutely aligned again on ensuring that there's
21 adequate documentation for the exchange of
22 information.

23 The audit process is not a shortcut, per
24 se. I tried to present it as more of a, a more direct
25 and less formal-like approach of writing and waiting

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 for a response. You know, perhaps a human
2 interaction gets more done, more bang for the buck, if
3 you would, than a question sent.

4 But there's room for the question. And
5 there's also formal documentations associated with the
6 audit process. There's an audit plan, there's an
7 audit summary. And any information that is needed to
8 support the regulatory conclusion would really need to
9 be supported -- it would need to be submitted on the
10 docket anyway.

11 So there are tools that augment and
12 complement the audit process to leverage the best part
13 of it which is the human interactions, and the direct
14 fashion that has taken place, but also document what's
15 taken place for longevity as you indicated.

16 CHAIR REMPE: Dave, your hand's up?

17 MEMBER PETTI: Yes, just a question off
18 the top of my head. Confirmatory analysis, is there
19 criteria when you decide you need it and when you
20 don't? Because that's a pretty, you know, involved
21 step in the overall approval process. Have you guys
22 given any thought to that?

23 MR. BEASLEY: So I'm not aware of any
24 criteria of when we would need confirmatory analysis
25 and when we would not. You know, we have talked about

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 that a little bit on the Hermes project. And, you
2 know, our mission is to have reasonable assurance.
3 And so if we can get comfortable with a reasonable
4 assurance finding without a confirmatory analysis,
5 then that will be our preference. But certainly, you
6 know, if we want the confidence that a confirmatory
7 analysis is going to provide, then we're willing to do
8 one.

9 MR. SHAMS: Perfect. Yes, then if I may
10 add, yes, it's not a cut and dry. It is more of, you
11 know, an engineering judgement. But there are cases
12 where they present themselves as great opportunities
13 for such confirmatory analysis, areas of uncertainty,
14 areas where you want to assess the sensitivity for
15 certain variables, and new methodology that we would
16 want to assess its viability using potentially a
17 different alternative approach.

18 But Ben is sort of spot on. It's got to
19 ultimately drive our ability to make a conclusion.
20 I'd like to say that we sort of stay away from we've
21 done it in the past, so this is an area where we just
22 do confirmatory analysis. I'd rather find us really
23 applying more critical thinking to where are we going
24 to pick and choose where we do the confirmatory
25 analysis.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 MEMBER KIRCHNER: Well, it seems to me,
2 Mohamad, that it's incumbent on the Applicant to
3 demonstrate where they're proposing unique design
4 features either through prototypical testing or some
5 other data and/or experience that these, to address
6 Ben's point, these particular design features will
7 function as advertised and allow the staff to come to
8 a reasonable assurance determination that they will
9 indeed provide that safety function.

10 But it's really first incumbent on the
11 Applicant, not on the staff, to conduct thorough
12 confirmatory analyses of an advanced design. At least
13 that's how I would approach it, if I were in your
14 shoes, for the opening gambit.

15 MR. SHAMS: Oh, absolutely agree with
16 that. We absolutely believe that if there's any on
17 place in our pre-obligation interactions that we think
18 would be, you know, most benefitting from these early
19 interactions, it's the novel areas, the areas with
20 safety features that haven't been addressed before.

21 And then we have regulation that actually
22 lays out what an applicant needed to, you know, to
23 demonstrate the viability of such features. That's at
24 5043 echo. And it lays out what needs to be done,
25 you know, in the combination of operating experience,

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 testing, analyses, and the like. So we're spot on.
2 I think that will be a key area for an applicant to
3 come to us early on and have the right dialogue to
4 make sure that we're on the same page on how to
5 demonstrate the viability of a new safety feature.

6 MEMBER PETTI: I'm very supportive of this
7 approach. I just harken back to the MGMP days when
8 large amounts of money were given to NRC to develop
9 tools for confirmatory analysis that, when I look at
10 it in hindsight, many of these things wouldn't meet
11 any of the stuff you just talked about, you know.

12 MR. SHAMS: Yes.

13 MEMBER PETTI: So this is an important
14 step forward, I think. Yes.

15 MR. SHAMS: Well, and we appreciate that.
16 And we're truly looking at, again, confirmatory
17 analysis as a tool, not a goal, if you would. We want
18 to be able to use it to support what we do, not do it
19 for the sake of doing it.

20 MR. BEASLEY: Other thoughts, questions,
21 on our engagement for Hermes?

22 I do have one other slide. This is a new
23 communication tool that we have created. It's a
24 project status dashboard that's on the public website.
25 This is just the top portion of the dashboard. The

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 full dashboard will give information on upcoming
2 milestones, audits, ROIs, technical issues that are
3 being addressed.

4 And at the bottom of the screen there you
5 have the RL for the dashboard up on the public
6 website. And so I'm pretty excited about this.
7 Public Affairs said they'd gotten some good feedback
8 on it just with respect to the communication to the
9 public on the status of the application review.

10 So we're doing a number things to, you
11 know, improve our processes, to improve our
12 communication, to try to be more efficient, to be
13 creative. And so it's, you know, it is nice that
14 it's an aggressive Applicant, a savvy Applicant. It's
15 nice that it's a construction permit and it's a test
16 reactor. Because we're able to do a lot of these
17 creative things with a little bit less of a complex
18 project.

19 MR. BLEY: This looks pretty good. And
20 are you going to show us the next two, the progress,
21 or hours spent in the technical issue resolution ones?
22 The middle one is really hard to do, ha, ha. I've
23 tried managing projects very often. And trying to
24 figure out a realistic progress that's really
25 indicating how close you are to being complete is a

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 tough thing to do well.

2 MR. BEASLEY: Yes. And I'm not saying
3 that we're going to do it well on this dashboard. So
4 certainly, you know, it is a measure, but you're
5 right. I mean, we would have to do, you know, a
6 pretty detailed comparison of progress versus what the
7 expected expenditures would be at that point in time.

8 You know, I do have a spreadsheet, you
9 know, in tracking that variation, you know, what I
10 expect to see happen. This bullet is a little bit
11 more linear, and so it's not going to be a real
12 precise measure. But it is an indicator.

13 MR. BLEY: Yes. You can lay out sub-tasks
14 and things along the way, but where you really fall
15 off the wagon is when you run into problems. And then
16 suddenly your schedule starts to expand.

17 MR. BEASLEY: Yes.

18 CHAIR REMPE: Since we're spending so much
19 time talking about Kairos, again, it's on a DOE site,
20 right? It's not a power production facility. Why are
21 they doing this with the NRC?

22 MR. BEASLEY: So it's not actually on,
23 it's on a former DOE site.

24 CHAIR REMPE: Ah-ha, I missed that nuance,
25 sorry. I thought it was --

1 MR. BEASLEY: Yes.

2 CHAIR REMPE: I thought it was still on a
3 DOE site. So they've got to then, I guess.

4 MR. BEASLEY: Right. So this is East
5 Tennessee Technology Park in Oak Ridge. It's the
6 former gaseous diffusion plant site which was cleaned
7 up and turned over to the city of Oak Ridge. And so
8 it's a, you know, it's an industrial site in Oak
9 Ridge that's got a number of commercial activities
10 going on in it.

11 CHAIR REMPE: Nevermind, it was bad
12 question on my part. I should have known or
13 recognized --

14 MR. SHAMS: No, actually, it's not a bad
15 question at all. It's actually a great question. And
16 I think there's more to it than just the location.
17 It's actually the purpose of the facility itself.

18 And I'm going to actually ask Amy Cubbage
19 if she'd give us a few critical points here, because
20 it would benefit the Committee to hear that.

21 Amy, would you like to comment on that?

22 MS. CUBBAGE: Yes, I would. Yes. So
23 it's, yes, not just the location as Mo indicated, it's
24 the ownership. So this is a commercial entity that
25 owns this facility. And also the purpose, if it's

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 demonstrating a reactor for commercial operations,
2 regardless of the location, NRC would have the
3 authority.

4 CHAIR REMPE: Thanks.

5 MEMBER BROWN: May I ask another
6 question?

7 MR. BEASLEY: Yes, please.

8 MEMBER BROWN: This is Charlie Brown. I
9 went down on your little site, dashboard. And below
10 that there's a project schedule that shows that every
11 task is to be completed by the end of February.

12 MR. BEASLEY: Well, that's not every,
13 that's the tasks that are listed. So there are so
14 many tasks that they won't fit on that chart. So --

15 MEMBER BROWN: Well, let me back up. It
16 just shows task title, seven, instrumentation control,
17 started December 1st. It'll be finished February
18 28th.

19 MR. BEASLEY: Right.

20 MEMBER BROWN: And the electrical power
21 systems just have the same, and they all -- all of the
22 16 listed items, or 15, yes, 16 listed items are due
23 to be finished by February 28th.

24 MR. BEASLEY: Right. And so on the -- so
25 we need to do a little bit more development work to

1 make that little bar chart a little bit more clear.
2 But what I did was put in each chapter for the draft
3 SE. And so you see the acceptance review on the
4 screen we're looking at now. The acceptance review is
5 100 percent complete.

6 You know, as we start completing those
7 chapters, the input for not completing the chapters,
8 as soon as I start getting the input on those chapters
9 by the end of February, this second dial will start to
10 fill in, the draft SE will start to fill in.

11 And then we will, you know, then we would
12 enter the safety evaluation completion milestone
13 group. And so that's another set of 16 tasks. That's
14 just the way I built it in our tool, in our software.
15 And so those tasks would then come up under SE
16 completion. And that timeframe is later on in the
17 year.

18 So we need to, you know, that's in the
19 list of things that I want to deal with, with the
20 developer, to improve and to make that bar chart a
21 little bit more understandable.

22 MEMBER BROWN: All right, so there's no
23 ACRS involvement in this is what we're seeing. Is
24 that correct?

25 MR. BEASLEY: So I have to pull up,

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

1 because I wanted to, you know, show some things on
2 the schedule. Did I show ACRS in there?

3 MEMBER BROWN: I don't weee words. I don't
4 see the words anywhere. But there's another
5 environmental review. And below that there's nothing.
6 So I'm just curious as to how the process is
7 apparently. When are you supposed to complete these
8 reviews? I mean, are those bars that show February
9 28th going to be extended out across this chart over
10 the next year and a half?

11 MR. BEASLEY: Yes. There will be another
12 set of bars that show up as these bars get completed.

13 MEMBER BROWN: Even though they say
14 they're supposed to be completed by February 28th,
15 which is what the bar chart shows right now?

16 MR. BEASLEY: Okay --

17 MEMBER BROWN: I'm just asking the
18 question. Because we haven't seen anything other than
19 the overview presentations and a few of the other
20 presentations.

21 MR. BEASLEY: Right. So these bars are
22 only for the very first milestone group, drafting the
23 safety evaluation. And so this --

24 MEMBER BROWN: So that only applies to
25 this -- okay, if I go back up to the third bullet,

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

1 that's this draft, or second bullet, this draft SE
2 pending preparation.

3 MR. BEASLEY: Correct.

4 MEMBER BROWN: That part only applies to
5 that thing alone.

6 MR. BEASLEY: Well, yes.

7 MEMBER BROWN: This alone.

8 MR. BEASLEY: Right, yes. The first 16
9 tasks, they only apply to that one bullet.

10 MEMBER BROWN: Oh, okay.

11 MR. BEASLEY: That's correct. Yes. And
12 so thank you for making this observation. Because,
13 you know, when I get with a developer to improve the
14 layout of this chart, you know, that will be
15 something that would be good to address to make that
16 more clear what milestone group we're working in.

17 MEMBER BROWN: Okay, thank you.

18 (Simultaneous speaking.)

19 MEMBER KIRCHNER: Apropos to Dennis'
20 commentary on this, you make the analogy with
21 classical project management. You often draft a
22 critical path kind of schedule. And presuming that
23 the early engagement does at least highlight what the
24 major safety and technical issues are, and then you
25 develop, from that regulatory engagement, a plan for

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 a resolution. Then, so the first order perhaps,
2 classical project management tools might work.

3 But if you don't have those -- now there's
4 always the unforeseen and the unforeseeable popping up
5 somewhere during your review. But your first order,
6 if you could identify the critical technical issues
7 early in the engagement with the Applicant, then you
8 probably could layout a more realistic schedule that
9 would be more indicative of where you are in terms of
10 progress versus hours spent.

11 It's just an observation. Indeed, this is
12 much more difficult than a construction schedule
13 typical of the project management application.

14 MR. BEASLEY: Yes, thank you.

15 So I think the next slide is the last
16 slide in our group. It's the key messages again.

17 So, Mike, did you want to cover those? Or
18 I'd be glad to if you want?

19 MR. DUDEK: I'll defer to you. I think
20 we've heard the key messages on multiple times. I
21 think Brian gave a pretty good opening remark, and we
22 listened to these key messages in depth. And I'm not
23 sure that there's any need to rehash some of these if
24 we've discussed these at length throughout this
25 meeting.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 MR. BEASLEY: Okay. And I agree. You
2 know, I think that the way I would summarize it in 30
3 seconds or less is that, you know, we do have a
4 regulatory framework that is flexible enough that
5 we're able to review the advanced light water reactors
6 and advanced non-light water reactors.

7 And we've really been pushing pre-
8 application engagement, and that is very valuable for
9 us as we're looking at these new designs, and we're
10 trying aggressively to improve our processes based on
11 what we've learned, you know, over the last number of
12 years with respect to what helps a project go well and
13 what doesn't.

14 (Simultaneous speaking.)

15 CHAIR REMPE: Oh, go ahead.

16 MR. SHAMS: All right, I'm sorry. I was
17 going to just, you know, sort of put our fingers, you
18 know, hopefully all of us, on -- you know, part of
19 the main reason we wanted to come to you to show this
20 is to really kind of shed a light on how we're taking
21 on these reviews, given the peculiar nature of them,
22 lack of a particular experience, what we've
23 experienced with some of these technologies and the
24 like, the different scales, the different maturity of
25 the designs.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 And I would like to maybe perhaps bring us
2 back a little bit, a few years back, where we talked
3 about a staged approval and stage the, you know,
4 applications, what can we do to develop that. So what
5 we laid out today is really the approach that we're
6 using to achieve that goal too.

7 If you would, de-risk some of these
8 reviews to the extent possible, be able to provide
9 early feedback, be able to provide as formal of a
10 position as possible, but yet also provide informal
11 and less, if you would, less exhaustive reviews.

12 So the whole framework is intended to
13 offer that, the flexibility, the early assurance, if
14 such things exist, the early engagement with you all
15 if we can, as well. So saying that, we just wanted to
16 get your feedback, get your insights, perhaps show you
17 that in a totality such that you have a good, you
18 know, a good sense of what we're trying to do.

19 A lot of great questions today about, you
20 know, the level of completion, and topical reports,
21 and the level of review that's provided in the white
22 paper versus the technical report. And these are all
23 great questions. And they all have to be balanced and
24 calibrated with our desire to again, provide
25 flexibility.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 So I hope we were able to present you with
2 that to help, you know, provide these insights, and
3 then just continue to interact with you, and hopefully
4 try to answer your questions if there are areas that
5 we can improve in, or provide additional insights at,
6 and support these reviews in a more efficient way.

7 So I'll just stop here. And if there are
8 any questions or comments, we'd love to hear them.

9 CHAIR REMPE: So I know I appreciate the
10 willingness of the staff to come and discuss this with
11 us. And it improves or understanding, so hopefully we
12 can both accomplish our goals a little better.

13 And members, before we switch topics, are
14 there any additional questions or comments?

15 MR. BLEY: Not so much a question, Joy,
16 but a couple of comments, if I could. I'm going back
17 to something I'm not sure, well, maybe we'll pick this
18 up in the next talk. I'll hold off on this one. We
19 have another talk, right?

20 CHAIR REMPE: Right, Dennis, we ---

21 MR. BLEY: Yes, I think ---

22 (Simultaneous speaking.)

23 CHAIR REMPE: And will go around the table

24 ---

25 MR. BLEY: So on that map, it could be

1 extended to make it a critical path kind of map. I'd
2 mentioned to you, and I'm sure lots of people -- they
3 probably want to take commercial products now to do
4 this. But the first people I saw do it was U.S. Army
5 Logistics Management organization at Fort Lee who
6 built a simulation program.

7 And instead of identifying the critical
8 path, they allowed uncertainty among each path and a
9 very easy method to put it in. And then when you run
10 a simulation program on that network, you get an index
11 of criticalities and how likely different paths are to
12 be the critical path. And I found that extremely
13 useful. And I'm not sure how many commercial packages
14 these days are including that option. But it's a nice
15 one and fairly easy to implement. That's all.

16 CHAIR REMPE: Anyone else? We are way
17 behind schedule, so I'm going to ask staff to bump
18 ahead in their slides to the next topic, please. And
19 I realize it's ACRS members is why we're behind
20 schedule as usual.

21 MS. LAURON: So shall I begin?

22 CHAIR REMPE: Please do.

23 MS. LAURON: Okay. So my name is Carolyn
24 Lauron, and I'm a project manager in the New Reactor
25 Licensing Branch in the Division of New and Renewed

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

1 Licenses in the Office of Nuclear Reactor Regulation.

2 I am here today to guide you through the
3 information contained in the interim staff guidance
4 with a goal of helping you develop and submit your
5 comments as described in the Federal Register notice.

6 We welcome questions at the end of the
7 presentation and strongly encourage you to provide the
8 comments in writing as described in the FRN.

9 By way of background for this
10 presentation, I would like to address why the ISG was
11 developed. Many considerations went into the decision
12 to develop the guidance. A few years ago, the NRC was
13 anticipating the submission of construction permit
14 applications within the next three to five years.

15 Recognizing that the NRC had last reviewed
16 and issued a light water power reactor construction
17 permit in the 1970s, and that the most recent licenses
18 were issued using the one-step licensing process under
19 Part 52, there was a need to reorient and familiarize
20 the staff to the two-step licensing process under 10
21 CFR, Part 50.

22 In addition, ongoing NRC activities to
23 align the licensing processes under 10 CFR Parts 50
24 and 52, and to develop guidance for non-light water
25 reactor designs, further justified the need to help

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 the staff navigate through the two-step licensing
2 process and the review guidance for a light water
3 power reactor construction permit application.

4 Therefore this ISG fits into the existing
5 licensing framework used to construct the currently
6 operating large light water power reactors and takes
7 advantage of the existing review guidance in NUREG
8 0800, also known as the light water reactor review
9 SRP.

10 Did you want me to stop for questions?
11 I'm sorry, I only have one screen.

12 CHAIR REMPE: I will interrupt if I see
13 a hand up, or usually members will interrupt or ---

14 MS. LAURON: Okay.

15 CHAIR REMPE: Just keep going.

16 MS. LAURON: All right. Okay, thank you.
17 So with that background, the staff drafted the interim
18 staff guidance for how it would conduct the safety
19 review of the construction permit application.

20 On December 14, 2021, the NRC staff
21 published a notice on the Federal Register requesting
22 comments on the draft interim staff guidance by
23 January 28th, 2022. As shown on this slide, the
24 notice may be accessed through the link to the Federal
25 Register citation, 86FR71101.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 The draft interim staff guidance may be
2 accessed through the Agency-wide Document Access and
3 Management System, or ADAMS, at the link shown or by
4 searching for the accession number, ML21165A157.

5 MEMBER KIRCHNER: Carolyn, this is Walt
6 Kirchner.

7 MS. LAURON: Yes.

8 MEMBER KIRCHNER: When I go on the NRC
9 website, I can't find this document. And obviously
10 it's a user problem, but on the public website it
11 doesn't display it. It displays all the ISGs for the
12 COL, but it doesn't pull up this one. Is it out there
13 on NRC website?

14 MEMBER BROWN: Walt, I just clicked on the
15 link. It's the bottom one, the 157, and it came up.

16 MEMBER KIRCHNER: Okay. Well, I'll just
17 have ---

18 CHAIR REMPE: And I clicked on the top one
19 earlier, and it came up. So I think that it's a user
20 ---

21 MEMBER KIRCHNER: It's a user problem,
22 sorry, Carolyn. Go on.

23 MS. LAURON: That's okay. That's all
24 right.

25 MEMBER BROWN: Walt, I got this on --- I

1 did that on my personal computer not on the NRC
2 laptop. So they actually worked, I had a hard time
3 with all of these, ha, ha, but it came up one of the
4 few times.

5 MS. LAURON: Okay.

6 MEMBER KIRCHNER: Thanks, Charlie, I'll
7 try it again. Thank you.

8 MS. LAURON: So with that background, the
9 staff drafted the interim staff guidance for how it
10 would conduct its review, the safety review of a
11 construction permit application. Sorry, I'm repeating
12 myself, sorry. I forgot to flip the page.

13 So the scope of the draft interim staff
14 guidance discussed today is the safety review of light
15 water power reactor construction permit applications.
16 As I mentioned earlier, the ISG supplements the
17 existing light water power reactor review guidance
18 found in NUREG 0800, entitled Standard Review Plan for
19 the Review of the Safety Analysis Reports for Nuclear
20 Power Plants Light Water Reactor Edition.

21 During the February 25th, 2021, advanced
22 reactor stakeholder meeting, the staff discussed its
23 draft white paper that covered review guidance for
24 both light water power reactor and non-light water
25 reactor construction permit applications.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 The staff guidance discussed today a
2 notice in the Federal Register notice focuses only on
3 the light water power reactor construction permit
4 application. And it is primarily applicable to this
5 type of power reactor design.

6 There may be some information in the draft
7 ISG applicable to non-light water reactor construction
8 permit applications, and we anticipate that this
9 information will be referenced or included in the
10 separate guidance document currently developed for
11 those non-light water reactor applications. And by
12 that, I am referring to the ARCAP document.

13 The draft interim staff guidance consists
14 of two parts. There is the main body of the document,
15 and the appendix of clarifications to the existing
16 guidance. The main body consists of many sections
17 that are listed on this slide. These sections are
18 shown in the ISG as bold or capital letters.

19 Because there are many items covered under
20 the guidance section, I will first go over the other
21 sections and return to a detailed discussion of the
22 guidance section on the next slide.

23 The purpose, background, rationale, and
24 applicability sections of the document discuss the use
25 of the document, the history of similar documents, why

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 this document was developed, and in what instances
2 this document is to be used.

3 The implementation section of the document
4 states how the staff will use ISG to conduct its
5 safety review of construction permit applications.
6 The backfitting and issue finality discussion, and the
7 Congressional review exceptions will be developed as
8 part of the final ISG.

9 The final resolution section describes the
10 final disposition of the guidance and closure of the
11 ISG. Lastly, the references section lists the
12 relevant documents referred to and discussed in the
13 ISG.

14 The second part of the document is the
15 appendix. This part of the document provides
16 clarifying supplemental guidance. It should be
17 noticed that the information in the appendix will be
18 used in conjunction with the guidance that currently
19 exists in NUREG 0800, also known as the SRP.

20 The guidance section of the document has
21 three sub-sections of information, requirements for a
22 power reactor construction permit application, light
23 water reactor safety review guidance, and special
24 topics.

25 The requirements for a power reactor

1 construction permit application subsection identifies
2 some of the applicable regulations to a construction
3 permit. This subsection also provides a discussion of
4 those applicable regulations including 10 CFR 50.35 on
5 the issuance of construction permits.

6 The next guidance subsection, listed as
7 light water reactor safety review guidance, discusses
8 the approach to reviewing the construction permit.
9 The section identifies the existing staff guidance in
10 NUREG 0800 of the SRP and is supplemented with the
11 additional information found in the appendix to the
12 ISG.

13 The third and final subsection is called
14 special topics. This covers many areas of interest
15 related to construction permits listed on the slide
16 such as the relationship between construction permit
17 and operating license reviews, the purposes and
18 benefits of pre-application activities, the lessons
19 learned from recently issued construction permits, the
20 approach for reviewing concurrent license applications
21 and applications incorporating prior NRC approvals,
22 the potential effect of ongoing regulatory activities
23 on construction permit reviews, and the licensing
24 requirements for by-product source or special nuclear
25 material.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 CHAIR REMPE: So, Carolyn, here I have
2 some --

3 MS. LAURON: Yes.

4 CHAIR REMPE: -- questions or comments.
5 First of all, in its relationship between construction
6 permit and operating license reviews, I was interested
7 in the discussion in the draft interim staff guidance
8 about the staff is considering the acceptance of an
9 operating license application before they finish the
10 review of the construction permit.

11 And it just said we're considering it.
12 And I think that some additional guidance might be
13 needed if staff starts doing that. It's just, I think
14 it could be an interesting, it could lead to some
15 possible difficulties.

16 And then, you know, we're getting ready
17 right now to start --- this is, I guess, a follow on
18 to a comment I made earlier, but we're getting ready
19 in the next month or so to review the ongoing Part
20 50.52 rulemaking submittals.

21 And should we consider this draft internal
22 staff guidance as the current guidance in our
23 discussion about Part 50.52 alignment issues, or no,
24 this was done so much before that that we shouldn't --
25 - I guess I'm kind of wondering if there's some

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 inconsistencies in what's in the document versus what
2 is going to be happening with Part 50.52. Does the
3 staff have an opinion on that?

4 MS. LAURON: So this guidance does not get
5 ahead of the activities for aligning Parts 50 and 52.
6 I think Brian mentioned earlier that the proposed rule
7 to align parts 50 and 52, that package, also includes
8 the list of guidance that would be updated as a result
9 of what the proposed rule will include.

10 This guidance speaks to the current, to
11 the existing framework under Part 50, to the existing
12 guidance that we have in NUREG 0800, does not get
13 ahead of any of the activities that the other groups
14 may be doing with respect to, you know, the
15 rulemaking, and then the non-light water efforts.
16 Some of those activities may be also applicable to
17 light water reactor designs, for example.

18 But we do not get ahead of that. Those
19 activities are kept separate. This ISG focuses solely
20 on the existing framework, the existing guidance that
21 we have in NUREG 0800, and supplements it with some
22 clarifications in the appendix.

23 CHAIR REMPE: So there's the current
24 guidance, then there's this, which is also still just
25 out for comment. And then there's yet some additional

1 stuff that may be coming down the pike.

2 So really, in our review of Part 50.52, we
3 should probably ignore this and talk about what's in
4 the existing guidance and changes from it that would
5 need to be performed for Part 50.52 implementation?

6 Because this is an interim, saying it's
7 just out for comment. And yet we're going to be doing
8 a letter in March about Part 50.52. Do you understand
9 why I'm asking this question?

10 MS. LAURON: Yes, I do. And
11 unfortunately, I don't know how far along the
12 briefings, but I have a file on the staff has made
13 with respect to updating guidance to support the
14 proposed rule.

15 I think that the expectation was to
16 develop guidance, draft guidance that would accompany
17 the rule to show the implementation of that proposed
18 rule, the alignment for 50.52. So I'm not really sure
19 how to answer your question, sorry. I don't have
20 enough background on the --

21 CHAIR REMPE: Yes. I'm also not sure,
22 because again, it's my understanding from the latest
23 communication that the proposed changes won't be
24 released at the time that the rule is sent, or that
25 we're going to be reviewing and providing our letter.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 But it seems to me that I shouldn't be
2 comparing to what's in this with the documentation for
3 the proposed rule. I should go back to what's
4 publicly available and approved --

5 MS. LAURON: Right.

6 CHAIR REMPE: Right?

7 MS. LAURON: Yes. But I also think it's
8 fair to say that the guidance here, the existing
9 guidance that we have in NUREG 0800, will change as a
10 result of the alignment rule becoming final and the
11 guidance accompanying that as well. I think that
12 changes will be coming, depending on what, you know,
13 how the final rule is issued and what changes there
14 are to align the two processes, the two parts of 10
15 CFR. Does that make sense?

16 CHAIR REMPE: I think so. Again, I don't
17 think I can include this in what I am going to be
18 proposing, or what my colleagues and I will be writing
19 in March. But anyway, go ahead.

20 MS. LAURON: Okay. I think ---

21 MR. DUDEK: Carolyn, I'd just like to
22 clarify real quick. That's correct, Chairman Rempe,
23 that you should not necessarily conjoin the two. And
24 I think there is a grace period.

25 So my belief is that for the 50.52 we had

1 to identify what guidance documents needed to be
2 updated and how we would do it. But there is a grace
3 period for actually completing it and getting all that
4 guidance actually completed.

5 CHAIR REMPE: Right. So again, so it's
6 either what's publicly issued and out there already
7 out on the books. And this isn't one of those things
8 that's out on the books. It's been released, but it
9 isn't a sure bet. So we've all got to go back to
10 what's currently there. Anyway, thank you.

11 MS. LAURON: Yes. I think you're correct,
12 yes. That's right, sorry.

13 Okay. I'm sorry, I lost my spot. Yes,
14 okay. So the appendix to the draft ISG will be used
15 in conjunction with NUREG 0800 which is the standard
16 review plan. So the ISG, the information in the
17 appendix is not meant to be all inclusive of the
18 topics expected and reviewed in a construction permit
19 application.

20 The staff went through the sections in the
21 SRP for the various topics and identified where
22 clarifications were needed. The SRP, the NUREG 0800,
23 is periodically updated. And there have been updates
24 where the staff had actually merged the information to
25 review the license together. So previously, in

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 earlier versions of NUREG 0800, the staff had separate
2 construction permit guidance and separate operating
3 license guidance.

4 In more recent years, when the SRP was
5 updated, some of the sections had been updated to
6 merge the guidance for both construction application,
7 construction permit application reviews, and operating
8 license reviews together. And therefore, the staff
9 identified that those sections would need
10 clarifications of what would be reviewed in a
11 construction permit application.

12 So the appendix begins by reiterating the
13 approach described in the main body of the ISG and
14 cautions the reviewer that, you know, the information
15 in the appendix is to be used in conjunction with
16 NUREG 0800.

17 There are, as I mentioned, just certain
18 topics, related topics that are presented in the
19 appendix with clarifying information. And these are
20 listed on the slide. And they include siting,
21 radiological consequence analysis, transient and
22 accident analyses, structure, systems, and components,
23 protective coating systems, instrumentation and
24 control, electrical system design, and radioactive
25 waste management.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 CHAIR REMPE: So I just had questions
2 here.

3 MS. LAURON: Sure.

4 CHAIR REMPE: This is something that you
5 provided for the public to provide, the next slide
6 actually.

7 MS. LAURON: Oh, sorry.

8 CHAIR REMPE: That's basically how the
9 public should provide comments.

10 MS. LAURON: Correct.

11 CHAIR REMPE: And basically, for this
12 meeting, ACRS does things a little differently. So
13 I'm not sure you need to go through ---

14 MS. LAURON: Okay.

15 CHAIR REMPE: -- that.

16 (Simultaneous speaking.)

17 MS. LAURON: And then, so that brings me
18 to the Q&A. So I think, I'm not sure, but I know that
19 there were some earlier questions about the scope of
20 the ISG. So I'm hoping that my presentation clarified
21 that the ISG is for the light water reactor
22 construction permit applications, the safety review of
23 those light water reactor construction permit
24 applications.

25 The scope, right, is the existing

1 licensing framework. It capitalizes on the existing
2 review guidance in NUREG 0800, right. It does
3 reference these. We've spoken about level of detail.
4 You know, we believe that the applicants can gain
5 insights on the appropriate level of detail for a
6 construction permit using some of the existing
7 regulatory guides.

8 Reg Guide 1.70, we recognize was last
9 updated in 1979. However, you know, it does provide
10 good information with respect to several chapters.
11 And the application would address those certain topics
12 and the level of detail expected.

13 Certainly Reg Guides 1.206, it was
14 mentioned in the initial issuance in 2007, the Rev 1
15 update in 2018. Although those were directed for, a
16 single application level of detail is also provided
17 there. But most especially, going back to NUREG 0800,
18 along with the appendix information to the ISG, you
19 know, we feel it provides sufficient information for
20 how the staff would approach the safety review of the
21 construction permit application.

22 So I think I had another question that I
23 wrote down. But I'm not sure if, I think I answered
24 them. I don't know if the other members or the
25 members have additional questions.

1 CHAIR REMPE: I see a couple of hands up.
2 Vicki, do you want to go first?

3 MEMBER BIER: Yes, I can go first. I have
4 two main questions. One is the draft ISG says that
5 applicants are supposed to, or staff considers there's
6 population but also projected future population
7 distribution.

8 And I know for the current sites, I mean,
9 some of them were remote when they were built and are
10 still very remote today. Some of them were remote
11 when they were built, and we have discovered over time
12 that, gee, they're now in a pretty high density kind
13 of suburban area with lots of towns nearby that was
14 not envisioned when they were built. And has any
15 thought gone into that issue of how to deal with
16 projected future population?

17 MS. LAURON: Okay. So unfortunately, I
18 wasn't prepared to go into details about the, you
19 know --

20 MEMBER BIER: Okay.

21 MS. LAURON: -- specifically for the
22 particular topic. But I can certainly take down the
23 comment and get back to you about whether it's being
24 considered for ---

25 MEMBER BIER: That would be super. Oh,

1 the other question, which really goes, I think, beyond
2 the intended scope of the document, and so let me know
3 if this is really kind of off base for today, which is
4 for emergency preparedness and response, we have a lot
5 of technologies that didn't exist in the 1970s or
6 whatever.

7 And is there thought to how an emergency
8 response might differ at new sites compared to just,
9 say, sirens which are a pretty crude method of
10 communicating.

11 MS. LAURON: Okay. All right. So I think
12 that, like, so I think I'd like to defer that also.

13 MEMBER BIER: Yes.

14 MS. LAURON: To go back to the technical
15 staff and get back to you on that.

16 MEMBER BIER: Sure, no problem.

17 MS. LAURON: Okay. All right. So those
18 are the two questions. Okay.

19 MEMBER BIER: Yes.

20 CHAIR REMPE: Dennis?

21 MR. BLEY: Yes. I raised something
22 earlier that I was hoping Carolyn would discuss. And
23 let me summarize it. It was what I think was one of
24 the important lessons learned during the construction
25 permits for the non-reactor facilities.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 And I went back more carefully through the
2 NSP. And the only thing that says on the topic is
3 that such further technical or design information, as
4 may be required to complete the safety analysis and
5 which can be reasonably be left out for later
6 consideration, will be supplied in the final safety
7 analysis report.

8 And that's true, but it doesn't get at the
9 issue that I think both me and the staff stumbled on
10 together. And let me read a couple of notes I wrote
11 to myself. I think if this, by NSP we had something
12 like a following, it would really help, at least these
13 concepts.

14 Two things, I think, are related and ought
15 to be here. One is more specific guidance on the
16 level and quality of safety analysis required. There
17 should have been a thorough and systematic search for
18 initiating events and scenarios in these accidents,
19 starting essentially with a blank sheet of paper to
20 figure these out.

21 Knowledge gaps that could obscure the
22 clarity of this search really need to have been
23 identified, even if you don't have detailed
24 calculations. And a complete identification of
25 possible consequences should be provided. The detail

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 of calculations of those things can wait, as those
2 were pretty complete that there aren't any things
3 lurking here we don't know about.

4 Related to that but more specific is a
5 thorough and systematic search among those accidents
6 for those that can be affected by, I'll call it,
7 construction details such as seismic interactions
8 among buildings, fire initiation and progression,
9 missile hazards and protections against missile
10 hazards, things that, once you built the building, are
11 hard to fix.

12 And for these kind of potential accidents,
13 I think you need a little more detailed -- the
14 Applicant needs a little more detailed calculation
15 before the building piping systems and electric
16 cabling are in place.

17 And I think struggling over how you define
18 what needs to be there for the construction permit
19 was an issue. And I think something like I just
20 walked through would give you way to do that. And
21 that's all.

22 MS. LAURON: Okay. Thank you.

23 MEMBER BROWN: Yes, I've got a question
24 also, if that's okay.

25 CHAIR REMPE: Sure, Charlie.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

1 MEMBER BROWN: Suggestion, when I went
2 through the ISG, the appendix, it was kind of an
3 expansion to give specific, not comments but insight
4 into what you like, like siting. And there's a number
5 of issues, protective coatings, et cetera, et cetera.
6 They reference various items. In the INC Section,
7 this is an ISG that was, you hit a lot of the top
8 level stuff we talk about.

9 But we recently revised IFG6 which is the
10 licensing process for the IS, for instrumentation and
11 control. That was in 2018, I think, for Rev 2 where
12 it took into account lessons learned. And largely,
13 the ISG, it would be interesting to reference that in
14 this ISG since it has a bunch of information that
15 people can understand or see, you know, what they can
16 do in preparation for this construction permit.

17 So that's just a suggestion. You can do
18 what you want. But seems to me that's valuable
19 information in terms of what people will be looking
20 for as opposed to just the high level comments that
21 you made in this particular ISG. It's just a thought.

22 MS. LAURON: Okay. I take your point.

23 CHAIR REMPE: So I note that the
24 individual comments are coming from consultants and
25 members. And I actually had a couple too I wanted to

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 add. But at the end of this discussion, we might have
2 the members weigh in on whether we want to have a
3 briefing and do a letter on this in the future. But
4 that discussion won't be finalized until the February
5 P&P.

6 But the two comments I wanted to mention
7 were, again, things that were in our lessons learned
8 NuScale letter, although it was for Part 52. But it
9 applies to construction permits about the completeness
10 of the, in this case, a conceptual or a proposed
11 design that, I guess it goes along with what Dennis is
12 saying about that it's sufficient to demonstrate that
13 all SSCs important to safety are identified. That is
14 in your document which I think is good. But that was
15 something we emphasized.

16 The other thing is that, in our
17 evaluation, we identified the need to go a bit longer
18 in the time period of the transient accident analyses
19 so that they're continued to the extent necessary to
20 ensure applicants demonstrate that an effective and
21 reliable means to place the plant in a safe, stable
22 condition with no ongoing degradation is provided.

23 And so maybe, as you talk about the
24 methods, and we've already mentioned the fact that the
25 methods should be approved at some point, we might

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 want to think about how long the analyses should be
2 conducted.

3 MS. LAURON: Okay.

4 CHAIR REMPE: So are there any other
5 comments from members or consultants?

6 So I guess, because we are going to be
7 discussing this in the upcoming -- because this is the
8 end of the meeting. And before we go to public
9 comments, I want (audio interruption) to have any
10 closing comments after the public about where they're
11 standing on whether we want to have an additional
12 briefing on this interim staff guidance or not, and
13 any other final thoughts.

14 But at this time, I'd like to open the
15 line, so to speak, for public comments. And, Mike
16 Snodderly, you can correct me, but my understanding is
17 all that the public would need to do is press Star 6
18 and provide those comments.

19 MEMBER BROWN: Can I make one comment?
20 Has this ISG been put out for public comment yet?

21 CHAIR REMPE: Yes, Charlie.

22 MEMBER BROWN: And received?

23 CHAIR REMPE: I think it was discussed
24 earlier in the meeting that it's out for a 45-day
25 public comment.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

1 MEMBER BROWN: It's out now. We haven't
2 received public comments yet.

3 CHAIR REMPE: No, we have not.

4 (Simultaneous speaking.)

5 CHAIR REMPE: At a later time, where we
6 come back --

7 MEMBER BROWN: That's all I needed, Joy.
8 I wasn't sure whether it had been send out. I saw
9 the note, but I didn't know whether it had been sent
10 out or not.

11 CHAIR REMPE: Okay. So, Mike, not only am
12 correct, all they need to do is --

13 MR. SNODDERLY: Yes.

14 CHAIR REMPE: -- press Star 6?

15 MR. SNODDERLY: You are correct. Any
16 member of the public that would like to make a
17 comment, please hit Star 6, and you should be able to
18 make your comment.

19 MS. FELTUS: Hello, this is Madeline
20 Feltus from the Department of Energy. I have a
21 question. On January 6th, the NRC dismissed the
22 application for the Oklo Aurora design based on not
23 having enough information after 22 months of back and
24 forth. And the letter that was written on January 6th
25 basically its, like, nine pages of, you know, what

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 not to do as an applicant.

2 So my question is, if you compare what is
3 outlined for power systems in Oklo, there is a, I'll
4 call it lessons learned here, what to do and not to do
5 as an applicant.

6 I mean, the good news is that the NRC got
7 back to them and said, okay, without prejudice we're
8 not going to look at your design. But after 22 months
9 it was, you know, declined but when they originally
10 accepted it. They said okay, there's enough stuff
11 there, and we'll ask or request for additional
12 information.

13 So my question is has the NRC staff looked
14 at this as a case of what to avoid and how to
15 accommodate that? Because they were going for a 52
16 license.

17 CHAIR REMPE: Okay. So, Madeline, I need
18 to remind you that this is time for public comments.
19 And so it would not be appropriate for ACRS members or
20 the staff to respond to your question. But we do take
21 your question into consideration during our
22 deliberations. Okay?

23 MS. FELTUS: Okay, no problem. I just
24 wanted to raise it, because it was, you know, it
25 didn't look good for the NRC. And it certainly didn't

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 look good for Oklo. And then we hit the trade press
2 earlier this month.

3 CHAIR REMPE: Thanks again your --

4 MS. FELTUS: No problem.

5 CHAIR REMPE: Okay, thanks again for your
6 comment. Are there any other members of the public
7 who would like to provide a comment at this time?

8 So I think we've done the five second
9 rule. So at this time, I guess I'd like to see if any
10 members want to provide any thoughts. Or do you want
11 to wait until the February P&P when we bring up the
12 ISG again or if there are any other comments you'd
13 like to make?

14 MS. FIELDS: This is Sarah Fields.

15 CHAIR REMPE: Oh, I'm sorry. I thought
16 the public was done. Never mind, it was ---

17 (Simultaneous speaking.)

18 CHAIR REMPE: Sarah, go ahead.

19 MS. FIELDS: Yes. I thought I had pressed
20 Star 6, but it didn't connect. But it's connected
21 now.

22 I'm with this organization, Uranium Watch,
23 in Utah. I want to just briefly touch on two things
24 related to public participation.

25 We have a big problem right now with the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

1 NRC. And that is the failure of the NRC to properly
2 docket new and maybe even old licensing records with
3 the project they're not accessioning them to the
4 proper docket or any docket at all.

5 I recently did a review of the Oklo
6 Aurora, the TerraPower Natrium, and the NuScale SMR
7 documents on ADAMS, and I found that there were a lot
8 of documents that were not docketed to any license
9 docket number.

10 Right now, when you have a pre-licensing
11 review process, you have a docket number that starts
12 with 999, and then you will have your part, Part 40 or
13 Part 52 docket, when documents are submitted. And
14 sometimes the license application documents are on the
15 pre-application docket. There are many documents that
16 are not on any docket.

17 And while you were talking, I checked the
18 Kairos docket. You have a pre-application docket with
19 218 records. And then you now have the new Part 50
20 docket which has four records. And the application
21 itself is on the pre-application docket, not on the
22 Part 50 docket.

23 I did a search for the title Kairos, and
24 I came up with 84 records that are not on either the
25 pre-application or the application docket. And these

1 are important documents. So I know how to search
2 records on ADAMS. But many people really don't know
3 how to dig into ADAMS to pull up records that are
4 really hidden away.

5 So I've already brought this to the
6 attention of the NRC staff. And they said that they
7 were making changes and looking into this. But just
8 going to the Kairos docket and seeing how there are so
9 many records that are not on either the pre-
10 application or the application docket, I don't think
11 the NRC staff is really doing what it can to correct
12 this situation. And it also reveals that the NRC's
13 oversight of their public record system is totally
14 inadequate.

15 I'd like to just follow-up with what the
16 woman from the Department of Energy discussed about
17 the Oklo application. And this is a whole issue of
18 the docketing of the application and hearing notice.

19 There were a number of organizations that
20 were concerned that the NRC staff issued a document
21 statement and a hearing notice for the Oklo first-of-
22 a-kind reactor, Part 52 application. And that was
23 before the staff determined that the application was
24 complete and there were glaring gaps in the
25 application. The NRC staff reviewed the application,

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

(202) 234-4433

www.nealrgross.com

1 and the NRC's own regulatory framework.

2 You have another big problem here. The
3 NRC staff should not go ahead and provide an
4 opportunity for intervention on an application before
5 the NRC has made a completeness determination. This
6 whole situation is, you know, it's almost a joke.
7 Because the NRC staff, in the end, determined that the
8 Applicant had not submitted and was not able to submit
9 a complete application.

10 So the NRC should not abandon its existing
11 docketing and hearing framework and its commitment to
12 a fair hearing process. There are going to be other
13 applications coming in to the NRC staff, and
14 prematurely providing an opportunity for members of
15 the public to intervene is just basically unfair.

16 The nuclear industry would like to put
17 small modular reactors and so-called advanced reactors
18 in communities that have had no experience whatsoever
19 with the NRC. And it's even more difficult when the
20 NRC goes forward and wants members of the public to
21 submit hearing requests when they haven't even
22 determined that the application is complete for a full
23 and thorough safety review. Thank you.

24 CHAIR REMPE: Thank you for your comments.
25 So again, I'll ask if there are any other members of

1 the public who want to comment today, at this time?

2 And then I'd like to go back to asking the
3 members and consultants participating in this meeting
4 if they have any comments they'd like to bring up at
5 this time.

6 So not hearing anything else, I want to
7 thank the staff for this meeting and their
8 presentations. I think it's been good to have this
9 informal discussion. And we'll discuss further what
10 we're going to do on the ISG, as I mentioned earlier,
11 in our meeting that's coming up in February. And with
12 that, I guess I will close the meeting. And thanks
13 again, everybody.

14 MEMBER DIMITRIJEVIC: Thank you all.

15 MEMBER BROWN: Yes, take care.

16 CHAIR REMPE: You to.

17 (Whereupon, the above-entitled matter went
18 off the record at 5:49 p.m.)
19
20
21
22
23
24
25

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1716 14th STREET, N.W., SUITE 200
WASHINGTON, D.C. 20009-4309

Staff Presentation on New and Advanced Reactor Licensing Processes

January 20, 2022

2:00pm – 5:30pm

Agenda

Topic	Slide
Opening Remarks	3
Purpose of Today's Presentation	5
Overview of Licensing Processes	6
Pre-application Activities	14
Activities Supporting an Efficient Review	17
Review and Assessment of White Papers	18
Review and Evaluation of Topical Reports	21
Staff Review Process Enhancements	24
Light-Water Reactor Construction Permit Interim Staff Guidance	34

Opening Remarks

Key Messages

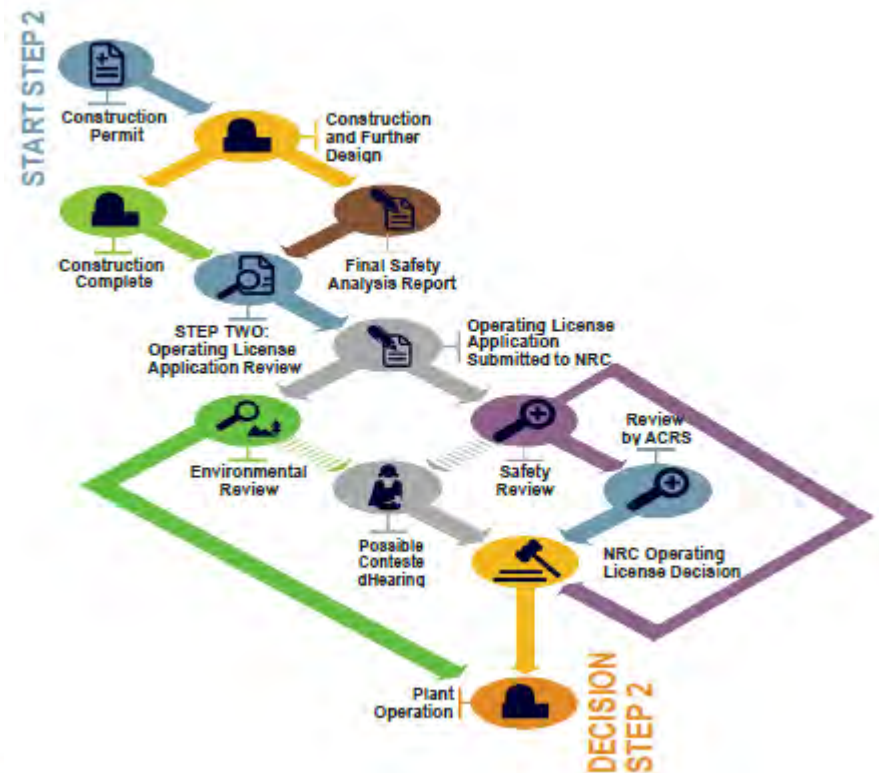
- Licensing of new and advanced reactors available under 10 CFR Parts 50, 52, and 53 (in development)
- Pre-application activities have been effective in preparing for application reviews
 - Pre-application engagement
 - Review and Assessment of White Papers
 - Review and Evaluation of Topical Reports
- Based on lessons learned, the NRC is enhancing its review processes with formal guidance and updates to its internal procedures

Purpose

To discuss the activities supporting the new and advanced reactor licensing processes under 10 CFR Part 50 and 52

- How the responses to white papers and the evaluations of topical reports fit into a future licensing action.
- How the staff is streamlining its review process.

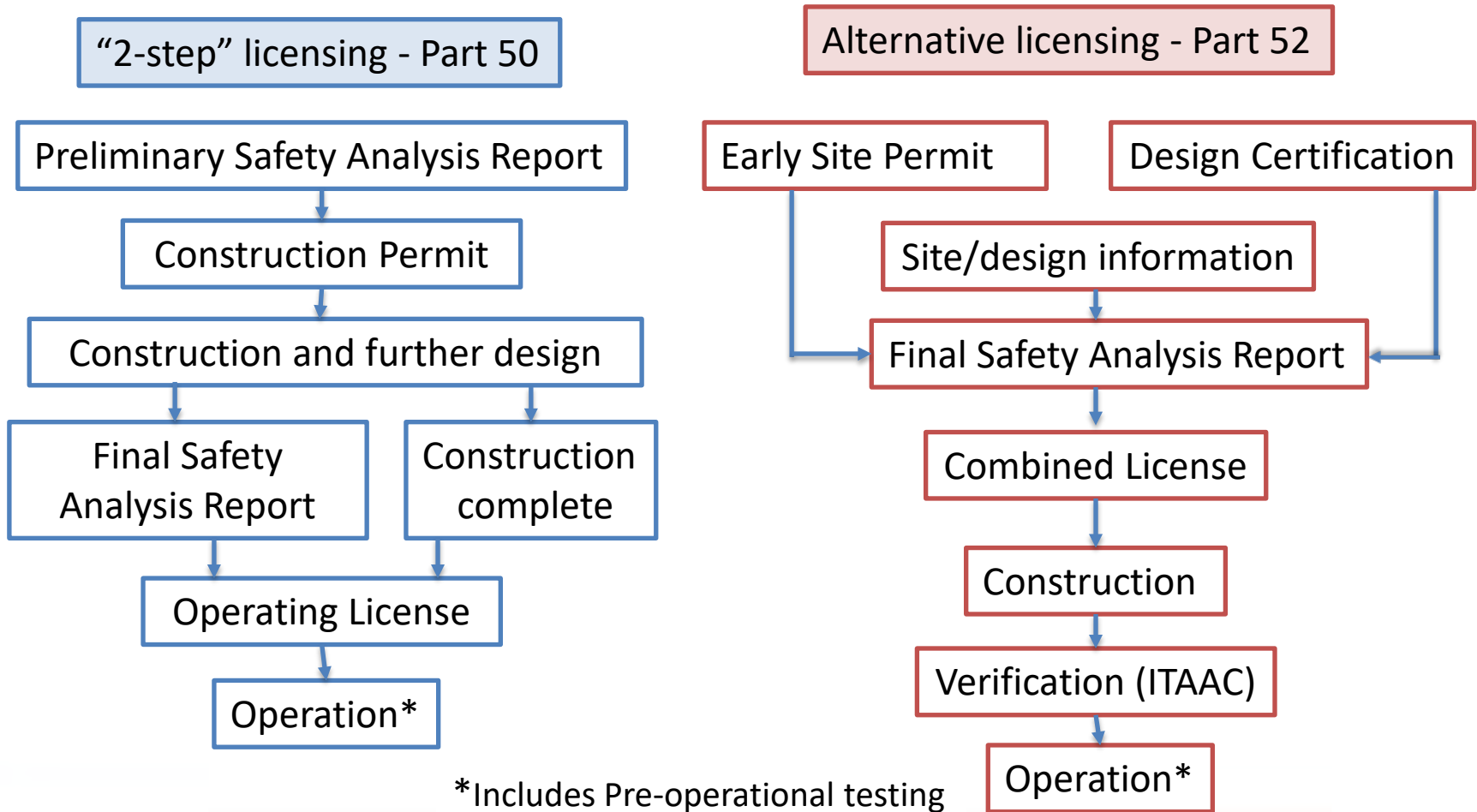
Overview of the 2-Step Licensing Process under 10 CFR Part 50 (Construction Permit and Operating License)



Overview of the 1-Step Licensing Process under 10 CFR Part 52 (Combined Construction and Operating License)



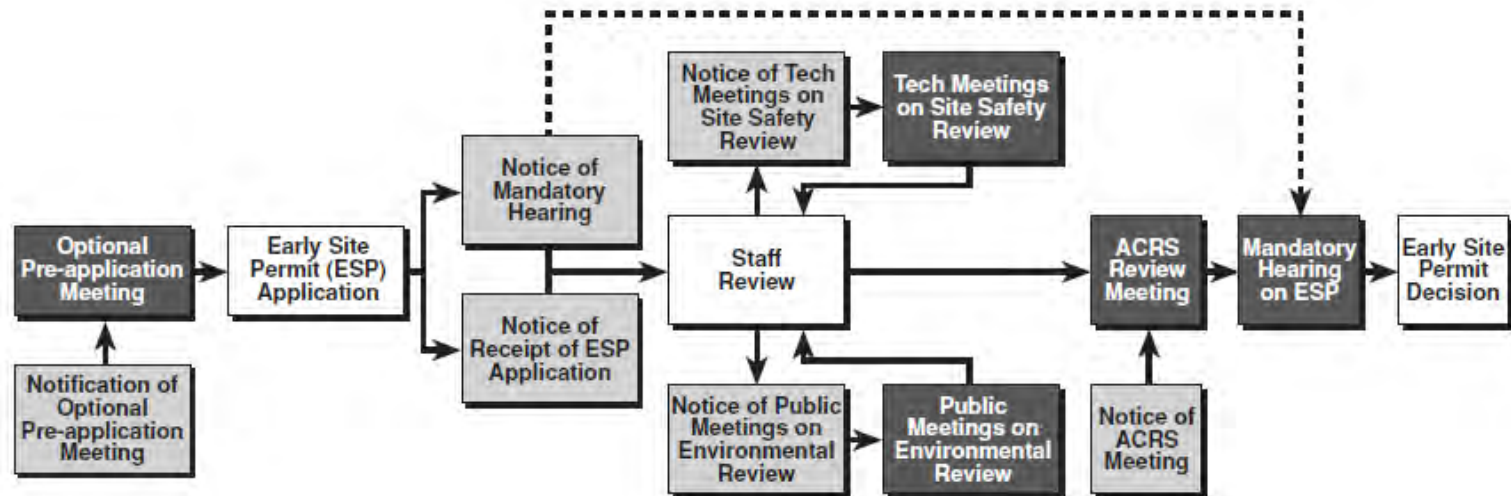
10 CFR Part 50 vs. 10 Part 52 Licensing Processes



Additional Licensing Processes Under 10 CFR Part 52

- Early Site Permits
- Standard Design Certification
- Manufacturing License
- Duplicate Plant License
- Standard Design Approval
- Site Suitability Reviews

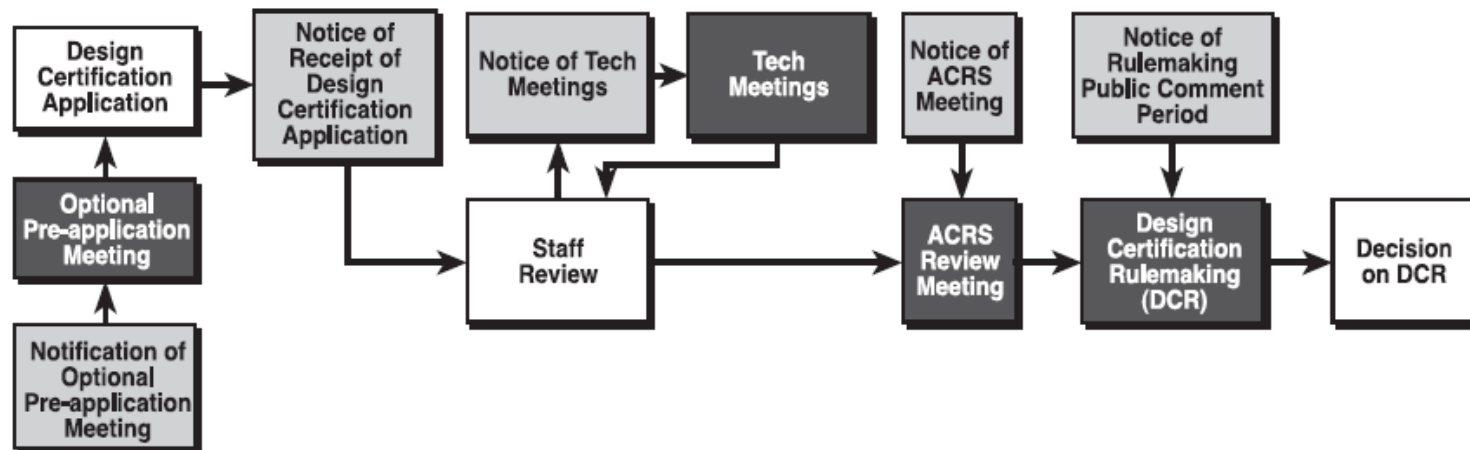
Opportunities for Public Involvement in the 10 CFR Part 52 Early Site Permit Process



Key:

-  Notification of Opportunity for Public Participation
-  Opportunity for Public Participation
-  Milestone Activities

Opportunities for Public Involvement in the 10 CFR Part 52 Design Certification Process



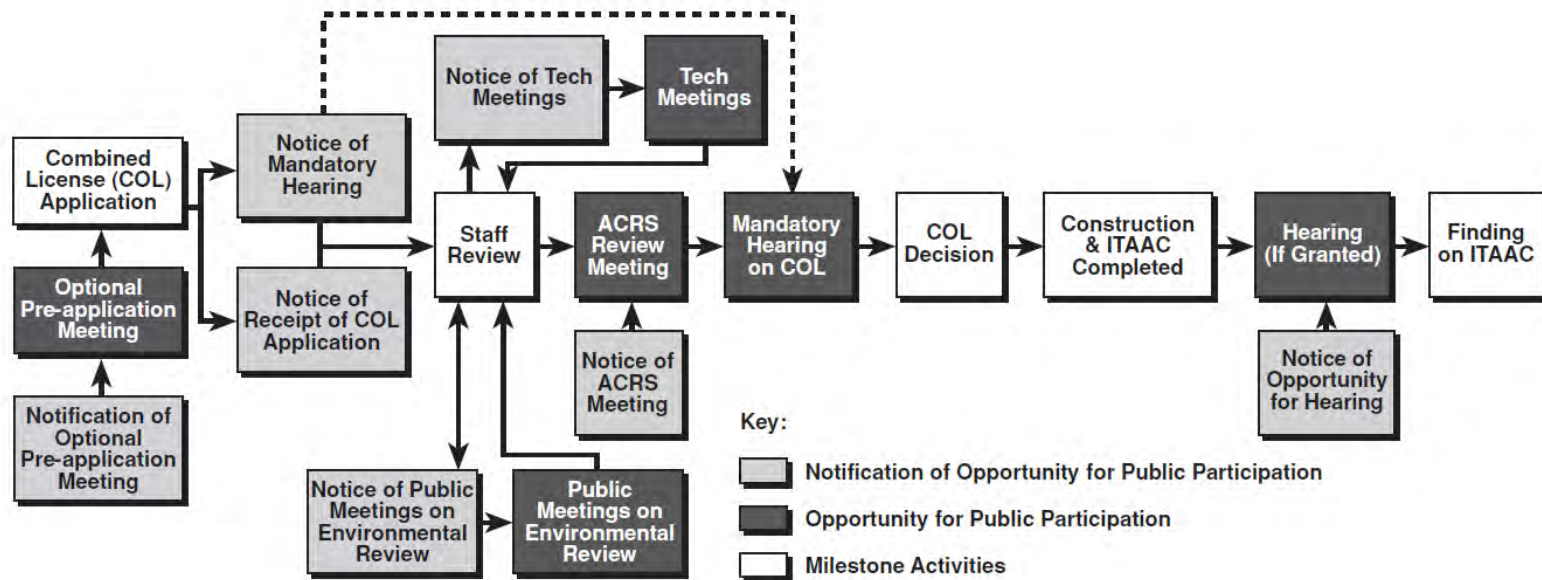
Key:

 Notification of Opportunity for Public Participation

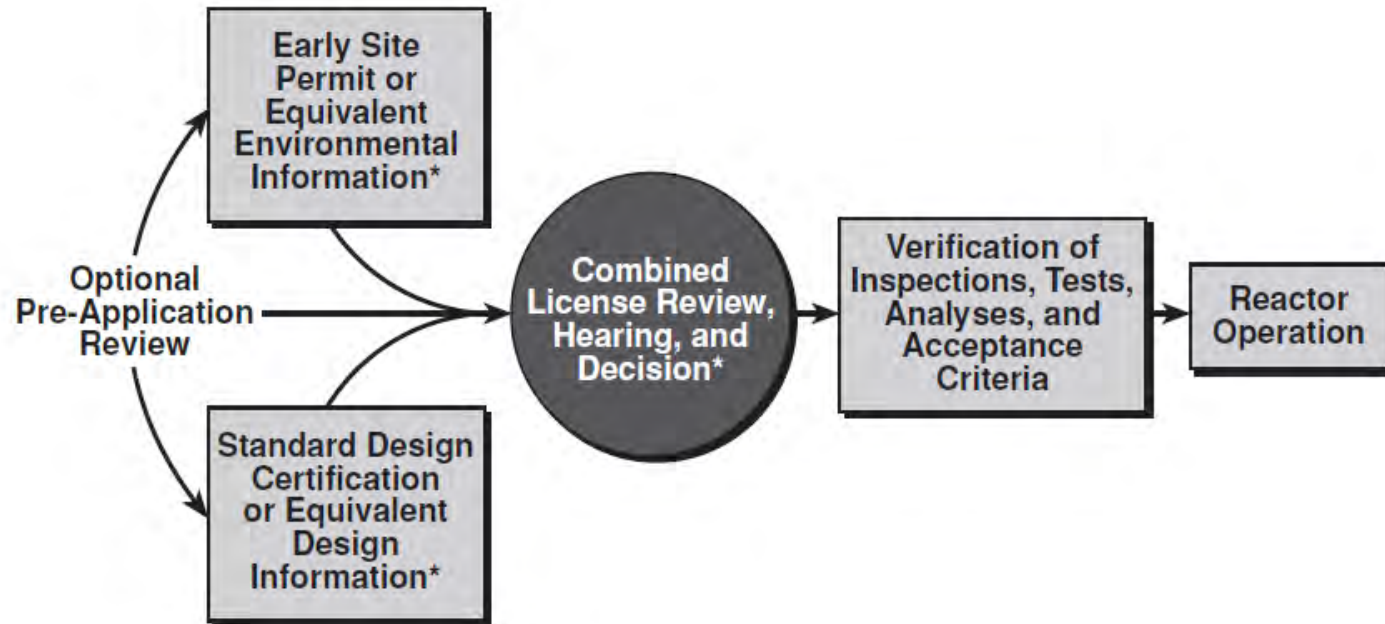
 Opportunity for Public Participation

 Milestone Activities

Opportunities for Public Involvement in the 10 CFR Part 52 COL Process



Relationship Among Combined Licenses, Early Site Permits, and Standard Design Certifications



*A combined license application can reference an early site permit, a standard design certification, both, or neither. If an application does not reference an early site permit and/or a standard design certification, the applicant must provide an equivalent level of information in the combined license application.

Pre-Application Activities

Supporting the Licensing Process

- Pre-application engagement ([ML21145A106](#))
- NRC response to applicant's general correspondence
- NRC review of and feedback on applicant's regulatory engagement plan ([ML18122A293](#))
- NRC assessment and response to applicant's white papers
- NRC evaluation of applicant's technical and topical reports
- Pre-application audits to support a high-quality application.

Pre-application Engagement ([ML21145A106](#))

Advantages for Applicants	Advantages for NRC
Enhanced regulatory predictability, reducing project risk	Greater review efficiency because NRC staff becomes familiar with the design and develops topical report safety evaluations that can be referenced by the application safety evaluation report
Greater review efficiency because NRC staff becomes familiar with design. Efficiency translates to lower costs and shorter review schedules	Early public engagement on the attributes of a design, increasing transparency and enhancing public awareness
Early interactions between the NRC, the applicant, and other agencies that have a role in the environmental review could shorten the licensing review schedule.	NRC staff becomes familiar with new approaches an applicant is considering and unique environmental aspects of a site
Early engagement with the Advisory Committee on Reactor Safeguards (ACRS) through the review of safety evaluations on topical reports. This early ACRS involvement will improve regulatory reliability and shorten application review times.	Early engagement with the ACRS through the review of safety evaluations on topical reports. This early ACRS involvement will reduce the number of issues addressed during the application review and lessen the effort of application review.

Best Practices

- Conducting face-to-face page-turn activity with applicable technical staff
- Issuing regulatory gap analysis letters to identify unique areas of designs
- Reviewing consensus codes and standards, and incorporating it into staff guidance
- Reviewing other supporting documents or programs
- Conducting rulemaking and developing or updating guidance

Activities Supporting An Efficient Review

- Submission of a high-quality application
- Use of a risk-informed approach to focus staff resources on review areas commensurate with their safety significance
- Complete and timely submission of responses to requests for additional information
- Use of a tracking process for the highly challenging issues (HCIs)
- Early coordination with technical, management, and legal staff on HCIs
- Use of audits in areas involving first-of-a-kind design features and to support resolution of RAIs and HCIs
- Use of an electronic reading room to share information where the design is evolving
- Use of a core review team and charter to facilitate efficient reviews.

Review and Assessment of White Papers

An applicant may submit a white paper to the NRC seeking *informal* feedback and can allow the preliminary design review to be focused on the technical issues related to the safety of the design.

The NRC's response does not constitute an agency position or provide any finality or backfit protection.

The objective of a white paper is to increase applicant's understanding, to explore problems, or address how to make a design specific decision.

There are no specific requirements or guidance for the development, or the NRC staff review of white papers.

Benefits arising from applicant's white papers

- Preliminary regulatory feedback in response to applicant requests. Examples include:
 - licensing approaches
 - proposed format and outline of an application
 - applicability of regulations to a design
 - applicable consensus codes and standards
 - qualification strategies, methodologies, testing plans
 - proposed principal design criteria, postulated initiating events, SSC classification
 - staffing approaches, EPZ sizing, transportation and packaging
- NRC staff gains knowledge of a design and possible license approaches by an applicant

Relationship between white papers and a future license application

- Discussed in the applicant's regulatory engagement plan
- Feedback used by applicant to develop its application
- Dependent on topic of white paper
- Supports the applicant's abilities to assess alternatives and to further progress its design
- Supports the staff's review prioritization that could affect expected regulatory outcomes
- *Less specificity and less regulatory certainty than topical reports*

Review and evaluation of topical reports

An applicant may submit a topical report for review and approval that contains technical information about:

- A reactor
- Structures, systems and components
- A safety topic
- A methodology

Non-LWR applicants commonly submit topical reports on the applicability of regulations and principal design criteria.

A topical report may reference technical reports that provide results of research, testing, or analyses to help verify or validate computer models, or other supporting information for a license application.

Guidance on the NRC staff's review of topical reports is found in [NRR Office Instruction LIC-500, "Topical Report Process"](#)

Benefits arising from topical report reviews

- Early review and feedback of technical information by ACRS
- Improves efficiency of licensing process by allowing NRC staff review of methodologies, designs, and operational requirements subsequently referenced in a license application
- Facilitates regulatory certainty on key methodologies, designs, and operational requirements subsequently referenced in a license application
- Early identification of potential policy issues
- May provide a technical basis for a licensing action
- Used extensively for obtaining NRC staff findings on proposed design features and analysis methods.

Relationship between topical reports and a future license application

- Discussed in the applicant's regulatory engagement plan
- Staff findings expected to be referenced in a license application
- Conditional staff findings expected to be addressed and reviewed in a license application
- *More specificity and more regulatory certainty than white papers*

Staff Review Process Enhancements

- Developing and Completed Review Guidance
 - Light-water Power-Reactor Construction Permit Interim Staff Guidance ([ML21165A157](#))
 - NuScale lessons learned Report (to be issued early 2022)
 - Contents of Applications TICAP/ARCAP
 - Updated NRC Staff Draft White Paper Analysis of Applicability of NRC Regulations for Non-Light Water Reactors ([ML21175A287](#))
 - Interim Staff Guidance, COL-ISG-029. Environmental Considerations Associated with Micro-reactors ([ML20252A076](#))
 - RG 1.232 Advanced Non-LWR Reactor Design Criteria ([ML17325A611](#))
 - RG 1.233 Licensing Modernization Project/NEI 18-04 ([ML20091L698](#))

Staff Review Process Enhancements (continued)

- Continuing to streamline the safety evaluation reports
 - Removing history of responses to requests for additional information
 - Improving quality and readability of the SER
 - Establishing writing standards for sections in the SER using plain language and focusing on the information necessary to communicate the bases for NRC staff decisions
- Implementing a Flexible Review Process
 - Supports the [NEIMA generic milestone schedules](#)
 - Advisory Committee on Reactor Safeguards briefings planned early to support a focus on specific technical areas.

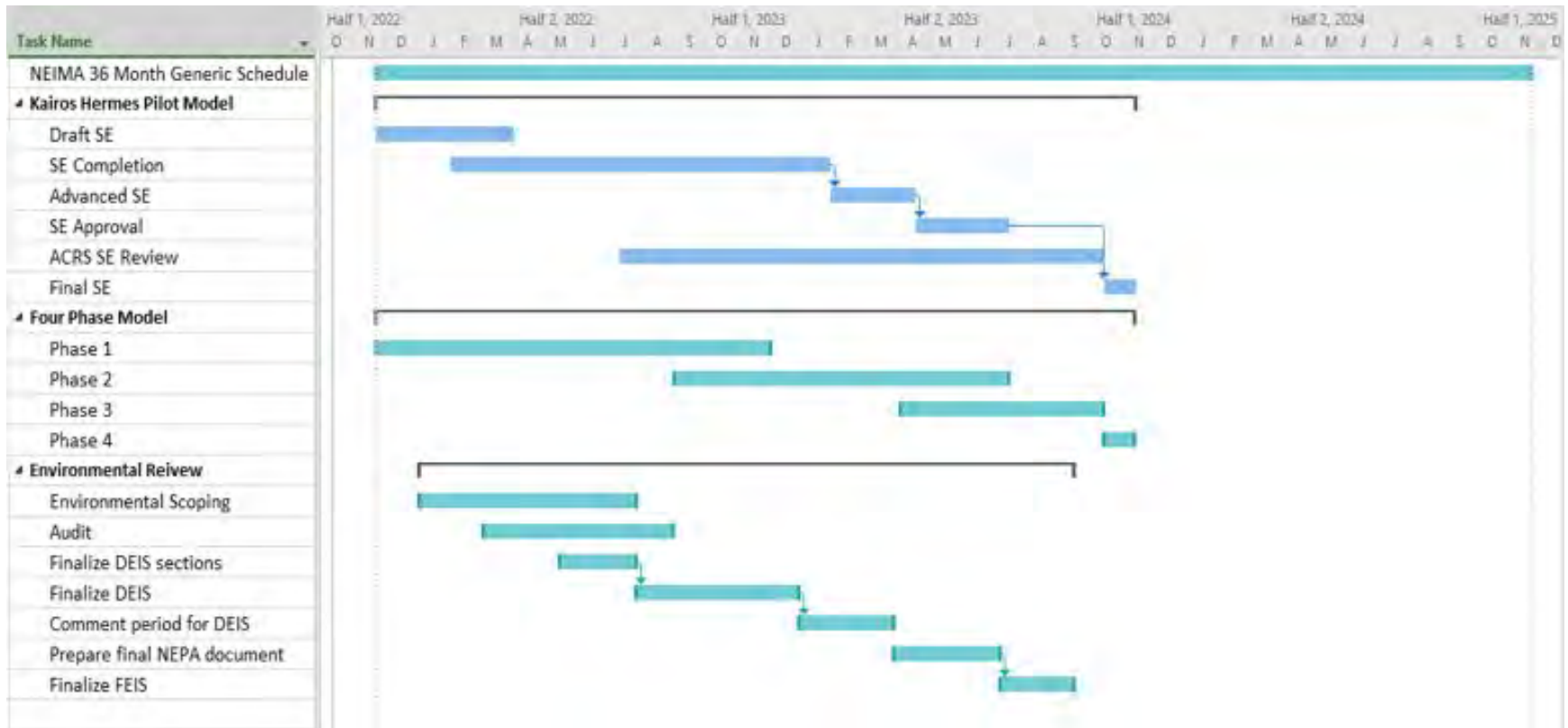
Comparison of Approaches

DANU proposal aligns with the 4 Phase Schedule because the SER with Open Items and ACRS Review of the SER with Open items are eliminated from the schedules. A comparison of this is shown in the table below:

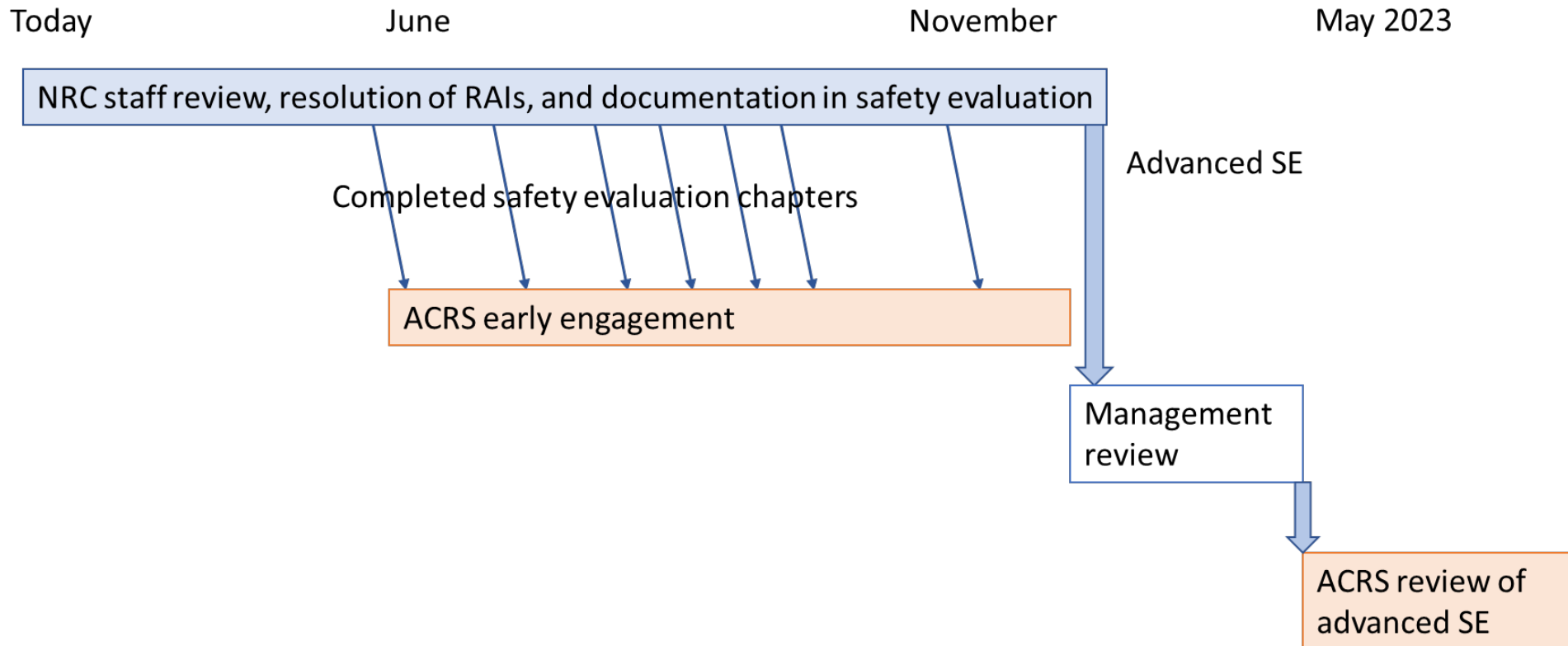
Kairos Pilot Model		4 Phase Schedule		6 Phase Schedule	
Milestone Group	Milestone Group Titles	Phase	Milestone Titles	Phase	Milestone Titles
1	Draft SER	A	Preliminary SER and RAIs Issued	1	Preliminary SER and RAIs Issued
2	SER Completion			2	SER with Open Items
3	Advanced SER	B	Advanced SER with no Open Items	3	ACRS Review of SER with Open Items
4	SER Approval			4	Advanced SER with no Open Items
5	ACRS SER Review	C	ACRS Meeting on Advanced SER	5	ACRS Review of Advanced SER with no Open Items
6	Final SER	D	Final SER Issued	6	Final SER with no Open Items Issued

Comparison of Approaches

COMPARISON OF REVIEW SCHEDULES



Engagement Envisioned for Hermes Review



Hermes - Kairos Dashboard

Overall Project Status

Schedule

Progress vs. Hours Spent

Technical Issue Resolution

Safety Review: Completion Status

8%

Completed



Acceptance Review

Pending



Draft SE

Pending



SE Completion

Pending



Advanced SE

Pending



SE Approval

Pending



ACRS SE Review

Pending



Final SE

Pending



Hearing

Environmental Review: Completion Status

8%

Completed



Acceptance Review

Pending



Environmental
Scoping

Pending



Initial Draft
Sections of DEIS

Pending



Complete DEIS
Sections

Pending



Finalize DEIS and
Related Activities

Pending



Comment
Responses and
FEIS

Pending



Finalize FEIS and
Related Activities

Pending



Hearing

<https://www.nrc.gov/reactors/non-power/hermes-kairos/dashboard.html>

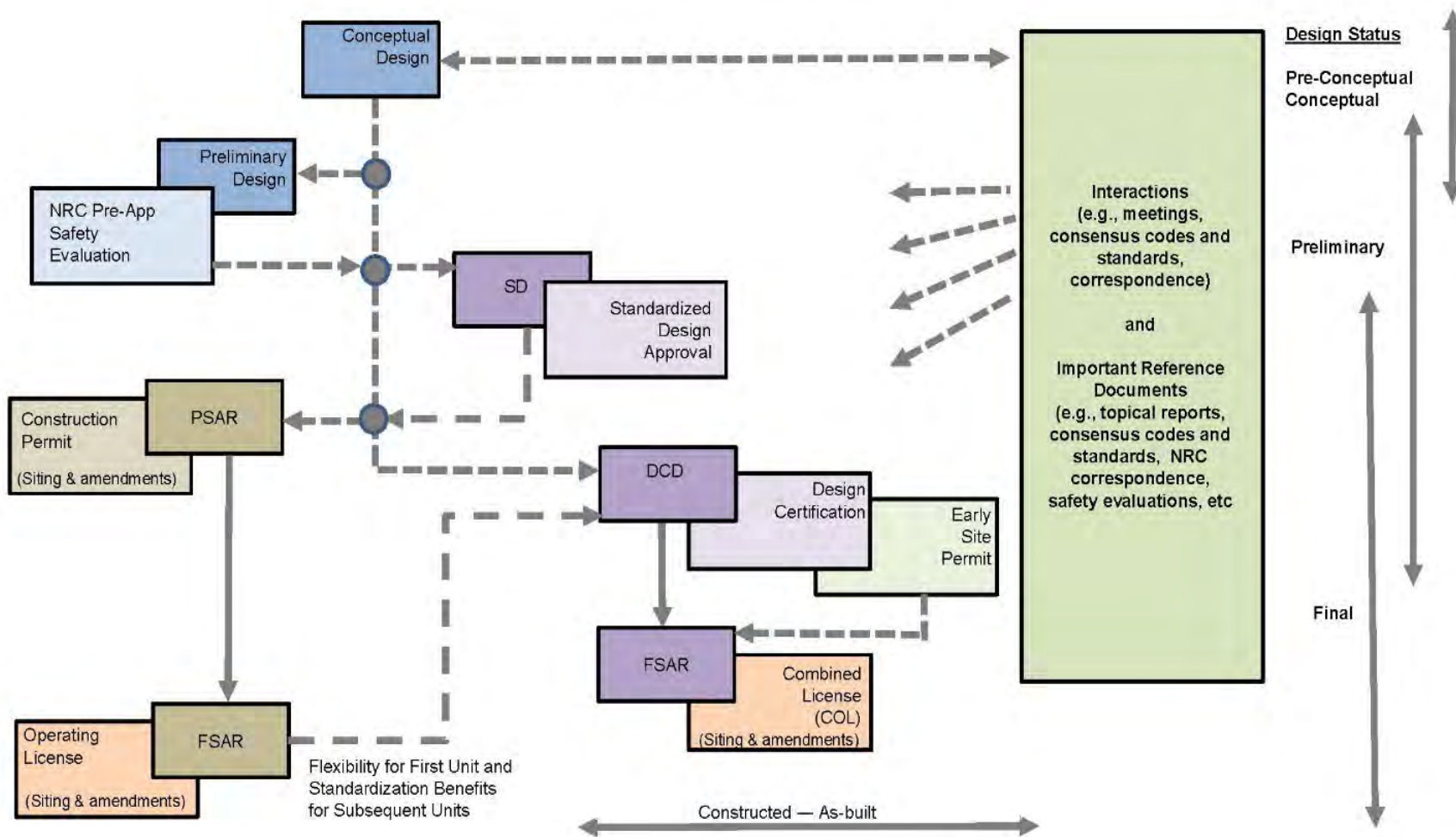
Key Messages

- Licensing of new and advanced reactors available under 10 CFR Parts 50, 52, and 53 (in development)
- Pre-application activities have been effective in preparing for application reviews
 - Pre-application engagement
 - Review and Assessment of White Papers
 - Review and Evaluation of Topical Reports
- Based on lessons learned, the NRC is enhancing its review processes with formal guidance and updates to its internal procedures

Questions & Answers

Backup Slides

NRC Related Licensing Processes



Draft Interim Staff Guidance for the Safety Review of Light-Water Power Reactor Construction Permit Applications

Carolyn Lauron
New Reactor Licensing Branch (NRLB)
Division of New and Renewed Licenses (DNRL)
Office of Nuclear Reactor Regulation (NRR)

What is the purpose of today's presentation?

To facilitate stakeholder understanding of the information contained in the construction permit interim staff guidance recently noticed in the *Federal Register* for comment. ([86 FR 71101](#))

This presentation should aid in the development and submission of stakeholder written comments consistent with the instructions in the *Federal Register* notice.

Why was the interim staff guidance developed?

- NRC anticipates the submission of construction permit applications.
- NRC last reviewed and issued a light-water power-reactor construction permit in the 1970s.
- Recently, NRC reviewed and issued licenses using the one-step process in 10 CFR Part 52.
- There are ongoing NRC activities to realign the requirements in 10 CFR Parts 50 and 52, and to develop guidance for non-light-water reactor designs.

Availability of Draft ISG [DNRL-ISG-2022-XX](#)

On December 14, 2021, the NRC published a notice in the *Federal Register* requesting comments on the draft interim staff guidance by January 28, 2022. ([86 FR 71101](#))

The draft interim staff guidance may be found in the NRC's Agencywide Documents Access and Management System at this link: [ML21165A157](#)

Scope of Draft ISG [DNRL-ISG-2022-XX](#)

The scope of the interim staff guidance is the safety review of light-water power-reactor construction permit applications.

The interim staff guidance supplements the existing review guidance for light-water power-reactor applications found in NUREG-0800.

Parts of Draft ISG [DNRL-ISG-2022-XX](#)

- Main Body of Document
 - Purpose, Background, Rationale, Applicability
 - Guidance
 - Implementation
 - Backfitting and Issue Finality Discussion, Congressional Review Act
 - Final Resolution
 - References
- Appendix

Guidance in Draft ISG [DNRL-ISG-2022-XX](#)

Guidance Subsections

- Requirements for a Power Reactor Construction Permit Application
- Light-Water-Reactor Safety Review Guidance
- Special Topics
 - Relationship between the Construction Permit and Operating License reviews
 - Purposes and benefits of preapplication activities
 - Lessons learned from recently issued construction permits
 - Approach for reviewing concurrent license applications and applications incorporating prior NRC approvals
 - Potential effect of ongoing regulatory activities on construction permit reviews and
 - Licensing requirements for byproduct, source, or special nuclear material.

Appendix to Draft ISG [DNRL-ISG-2022-XX](#)

- Supplements existing guidance in NUREG-0800
 - Reiterates the context, expected engagement, and review approach
 - Clarifies guidance for *selected safety-related topics*
- Not intended to include all topics expected and reviewed in a construction permit application.

Clarifications in Appendix to Draft ISG [DNRL-ISG-2022-XX](#)

Select topics discussed:

- Siting
- Radiological Consequence Analyses
- Transient and Accident Analyses
- Structures, Systems, and Components
- Protective Coatings Systems
- Instrumentation and Control
- Electrical System Design and
- Radioactive Waste Management

Submitting Comments on [DNRL-ISG-2022-XX](#)

Link to *Federal Register* notice: [86 FR 71101](#)

Two ways to submit comments:

1. **Federal Rulemaking Website:** Go to <https://www.regulations.gov/> and search for **Docket ID NRC-2021-0162**.
 - Address questions about Docket IDs in Regulations.gov to Stacy Schumann; telephone: 301-415-0624; email: Stacy.Schumann@nrc.gov
 - For technical questions, contact Carolyn Lauron, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, telephone: 301-415-2736, email: Carolyn.Lauron@nrc.gov
2. **Mail comments** to: Office of Administration, Mail Stop: TWFN-7-A60M, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, ATTN: Program Management, Announcements and Editing Staff.

Questions and Answers

Full Name	User Action	Timestamp
Snodderly, Michael	Joined	1/20/2022, 1:37:06 PM
Lauron, Carolyn	Joined	1/20/2022, 1:37:06 PM
Dashiell, Thomas	Joined	1/20/2022, 1:37:06 PM
Court Reporter - Sam Wojack (Guest)	Joined	1/20/2022, 1:37:06 PM
Rempe, Joy	Joined	1/20/2022, 1:37:06 PM
Sunseri, Matthew	Joined	1/20/2022, 1:38:44 PM
Burkhart, Larry	Joined	1/20/2022, 1:40:30 PM
Halnon, Gregory	Joined	1/20/2022, 1:48:06 PM
Beasley, Benjamin	Joined	1/20/2022, 1:49:38 PM
Walker, Sandra	Joined	1/20/2022, 1:50:57 PM
Walker, Sandra	Left	1/20/2022, 1:53:49 PM
Bier, Vicki	Joined	1/20/2022, 1:52:22 PM
Oesterle, Eric	Joined	1/20/2022, 1:52:26 PM
Ronald G Ballinger	Joined	1/20/2022, 1:52:52 PM
Widmayer, Derek	Joined	1/20/2022, 1:52:56 PM
Vesna B. Dimitrijevic	Joined	1/20/2022, 1:53:12 PM
Jose March-Leuba (ACRS) (Guest)	Joined	1/20/2022, 1:54:04 PM
Moore, Scott	Joined	1/20/2022, 1:54:09 PM
Smith - NRR, Brian	Joined	1/20/2022, 1:54:11 PM
Skov, Tammy	Joined	1/20/2022, 1:54:35 PM
Kirchner, Walter	Joined	1/20/2022, 1:54:46 PM
Dennis Bley (Guest)	Joined	1/20/2022, 1:55:10 PM
Nourbakhsh, Hossein	Joined	1/20/2022, 1:56:26 PM
Wang, Weidong	Joined	1/20/2022, 1:56:29 PM
Bowman, Eric	Joined	1/20/2022, 1:56:41 PM
Shams, Mohamed	Joined	1/20/2022, 1:57:01 PM
Dave Petti (Guest)	Joined	1/20/2022, 1:57:28 PM
Drucker, David	Joined	1/20/2022, 1:57:38 PM
Schultz, Stephen	Joined	1/20/2022, 1:57:52 PM
Dudek, Michael	Joined	1/20/2022, 1:58:38 PM
Brown, Charles	Joined	1/20/2022, 1:59:10 PM
Sebrosky, Joseph	Joined	1/20/2022, 1:59:15 PM
Kennedy, William	Joined	1/20/2022, 1:59:25 PM
de Messieres, Candace	Joined	1/20/2022, 1:59:30 PM
Hayes, Michelle	Joined	1/20/2022, 1:59:35 PM
Nakanishi, Tony	Joined	1/20/2022, 2:03:09 PM
Walker, Shakur	Joined	1/20/2022, 2:05:26 PM