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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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680TH MEETING

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

(ACRS)

+ + + + +

THURSDAY

NOVEMBER 5, 2020

+ + + + +

The Advisory Committee met via
Teleconference, at 9:30 a.m. EST, Matthew W. Sunseri,
Chairman, presiding.

COMMITTEE MEMBERS:

- MATTHEW W. SUNSERI, Chairman
- JOY L. REMPE, Vice Chairman
- WALTER L. KIRCHNER, Member-at-Large
- RONALD G. BALLINGER, Member
- DENNIS BLEY, Member
- CHARLES H. BROWN, JR., Member
- VESNA B. DIMITRIJEVIC, Member
- JOSE MARCH-LEUBA, Member
- DAVID PETTI, Member
- PETER RICCARDELLA, Member

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4. Regulatory Guide 1.200 Revision on Review and
Approval of New Methods for Light Water Reactors

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4.2. Presentation and Discussion with
Representatives from the NRC Staff and
Industry Representatives 7

P R O C E E D I N G S

9:30 a.m.

CHAIRMAN SUNSERI: Good morning, I have 9:30, the meeting will now come to order. This is the second day of the 680th Meeting of the Advisory Committee on Reactor Safeguards.

I'm Matthew Sunseri, Chair of the ACRS. I will now call the roll to verify quorum and to ensure members are able to participate, starting with Ron Ballinger.

MEMBER BALLINGER: Here.

CHAIRMAN SUNSERI: Dennis Bley?

MEMBER BLEY: I'm here.

CHAIRMAN SUNSERI: Charles Brown?

MEMBER BROWN: Here.

CHAIRMAN SUNSERI: Vesna Dimitrijevic?

MEMBER DIMITRIJEVIC: I'm here.

CHAIRMAN SUNSERI: Walt Kirchner?

MEMBER KIRCHNER: Here.

CHAIRMAN SUNSERI: Jose March-Leuba?

MEMBER MARCH-LEUBA: Yes.

CHAIRMAN SUNSERI: Dave Petti?

MEMBER PETTI: Here.

CHAIRMAN SUNSERI: Joy Rempe?

VICE CHAIRMAN REMPE: Here.

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1 CHAIRMAN SUNSERI: Pete Riccardella?

2 MEMBER RICCARDELLA: Here.

3 CHAIRMAN SUNSERI: Okay, great. We have a
4 quorum and everybody comes in loud and clear.

5 The Designated Federal Officer for this
6 meeting is Ms. Christiana Lui.

7 During today's meeting, the committee will
8 consider the following. They'll have a technical
9 presentation on Regulatory Guide 1.200 Revision on the
10 Review and Approval of New Methods for Light Water
11 Reactors.

12 Following that, we will continue with
13 preparation of reports, including preparation for our
14 Commission briefing.

15 A phone bridge line has been opened to
16 allow members of the public to listen in on
17 presentations and committee discussions. We received
18 no written comments or requests to make any oral
19 statements from members of the public regarding
20 today's session.

21 There will be an opportunity for public
22 comment, we have set aside time in the agenda for
23 comments from member of the public attending or
24 listening to our meeting.

25 Written comments may be forwarded to Ms.

1 Christiana Lui, the Designated Federal Officer.

2 A transcript of today's open portion of
3 the meeting, with the exception of our report
4 preparations and the planning and procedure session,
5 is being kept, and requested that the speakers
6 identify themselves and speak with sufficient clarity
7 and volume so that they can be readily heard.

8 Additionally, participants should mute
9 themselves when they're not speaking.

10 And I'll just add a note here for those
11 listening in on the phone line. We've been having
12 some general problems with the phone line lately, so
13 we do have members of our staff monitoring the phone
14 line for its operability and performance. And just
15 because you can't hear us, don't assume that we can't
16 hear you. And we will take action promptly to restore
17 functionality, so that you can provide your comments
18 when prompted.

19 Members, any questions about today's
20 agenda or where we're going? Or any general comments
21 you would like to make? Okay. I hear none, so I will
22 now turn to Member Dimitrijevic to lead us in the
23 discussion on Reg Guide 1.200. Vesna?

24 MEMBER DIMITRIJEVIC: Thanks, Matt. Good
25 morning. So, on February 5 this year, we were briefed

1 by the staff and industry representatives about the
2 update to Reg Guide 1.200 Rev 2 being prepared for
3 public comments. But the ACRS Reliability and PRA
4 Subcommittee request the staff has come back to brief
5 the full committee after completing the public comment
6 process.

7 Greg Bowman, the Deputy Division Director,
8 Division of Risk Assessment, NRR, will kick off today
9 briefing on the proposed Reg Guide 1.200 update.
10 Greg, the virtual floor is yours.

11 MR. BOWMAN: Thank you, Vesna. So, as it
12 was mentioned, my name is Greg Bowman, I'm the Deputy
13 Director of the Division of Risk Assessment in the
14 Office of NRR. I'd like to start off by thanking the
15 committee in advance for their review and feedback on
16 our draft Revision 3 to Reg Guide 1.200.

17 Reg Guide 1.200 is foundational to the
18 agency's ability to ensure high confidence that PRAs
19 used in risk-informed applications are technically
20 acceptable for those applications. So, your feedback
21 on this revision is particularly important to us.

22 One of the key elements of the revision is
23 the establishment of a framework to enable peer
24 reviews to be used to adopt newly developed PRA
25 methods.

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1 The use of the PRA peer review process, as
2 opposed to NRC staff review and approval of the PRA
3 and associated methods, is a practice that the
4 Commission approved about two decades ago. Since that
5 time, we the staff have been endorsing peer review
6 guidance and consensus PRA standards to support PRA
7 peer reviews.

8 Staff and industry identified the need for
9 improvement in the peer review guidance with respect
10 to PRA methods based on some challenges we experienced
11 during NFPA 805 review several years ago.

12 The proposed revision to Reg Guide 1.200,
13 among other things, will address that area for
14 improvement by endorsing a revised NEI guidance
15 document, that's NEI 17-07, along with a set of
16 approximately 20 requirements that were developed by
17 the PWR Owners Group for peer reviews of new and
18 developed PRA methods.

19 Those two sets of documents, once endorsed
20 in the reg guide, will be to establish technical
21 acceptability of newly developed methods through peer
22 reviews.

23 Ultimately, our goal with this revision is
24 to further enhance the efficiencies gained from the
25 peer review process, while ensuring a technical

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1 acceptable PRA and an appropriate level of NRC
2 oversight.

3 During our presentation, the NRC staff
4 will provide details on the revision and an overview
5 of how we addressed the comments that we received from
6 industry and from the public.

7 So, I'd like to thank you again and just
8 indicate we look forward to addressing any questions
9 or feedback from the committee. And with that, I'll
10 turn things over to Anders Gilbertson to kick off the
11 staff's presentation for us. Anders?

12 MR. GILBERTSON: Great. Thank you very
13 much, Greg. Good morning, everyone. Good morning,
14 full committee members.

15 My name is Anders Gilbertson. I am a
16 reliability and risk analyst in the Office of Nuclear
17 Regulatory Research Division of Risk Analysis. I'm
18 also the technical lead for Revision 3 of Regulatory
19 Guide 1.200. And related to those roles, I'm also the
20 NRC's program manager for the NRC's PRA Standards
21 Program.

22 So, I am joined this morning by Shilp
23 Vasavada, from NRR Division of Risk Assessment, as
24 well as Sunil Weerakkody, also from NRR Division of
25 Risk Assessment.

1 And so, this morning, we'll be giving a
2 presentation to just explain the staff's progress and
3 where we are with our final version, our draft final
4 version of Reg Guide 1.200 Revision 3.

5 I just want to double-check, I believe I'm
6 still sharing my screen, you should be able to see the
7 slides. Is that -- can someone confirm?

8 MEMBER BLEY: The introductory slide is up.

9 MR. GILBERTSON: Okay. Thank you. Okay.

10 So, this morning's presentation, first,
11 we'll just, I'll briefly discuss the purpose, which
12 I've already sort of gone over.

13 We'll go over some background on the
14 history of this revision, what prompted it and some of
15 the interactions that we had with public. The changes
16 that were incorporated into Revision 3.

17 We'll also have a brief discussion of the
18 subcommittee members' feedback that we received back
19 in February of 2020.

20 Sunil will talk about the primary
21 regulatory driver for Revision 3 and what really
22 prompted this revision.

23 Shilp will go through and talk about the
24 public comments that were received and how the staff
25 resolved those public comments on Draft Guide 1362,

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1 which was published for public review and comment.

2 And then, at the end, I will, Sunil and I
3 will discuss the path forward for Revision 3, and
4 then, also, subsequent revisions of Reg Guide 1.200.

5 So, again, the purpose of this
6 presentation is just to brief the ACRS full committee
7 and solicit feedback on the staff's resolution of
8 public comments on the staff's proposed Revision 3 to
9 Regulatory Guide 1.200.

10 As Dr. Dimitrijevic mentioned, the staff
11 went to the Subcommittee on Reliability and PRA and
12 presented before the public review and comment period
13 and we were asked to return to the ACRS after we
14 received public comments and had resolved them. So,
15 that is our purpose here today.

16 So, just some background, some general
17 background on Regulatory Guide 1.200. So, Reg Guide
18 1.200 provides an approach for determining the
19 technical acceptability of a base PRA model that is
20 used in regulatory decision-making related to light
21 water reactors.

22 The acceptability of the PRA is determined
23 with respect to the scope, level of detail, the
24 conformance to the consensus PRA standard technical
25 elements, this is sometimes more colloquial referred

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1 to as technical robustness, and also plant
2 representation, which relates to plant realism and
3 plant specificity.

4 So, this slide describes, this is slide
5 five, also, for anyone on the phone, this just
6 describes the overall paradigm of PRA acceptability
7 for light water reactors.

8 And Reg Guide 1.200 is the staff's vehicle
9 for endorsing consensus PRA standards and industry
10 guidance for light water reactors related to risk-
11 informed decision-making. Accordingly, this paradigm
12 has been established, as was mentioned before by Greg,
13 decades ago.

14 The base PRA is developed consistent with
15 the requirements and the PRA standards. The base PRA
16 is peer reviewed against the requirements in the
17 consensus PRA standard. And then, the development of
18 the base PRA and the performance of the peer review
19 are both done consistent with the NRC staff position
20 in Reg Guide 1.200, so, as we've endorsed those
21 industry documents.

22 So, each of these elements relies on the
23 other for the purpose of demonstrating acceptability
24 of the base PRA for risk-informed decision-making.
25 Licensees or applicants use Reg Guide 1.200 to

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1 determine acceptability of their base PRA obviates the
2 need for an in-depth staff review of the base PRA by
3 NRC reviewers.

4 And so, in doing so, that allows the staff
5 to focus their review on key assumptions and areas
6 identified by the peer reviewers as being of concern
7 and relevant to the application under consideration.

8 So, Reg Guide 1.200 is not in and of
9 itself used to implement specific parts of the NRC's
10 regulations. Rather, it is a supporting regulatory
11 guide that is invoked by other application-specific
12 guidance documents, where the acceptability of the
13 base PRA is important to the decision under
14 consideration.

15 Okay. So, this next slide six just is,
16 I'm going to talk a little more about PRA
17 acceptability and just how it relates to the
18 importance and reliance from the PRA for a specific
19 application.

20 The importance of the base PRA to a
21 decision is dependent upon how much the PRA is used.
22 Accordingly, if there's greater reliance on and
23 importance of the PRA, the more important the
24 acceptability of the base PRA becomes for that
25 application.

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1 So, for example, for applications such as
2 license amendment requests to implement your risk-
3 informed tech spec for bravo program, the PRA is
4 heavily relied upon for that decision-making. And so,
5 PRA acceptability of the base PRA becomes very
6 important.

7 That recognizes that the application PRA
8 is derived from the base PRA and may have differences
9 based on decisions made by the licensee. But in the
10 end, we are looking at the acceptability of the base
11 PRA from which those application PRAs are derived.

12 On the other end of the spectrum, the PRA
13 is less important for decision-making related to
14 requests for risk-informed inservice inspection
15 programs and, therefore, it plays a lower role.

16 So, this is a, it is a spectrum and what
17 is shown here just shows a general level of reliance
18 on, for some of these applications, risk-informed
19 applications that are used by licensees.

20 MEMBER BLEY: Anders, this is Dennis Bley.

21 MR. GILBERTSON: Yes.

22 MEMBER BLEY: I think it might be helpful
23 for my colleagues if you could talk a little bit about
24 how you use the peer review when you're reviewing a
25 risk-informed application.

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1 And what I'm getting at is, once the peer
2 review is complete, that doesn't say everything is
3 perfect, there's a pretty healthy catalogue of things
4 that could be beefed up in different ways, and how do
5 you go back to that and decide where you need to dig
6 more deeply?

7 MR. GILBERTSON: Sure, absolutely. Yes,
8 I'll talk about that and I'll also invite Shilp and
9 Sunil to jump in if they feel appropriate.

10 So, when the peer review for a base PRA is
11 completed, like Dr. Bley mentioned, there will be any
12 number of perhaps findings and observations or what
13 they're called, or I guess facts and observations.

14 These F&Os, as they're more commonly
15 referred to, they can range in level of importance
16 from just something that relates to documentation,
17 something that was missing in the documentation, all
18 the way to something that's more substantially wrong
19 or that points to the fact that a requirement in the
20 consensus PRA standard may not have been met. In most
21 cases, those are often referred to as finding level
22 F&Os.

23 So, when that's completed, the staff
24 receives a report that articulates what those F&Os are
25 and the staff are given opportunities to review those

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1 assessments, to help determine for those specific
2 areas where it might be of greater interest how is the
3 PRA is acceptable?

4 And the staff are able to go into and
5 submit requests for additional information to
6 interrogate the process and better understand why
7 something wasn't met, offering the licensees
8 opportunities to provide explanations, additional
9 explanations for why they might have a finding.

10 So, it is -- there is a back and forth and
11 the staff also are relying on the guidance in Reg
12 Guide 1.200, as well as previous reviews and such. Is
13 that helpful? Or, Shilp or Sunil, did you want to add
14 anything else?

15 DR. WEERAKKODY: Yeah, go ahead, Shilp,
16 please.

17 DR. VASAVADA: Sure, sorry, thanks. This
18 is Shilp Vasavada, I'm in the Division of Risk
19 Assessment in NRR. Just wanted to add a couple of
20 additional points to what Anders mentioned.

21 The licensee would submit these finding
22 level F&Os that Anders mentioned, along with
23 dispositions or resolutions for staff review when they
24 submit for staff review a particular risk-informed
25 application.

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1 The staff reviews the dispositions and
2 determines the appropriateness in the context of a
3 particular risk-informed application. It is not, you
4 can say that the review and decision is not across the
5 board for any risk-informed application.

6 The other point I wanted to mention was
7 that, I think Sunil is going to talk about it, there
8 is a process accepted by the staff called the
9 Independent Assessment Team Closure Review, which can
10 also come in and, again, that's a separate peer
11 review, close out the findings.

12 Basically, make a determination that they
13 were resolved in a technically acceptable manner to
14 take care of the technical deficiency that was pointed
15 out in the finding. And then, those findings are
16 closed and they don't need to be submitted then to the
17 NRC staff. Thanks.

18 MR. GILBERTSON: Okay.

19 MEMBER BLEY: Anders, that was helpful,
20 thank you.

21 MR. GILBERTSON: Okay, great. Great.
22 Okay. So, moving on to slide seven.

23 So, Revision 3 of Regulatory Guide 1.200
24 incorporates a number of changes, primarily, which are
25 related to the guidance for PRA peer reviews. As was

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1 mentioned earlier, the main driver is going to be the
2 new NEI 17-07 Revision 2 guidance document on PRA peer
3 reviews for LWRs, as well as the PWR Owners Group
4 report that articulated the 20-some requirements for
5 assessing the acceptability of newly developed
6 methods. And we'll talk about that in more detail as
7 we go along.

8 So, these are the primary changes. There
9 were some other changes. For example, the staff added
10 a new appendix to endorse a code case for the 2009
11 ASME/ANS Level 1 LERF PRA standard. This code case
12 only related to seismic PRA requirements and so,
13 essentially, this is a set of alternative requirements
14 for performing the seismic PRA.

15 And so, the staff provided, back, I
16 believe it was 2017, an acceptance of the requirements
17 in this code case. And so, all the staff did here is
18 to pull that forward and bring that acceptance and the
19 staff positions into Reg Guide 1.200 Revision 3. So,
20 that is the -- it's something that was essentially a
21 rote process of just pulling that endorsement forward.

22 Some other changes. So, Reg Guide 1.200
23 Revision 3 also adopts some terms that were defined in
24 the PWR Owners Group 19027 report. These were terms
25 that were discussed through a series of interactions,

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1 some workshops that were held by the Owners Group and
2 the discussions, we came to an agreement on what those
3 terms meant. There was an understanding that they
4 needed to be more clearly defined for these processes.
5 So, that's additionally what's provided in here.

6 And then, also, there's a set of
7 descriptions of hazards in Appendix Delta of 1.200
8 Revision 3. And this listing of hazard and their
9 descriptions are intended to be consistent with the
10 ASME/ANS 2009 Level 1 LERF PRA standard.

11 And, really, what that listing does is, in
12 going beyond what's in the Level 1 LERF PRA standard
13 from 2009 is that it provides those descriptions. It
14 really, it starts to describe and, in some ways,
15 define what is meant by some specific hazard that you
16 need to think about and consider as you perform your
17 base PRA.

18 I did want to point out that Reg Guide
19 1.200 Revision 3, it does retain the staff's
20 endorsement of ASME/ANS RA-Sa-2009, with the exception
21 of some of the terms and definitions that were
22 endorsed from the Owners Group report.

23 So, as we interacted with members of
24 industry in these workshops, developed those
25 definitions, when the staff sat down to endorse them,

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1 we understood and realized that we already had an
2 endorsement for similar definitions and terms in the
3 2009 standards.

4 So, that's the only change to the staff's
5 endorsement of the Level 1 LERF standard, is basically
6 just to say, for some specific terms, we're now
7 endorsing the definitions as they exist in the Owners'
8 report. Okay. And slide nine?

9 So, again, back in February 2020, the
10 staff briefed the ACRS Subcommittee on Reliability and
11 PRA, when we were preparing to go out for public
12 review and comment with the draft guide. It was a
13 very good, healthy discussion and there were several
14 issues that were brought up and discussed by
15 individual members.

16 And understanding that we didn't ask for,
17 the staff didn't ask for any letters, and recognizing
18 that individual subcommittee member's views and
19 perspectives are not, they don't speak for the ACRS.
20 Really, what the second bullet is trying to emphasize
21 is that the staff did not feel compelled to make any
22 changes before the formal public review and comment
23 period document had been published.

24 So, we were ready to move forward with
25 that, see what external stakeholders thought, and

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1 then, collect and assess all of those impacts. And we
2 did go through and review the transcripts from the
3 February meeting when we were reviewing public
4 comments as well.

5 So, with that, we're now on slide ten and
6 I'm going to hand off the presentation to Sunil
7 Weerakkody.

8 DR. WEERAKKODY: Yeah.

9 MR. GILBERTSON: Sunil?

10 DR. WEERAKKODY: Yes. Good morning, thank
11 you, Anders. Good morning to members of the committee
12 and all the parties. My name is Sunil Weerakkody, I'm
13 the senior level advisor in probabilistic risk
14 assessment in Office of Nuclear Reactor Regulations
15 Office of Risk Assessment. It's a pleasure to be here
16 today.

17 Anders mentioned a number of changes we
18 have made into the Regulatory Guide 1.200. I will be
19 focusing on what I would call the primary regulatory
20 driver that prompted us to work on this update on an
21 expeditious basis.

22 I will do so by talking about three
23 different things, how we identified an important gap
24 in the Revision 2 of Reg Guide 1.200 with respect to
25 peer reviews of newly developed methods in PRA and why

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1 we thought it was very significant to close that gap,
2 specifically for more of the more recent applications
3 that a number of licensees have been adopting, we
4 called it Tech Spec 4b or TSTF-505, but that -- and
5 finally, I also want to explain how we have
6 strategized using Reg Guide 1.200 update to close that
7 important gap using the two industry documents that I
8 have noted here, the PWR Owners Group 19027 Revision
9 2 and NEI 17-07. Next slide, please, Anders.

10 So, what is this gap? Greg mentioned
11 this. This is important, for each technical element
12 in the AMSE/ANS LERF PRA standards, there are high
13 level requirements that are supported by what they
14 call supporting requirements.

15 And, for example, if it is human
16 reliability or systems analysis, event trees, there's
17 a set of HLRs, or high level requirements, and
18 supporting requirements. And the peer review was, the
19 independent peer review was, use these when they
20 review licensees' PRAs.

21 The 2009 version of the ASME/ANS Level 1
22 LERF PRA standard, which we endorsed in Rev 2, does
23 not provide high level requirements or supporting
24 requirements for newly developed methods. And also,
25 there is no definition as to what constitutes an NDM,

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1 or newly developed method.

2 What we realized, I think what I say here
3 is I think for Dr. Dimitrijevic and Dr. Bley, they are
4 very familiar with this, when licensees start adopting
5 NFPA 805, that is the risk-informed alternative to
6 fire protection regulations, we had about half of the
7 licensees developing fire PRAs and unlike the interim
8 for PRAs, it was a new territory in that new methods
9 had to be created.

10 And what happened was, in the staff,
11 during the staff reviews, we realized that not having
12 these high level requirements or the supporting
13 requirements for the newly developed methods was
14 manifesting as inefficiencies.

15 The staff had to resort to the RAI
16 process, audits, number of calls and questions, that
17 was burdensome to both staff and licensees. So,
18 during that time frame, we started realizing that we
19 have an issue here, or gap, that has to be closed in
20 an efficient manner. Let's go to the next slide,
21 please.

22 I know Anders already showed you this
23 slide, but I think I am reusing this slide to find out
24 why the staff thought it was very important to address
25 this gap in an expeditious manner.

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1 If you look at, at the top of these
2 applications, what's called RITS-4b, what it does is,
3 once a licensee requests to adopt that initially and
4 we approve, the licensees can use numbers generated
5 from PRA models to change the allowable outage times,
6 as long as they maintain the quality of the PRA in a
7 manner that is acceptable to NRC, without having to
8 keep coming back to NRC.

9 So, that's a pretty important application
10 and that's why on this chart, we put it at the top.
11 So, we realized, and I believe the industry did agree,
12 that it is very important that we close this gap with
13 respect to newly developed methods, so that we and the
14 public can have continued high level confidence on the
15 peer review process, or the agency's activities with
16 respect to Tech Spec 4b. Next slide, please.

17 So, when we issued the first several
18 licensing approvals for people who wanted to take
19 advantage of RITS-4b, to address this issue, what we
20 did was, to the license condition that the company's
21 safety evaluation -- a license condition, just to
22 refresh your mind, is something that the licensee is
23 legally bound by -- we added the language I have shown
24 here, which is that any change in the PRA methods to
25 assess risk that are outside these approval boundaries

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1 requires prior NRC approval.

2 So, in a very high level, this to a great
3 extent addressed the staff's concerns with the
4 acceptability. But when we look at our principles of
5 good regulations, which requires us to continue to
6 look for efficiencies using, when possible, inputs
7 from our stakeholders, we realized that we are not
8 really meeting some of those principles to the best
9 degree we can. If you can go to the next slide,
10 please.

11 So, the reason we were convinced that we
12 had room to improve in this area is because we already
13 had a Commission endorsed peer review process.

14 Now, at the risk of repeating a number of
15 information that Dr. Dimitrijevic and Dr. Bley are
16 extremely familiar, during the subcommittee meeting,
17 I spent about five-ten minutes going through these
18 different documents. I will not do that here, but I
19 think for the benefit of the full committee, I'm going
20 to take about two minutes here to give you the
21 background of how we established the peer review
22 process.

23 So, the Commission and the staff alignment
24 and endorsement of the peer review process really
25 began about, I'd say 2000, that's two decades ago,

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1 when we were publishing 10 CFR 50.69.

2 At that stage, the Commission realized
3 that it is very important to have a common
4 understanding with respect to PRA quality or
5 acceptability, in order to stabilized risk-informed
6 initiatives.

7 So, when the rule was being discussed by
8 the Commission, the then chairman, Commissioner Diaz,
9 he had a COMNJD which is titled Stabilizing the PRA
10 Quality Expectations and Requirements in September,
11 and that's dated September 8, 2003.

12 So, what happened was, during this
13 discussion, there were deliberation of primarily two
14 approaches that the Commission can adopt in order to
15 get the required quality and acceptability of the
16 PRAs.

17 One option is to have the licensee submit
18 their PRAs for a full review by the staff. And the
19 other option was to establish a peer review process,
20 which would enable the staff to liberate the industry
21 review sources and basically focus on the findings and
22 observations that were identified by the peer review
23 team.

24 And after a number of deliberations, the
25 agency decided, with the industry's support, that we

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1 will follow the peer review path. And then, what
2 follows was the PRA implementation plan, I have
3 provided the references here, 2004.

4 And since then, the staff practice has
5 been to issue Reg Guide 1.200, by endorsing different
6 versions of ASME/ANS PSA standards, together with the
7 guidance that NEI puts out.

8 Today, we will be talking about NEI 17-07,
9 but as Anders mentioned, there have been a number of
10 other NEI documents, such as NEI 00-02, NEI, I'm not
11 going to list them all here, but it has been
12 consistent practice of the agency to do so.

13 And on top of that, I think, with respect
14 to the regulations, when 50.69 rule was published in
15 November 2004, the rule acknowledged the peer review
16 process in the rule language itself.

17 So, the point here is to convey to the
18 full committee that the peer review process that we
19 are continuing to follow here is an established
20 process that has received Commission endorsement, as
21 well as it's something that the staff and industry has
22 enlisted over the 20 years.

23 The reason this is a very important point
24 is, we had a very important issue with respect to
25 closing the gap with respect to newly developed

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1 methods. Our initial attempt to address that was
2 through a license condition, but we realized that that
3 is putting too much inefficiencies to staff and
4 resources, and we knew the solution would be trying to
5 liberate the peer review process. If you could go to
6 my last slide, Anders?

7 MEMBER BLEY: Sunil, may I interrupt you?
8 This is Dennis --

9 DR. WEERAKKODY: Yes.

10 MEMBER BLEY: -- Bley. I don't see that
11 any of you had a slide on this, so I thought I'd ask
12 you about it.

13 In the Part B, bravo, of the Reg Guide, in
14 talking about why you've done the revision, you say it
15 enhances guidance related to key assumptions and
16 sources of uncertainty, which is admirable, and it
17 refers us to C, Charlie, 332.

18 And when I go to Charlie 332, looking for
19 some real meat, it kind of says, make sure you
20 identify the key assumptions and sources of
21 uncertainty. And I -- two questions jump at me.

22 One, there isn't much meat there and what
23 are you really expecting people to do and how does
24 this revision help you? And I guess that's
25 everything, it --

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1 DR. WEERAKKODY: Yeah.

2 MEMBER BLEY: -- just doesn't seem to have
3 a lot of explanation here. So, go ahead.

4 DR. WEERAKKODY: So, thank you, Dr. Bley.
5 We'll take that as a feedback. I am going to give a
6 first response, and then I'm going to invite Shilp and
7 Anders to add if I make any errors or additional
8 information.

9 What we have done in this reg guide is, I
10 believe we had added, I don't have the draft guide
11 right in front of me right now, we have added a
12 definition as to what a key assumption and uncertainty
13 is. And that, I think is one of the drivers that we
14 are using to further clarify that issue.

15 Shilp, can you please, because I don't
16 have the document in front of me right now?

17 DR. VASAVADA: Yes. So, this is Shilp
18 Vasavada from the NRC staff again.

19 So, yes, Sunil mentioned, one of the items
20 that this draft guide, the reg guide does is clarifies
21 the guidance on identifying and dispositioning key
22 assumptions and associated uncertainty, especially
23 taking into considering the recent experience that we
24 have had with reviewing license amendments for 50.69
25 and challenges that were faced by both the staff and

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1 the licensees in determining what would constitute a
2 key assumption and source of uncertainty and how to go
3 about dispositioning that.

4 So, the changes made to this revision
5 clarify the, you can say the definition of key
6 assumptions and sources of uncertainty. And then,
7 there are guidance documents like, for example, NUREG-
8 1855, which provide additional details on how to go
9 about dispositioning them in the context of a
10 particular application.

11 MEMBER BLEY: I'm going to drag you out a
12 little bit on this. My memory is that identification
13 of key assumptions and sources of uncertainty have
14 always, since the earliest days of the standard, been
15 required.

16 I assume, since you've tried to make it
17 more clear, I guess it all shows up in the
18 definitions, I went back and looked at those while you
19 were talking. You must have run into cases where
20 there was substantial disagreement, either in peer
21 reviews or by people doing PRAs, on what those things
22 meant. Can you say anything about that?

23 DR. VASAVADA: Sure. So, this is Shilp,
24 I'll take it, and then, I'll respond first, and then,
25 if anybody wants to add something, they can.

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1 So, as you mentioned correctly, there are
2 several supporting requirements in the ASME/ANS PRA
3 standard that deal with broad scope listing of all the
4 uncertainties and assumptions that are in the PRA.
5 And the peer reviews look at that, in their findings,
6 they provide that.

7 What Reg Guide 1.200 says is if you follow
8 the guidance in 1.200, then the staff can focus on two
9 items. One is any items of concern or technical
10 deficiency findings that the peer review identified.
11 And second is key assumptions and sources of
12 uncertainty.

13 And the, you can say the challenges that
14 were faced was going from that long list of
15 uncertainties and assumptions that every PRA would
16 have and that these standards says should be
17 identified, to distilling them or sort of putting them
18 into what are the key assumptions and sources of
19 uncertainty? How to identify them and then, how to
20 disposition them?

21 That filtration process was where there
22 was, you can say, the need for additional
23 clarification and guidance and the various challenges
24 we faced, which resulted in the revisions that were
25 made to this draft guide. Was that helpful?

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1 MEMBER BLEY: I think that gets me partway
2 there. Thank you, that's pretty -- there's a lot of
3 things going on in the revisions here that seem that
4 anybody doing this kind of work ought to know and be
5 doing already, but it seems we do need clarification.

6 MR. GILBERTSON: And, Shilp, this is
7 Anders, if I could maybe just add an aside to what you
8 had said? Strictly speaking, key assumptions and
9 sources of uncertainty are related to risk-informed
10 application itself.

11 So, there's a reason why you don't see
12 that explicitly addressed in the ASME/ANS PRA Level 1
13 LERF PRA standard, because that standard is written
14 for the development and to facilitate the assessment
15 of a base PRA. And of course, your application PRA is
16 derived from your base PRA.

17 So, a key source of uncertainty or
18 assumption is effectively an assumption or source of
19 uncertainty that has the potential to impact the
20 application or the decision under consideration
21 related to that application.

22 So, I just wanted to make that
23 distinction.

24 DR. VASAVADA: Thanks, Anders.

25 MEMBER BLEY: Okay, thanks.

1 DR. WEERAKKODY: So, if I may, so I'm on
2 slide 15, titled Approach to Close the Gap in Reg
3 Guide 1.200 Revision 3.

4 First is PWR Owners Group 19027 Non
5 Proprietary Version Revision 2, publicly available.
6 It provides definitions and related to NDMs, related
7 to newly developed methods, and for definitions of PRA
8 maintenance, PRA upgrades.

9 And it also provides six high level
10 requirements and 21 supporting requirements for peer
11 review of newly developed methods. They are being
12 considered for inclusion in the next edition of the
13 ASME/ANS Level 1 LERF PRA standard.

14 We wanted to -- we are endorsing the
15 Owners Group guidance at this time, because we are, as
16 Greg and I mentioned, we need, this is important
17 regulatory need that we need to resolve expeditiously,
18 because we have a number of applications coming on
19 TSTF-505.

20 And we had a number of meetings with the
21 Owners Group, the staff, and the technical staff had
22 a lot of important discussions to get to a point where
23 we aligned on the wording on these high level
24 requirements and the supporting requirements.

25 The next document is NEI 17-07 Revision 2.

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1 In comparison to the requirements that are the high
2 level and the supporting requirements in 19027, 17-07
3 provide guidance on the process that the peer
4 reviewers must use to peer review newly developed
5 methods, in addition to other technical elements of
6 the PRA.

7 And we started reviewing this document at
8 least before I got, after I got involved for about two
9 years. I still remember during the first couple
10 meetings, we had like 72 comments. But we were able
11 to work with the industry and resolve all 72 of them
12 and get to a point where at least what we are
13 proposing at this time is to endorse this guidance
14 without any exceptions or clarifications.

15 Now, one last item that I want to add to
16 actually sort of set up Shilp for his presentation is
17 emphasis on the word to close as opposed to
18 disposition peer review findings related to NDMs prior
19 to using them in PRA models.

20 Earlier, based on Dr. Bley's request, we
21 provided some explanations with respect to how the
22 process work, what are the facts and observations are.
23 Now, one of the things we realized was that we are,
24 with respect to the methods, because they could have
25 potential high degree of impact, we are basically

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1 taking a position that if after a peer review, then
2 the peer reviewers identify facts and observations of
3 the method, they must be closed as opposed to
4 disposition.

5 And the word close and disposition have
6 completely different meaning in the peer review land.
7 Close is where the licensee looks at the F&Os, and
8 I'll invite Shilp to correct me if I make any errors
9 here, close is the licensee would use one of two
10 processes, either by submitting it to NRC or use an
11 independent peer review processto make sure that the
12 finding has been properly addressed and it is done,
13 there's no more activity on that.

14 Whereas, disposition mean, it's simply
15 saying how you explain either how that particular
16 finding is not impactful for a particular application.
17 So, there's a big -- so, whenever you hear the word
18 close as opposed to disposition, they are two very
19 different things in the peer review.

20 What we have done for the NDM means we are
21 basically saying that your F&Os for the method, it has
22 to be closed. If you do not, they cannot be used,
23 unless the method developer uses a topical process or
24 something like that to get our review and approval to
25 approve the method.

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1 So, that's all I have. I think next up is
2 Dr. Vasavada. Just to mention that, unlike me, Dr.
3 Vasavada has significant experience in actual peer
4 reviews, audits, and review of the licensing actions.
5 So, thank you all. Any questions for me before --
6 okay.

7 DR. VASAVADA: All right. So, thanks,
8 Sunil. Once again, this is Shilp Vasavada and I'm in
9 the Division of Risk Assessment in NRR.

10 My portion of the presentation will
11 provide an overview to the full committee and the
12 audience on the public comments that we received on
13 Draft Guide 1362 and how the staff dispositions and
14 resolved them, including any changes that were made to
15 the reg guide.

16 DG-1362 was released for public comment on
17 the first of July of this year, for a 30-day comment
18 period that ended on the 31st of July. In total, we
19 received 19 public comments from three external
20 stakeholders, the NEI, PWR Owners Group, and an
21 individual member of the public.

22 Just wanted to clarify that there were 19
23 comments in total, but that does not mean that there
24 were 19 unique comments. There were comments that
25 were similar to each other, and that's why there were

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1 19 total and not 19 unique.

2 The public comments from NEI and the PWR
3 Owners Group, or PWROG, also included their responses
4 to two questions that were posed in the Federal
5 Register Notice. These questions related to the need
6 for explicit guidance in the reg guide on the closure
7 of peer review findings using an NRC-endorsed process
8 and the periodicity of such closures.

9 In addition, PWROG also submitted Revision
10 2 of the report 19027-NP, I'll just call it 19027
11 Revision 2 for simplicity.

12 So, that's a summary of what we received
13 through the public comment process. In the remainder
14 of the presentation, I'll provide a synopsis and
15 include the synopsis of the prominent public comments
16 that were received and a synopsis of how the staff
17 dispositioned them. I'll start with the comments that
18 resulted in changes to the reg guide. Next slide,
19 please.

20 So, for those who are following on the
21 phone, this is slide 17. And for the remainder of my
22 presentation, you'll see this structure for the
23 slides. On the left, you will see the synopsis of the
24 comment. And as I said, it's a synopsis, it's not the
25 entirety replicated over here. On your right, you

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1 will see the synopsis of the change that was made to
2 the draft guide. At the end of each slide, I'll pause
3 for any questions.

4 I'll start off with a few public comments
5 that were related to the consideration of peer reviews
6 for PRAs that credit planned modification, that is
7 modifications that are planned at the facility or
8 plant, but are not completed.

9 The NRC staff agreed with the comments
10 that guidance on consideration of peer reviews for
11 such cases was beneficial in the reg guide. And in
12 response to the comment, the NRC staff did add
13 clarifying guidance for PRAs of operating plants that
14 credit planned modifications.

15 The guidance states that the NRC staff
16 considers such cases to be special circumstances and
17 will address them on a case-by-case basis. In
18 addition, the guidance also, the additional guidance
19 that was included also states that the peer review and
20 submittal documentation should clearly identify and
21 describe such planned modifications and design
22 changes.

23 Any questions, comments? Okay. Next
24 slide, please.

25 MEMBER DIMITRIJEVIC: Sorry. Sorry, again,

1 I have a problem with my button. This is Vesna
2 Dimitrijevic. My question here is, does that mean the
3 PRA used already incorporates the planned
4 modification, even the modification was not executed
5 yet?

6 DR. VASAVADA: So, the short answer is yes.
7 The peer review of that PRA would consider the planned
8 modification, which is not completed yet. And if such
9 a PRA is used to support an application, then that
10 will be the case, which is why that additional
11 clarifying guidance was added that staff would address
12 it on a case-by-case basis and the documentation
13 should clearly identify such a case.

14 DR. WEERAKKODY: Vesna, just to add a
15 remark there. This happened during 805 reviews.
16 Licensees would commit to certain modifications and
17 wanted to take credit for those.

18 And that, what we do was if the license
19 imposes, when we, if we give credit to such, we write
20 what we call license conditions to make sure that if
21 the PRA is applied for uses that they need to factor
22 that in, because they want to make sure that what they
23 committed to as part of the modification has been
24 implemented before using that PRA. Just wanted to
25 share that with you

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1 DR. VASAVADA: Thanks, Sunil.

2 MEMBER DIMITRIJEVIC: Well, I understand
3 that this would be very applicable to 805, but for
4 certain when it comes to the risk-informed completion
5 time, then the PRA has to reflect the current status
6 of the plant, right?

7 DR. WEERAKKODY: We fully agree and that's
8 how it will be done. It will be -- they have to use
9 the as-built as-designed plan if they are changing
10 anything, yes.

11 MEMBER DIMITRIJEVIC: Okay, all right.
12 Thank you.

13 DR. VASAVADA: And this is Shilp, just to
14 add clarity to that, I mean, what Sunil mentioned is
15 absolutely correct.

16 When the staff is reviewing such a case
17 where a planned modification is being credited,
18 definitely the impact of that modification on that
19 particular application will be considered and if it is
20 important to the staff decision, as Sunil mentioned,
21 there are ways in which the staff can ensure that
22 modification and the staff decision continue to be
23 valid when the program is implemented.

24 MEMBER DIMITRIJEVIC: Okay, thank you.

25 DR. VASAVADA: All right. So, maybe, any

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1 other questions? Otherwise, I can move to slide 18.
2 Okay, thanks.

3 So, a public comment suggested correcting
4 the definition of PRA acceptability in the draft guide
5 by adding context. The context being that PRA
6 acceptability is related to the specific risk-informed
7 application and regulatory decision that is being
8 supported by the PRA.

9 The staff agreed with the comment that
10 context was indeed necessary for the definition of PRA
11 acceptability and has changed the definition of PRA
12 acceptability in the reg guide.

13 Specifically, the definition was changed
14 to state that PRA acceptability is determined for each
15 risk-informed application, considering the staff's
16 positions in Reg Guide 1.200, in any application-
17 specific regulatory guidance, and any requirements for
18 that particular risk-informed application.

19 Any questions or comments? All right.
20 Anders, can you please go to slide 19?

21 One of the public comments that was
22 received suggested clarification on when a peer review
23 of a PRA upgrade was to be performed. The comment
24 stated that the driver for the peer review of an
25 upgraded PRA was the actual use of a PRA in a risk-

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1 informed application.

2 And the NRC staff did agree with the
3 comment and, consequently, added clarifying guidance
4 to the reg guide. The additional guidance that was
5 included states that the peer review of a PRA upgrade
6 should be performed prior to the use of the PRA model
7 in support of an application, and an application can
8 be either an approved risk-informed program or the
9 submittal to the NRC staff for review.

10 Further, the staff also clarified that it
11 considers a newly developed method, the use of a newly
12 developed method in a PRA to be a PRA upgrade, because
13 it meets the definition of an upgrade in the reg
14 guide.

15 MEMBER DIMITRIJEVIC: Okay. This is Vesna
16 Dimitrijevic again. I would like just some
17 clarification in this case.

18 DR. VASAVADA: Yeah.

19 MEMBER DIMITRIJEVIC: So, let's say that
20 somebody who has already implemented risk-informed
21 inservice inspection, has applied the new method, and
22 therefore, performed the PRA upgrade. Since he
23 already has ongoing risk-informed application, does
24 that mean that he should perform the peer review
25 immediately?

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1 DR. VASAVADA: So, I think -- should
2 perform peer review immediately? Are you asking that
3 --

4 MEMBER DIMITRIJEVIC: I mean, immediately,
5 like is he expected to perform the peer review --
6 okay. So, what would be expectation -- okay. Most of
7 the plants in United States have incorporated risk-
8 informed ISI.

9 So, and a lot of them, that will go
10 through this PRA upgrade. So, because the methods
11 change, finishing the thing. So, when they expected,
12 since they already have ongoing approved risk-
13 information application, when are they expected to do
14 the new peer review?

15 DR. VASAVADA: So, from a timing
16 perspective, I think that would be left to the
17 discretion of the licensee. From an expectation of
18 when the upgraded PRA is used, it would be that the
19 peer review should be performed prior to the use of
20 the upgraded PRA in the application.

21 MEMBER DIMITRIJEVIC: But that's -- it's
22 already used, they already have a risk-informed
23 program in place, that's what my question is.

24 DR. VASAVADA: Right.

25 MEMBER DIMITRIJEVIC: They already have a

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1 new inspection program in the place. And it's risk-
2 informed program.

3 DR. VASAVADA: So, maybe I can explain with
4 an example. So --

5 MEMBER DIMITRIJEVIC: Okay.

6 DR. VASAVADA: -- let's say they have a PRA
7 right now, as you are saying, they're using it for a
8 risk-informed ISI and they do an upgrade, then they
9 can continue to use the current PRA for their
10 particular program.

11 If they would like to use the upgraded PRA
12 in that program, then a focus on peer review and
13 dispositioning of the findings should be performed
14 prior to using the upgraded PRA. So, until that is
15 done, they can continue to use what they currently
16 have, the non-upgraded PRA, in the program. Does that
17 help?

18 MEMBER DIMITRIJEVIC: That helps, it's just
19 really something which would be questionable, what if
20 the updated method resulted in significant difference
21 in the results or -- that's a very -- this is a very
22 interesting question, when you are processing, you
23 have any risk-informed application approved in one
24 moment and then your PRA developing and they may be
25 significantly changing. How do you retrofit this?

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1 DR. VASAVADA: I think, so, let me give my
2 thoughts and, Sunil, maybe you can --

3 DR. WEERAKKODY: Yeah.

4 DR. VASAVADA: -- help me. So, as I
5 mentioned, the PRA configuration control process
6 handles changes to the PRA, including updates and
7 maintenance. And at the end of that, there can be a
8 new version of the PRA or revision of the PRA, which
9 going forward can be used.

10 If there are changes, then, yes, that
11 would be something that would be within the licensee's
12 ability to change in the construct of that program.
13 Until that happens, the licensee is definitely allowed
14 to also be using the non-upgraded PRA for its
15 decisions.

16 Sunil, do you want to add anything?

17 DR. WEERAKKODY: Yeah. I believe I
18 understand the context of the question, and I'll
19 basically take a different example.

20 Let's say a licensee has decided that they
21 can use their PRA to change the surveillancing total
22 time of a particular component from one to three
23 months using a particular PRA, okay? And subsequent
24 to that, they do an upgrade to the PRA.

25 And the question would be, okay, you have

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1 upgraded the PRA, but now we have a different PRA
2 model you could be using. I think what we are saying
3 here in this guidance is, before we use that updated
4 PRA going forward for a different application, for the
5 next change to the surveillance interval, clearly,
6 they have to get that peer reviewed, right?

7 But I believe Vesna's question is, what
8 about the changes that they have implemented? They
9 have already implemented, used this PRA that changed
10 for something else that they have already decided.

11 And a high level way to answer that
12 question from a safety standpoint, Dr. Dimitrijevic,
13 is that there is always, it's written into their
14 license conditions that when they make a change to the
15 PRA, they are required, the licensee is required to
16 make sure some of those changed parameters that was
17 used by using PRA remain still acceptable. That's the
18 expectation of the licensee.

19 Now, but to your point and the question,
20 we are not saying that would necessarily require you
21 to go and do another, quickly do an upgrade. But
22 that's something that -- and I think you got to bring
23 a little bit of the practicality into this.
24 Generally, these upgrades are, they could change the
25 numbers, but more often than not, they are not

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1 impactful on things like the STIs unless there is
2 significant change.

3 If there are, the licensee is required by
4 the license conditions and the configuration control
5 that they built into the tech specs to make sure that
6 those parameters stay acceptable. So, that's the best
7 answer I can give.

8 But I think we should say that there is no
9 requirement, just because that PRA has been used in
10 the past applications to go and do peer review. The
11 requirement is that the changes that they have made to
12 the plant remain acceptable.

13 MEMBER DIMITRIJEVIC: Okay. Well, thank
14 you, Sunil. That --

15 DR. WEERAKKODY: Hopefully that helps. It
16 may not be the perfect answer, but I think -- so, what
17 I'm saying is, from a practical standpoint, we've done
18 what is necessary for the safety, not necessarily,
19 when you look backwards, not necessarily by requiring
20 prompt peer review, but requiring the licensees to
21 make sure that the plant or the parameters they have
22 used using PRA remain acceptable.

23 MEMBER DIMITRIJEVIC: Okay. Well, my
24 question is more related to something which will be
25 coming in your next revision, for advanced plan when

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1 even the applicants for design certification and --

2 DR. WEERAKKODY: Oh, okay.

3 MEMBER DIMITRIJEVIC: Yeah. They don't
4 have a formal risk-informed application, like --

5 DR. WEERAKKODY: Yeah, yeah.

6 MEMBER DIMITRIJEVIC: -- tech specs, but
7 they do use PRAs to make a lot of risk-informed
8 decision, for example, exemptions from the GDCs or
9 things like that. As the PRA is developing and
10 changing, before it gets finalized, should we look
11 back to reevaluate this risk-informed decision?

12 That was one of things I am sort of
13 struggling with and I was interest -- I mean, of
14 course the changes in operating plants are less
15 significant.

16 DR. WEERAKKODY: Yeah.

17 MEMBER DIMITRIJEVIC: Okay. All right.
18 Well, thank you for --

19 (Simultaneous speaking.)

20 DR. WEERAKKODY: Thank you, Dr.
21 Dimitrijevic. Great question to ask Anders when he
22 comes back to the committee on the advanced nuclear
23 non-light water reactor reg guide.

24 DR. VASAVADA: Yeah, thank you.

25 MEMBER DIMITRIJEVIC: Also applies for

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1 advance, it doesn't --

2 DR. VASAVADA: Yeah.

3 MEMBER DIMITRIJEVIC: -- advanced light
4 water --

5 DR. VASAVADA: Oh, yes, yes, yes.

6 MEMBER DIMITRIJEVIC: -- it doesn't have to
7 be non-light water reactors.

8 DR. VASAVADA: Okay. So, this is Shilp.
9 Thanks for that feedback, we'll definitely take that
10 when we are moving forward with the next revision.
11 So, maybe we can go to slide 20, for the next -- okay.

12 We received a couple of public comments
13 that suggested clarifying when the differences between
14 the 2005 and 2009 version of the Level 1 LERF PRA
15 standard should be identified in support of a license
16 amendment request.

17 In the version that was released for
18 public comment, there was no context and it appeared
19 that such differences would need to be identified for
20 all amendment requests.

21 The staff agreed with the comment that
22 clarity was necessary and, consequently, added
23 clarification that those differences need to be
24 identified and addressed only if the 2005 version of
25 the Level 1 LERF PRA standard was used to support the

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1 base PRA acceptability for an application.

2 Note that this comment, although some of
3 you may already know, applies primarily to the
4 internal events PRA model, because the 2005 version
5 did not have an internal fire or external hazard PRA
6 acceptability determination.

7 Any questions or comments on that? Next
8 slide.

9 There were a couple of comments that were
10 focused on Appendix Delta in Draft Guide 1362.
11 Appendix Delta is new in the draft guide and in the
12 planned Revision 3 of 1.200 compared to Revision 2.
13 Its intent is to provide clarifying guidance on
14 various external hazards when such hazards are being
15 considered for an application.

16 The comments pointed out that there may be
17 inconsistencies between Appendix Delta in the draft
18 guide and Part 6 of the 2009 version of the PRA
19 standard, which is being endorsed by this revision of
20 the reg guide.

21 So, after reviewing the comments as well
22 as Appendix D in the draft guidance, staff did agree
23 with the comment that consistency between Appendix D
24 and the 2009 version was necessary. And, therefore,
25 the staff has revised Appendix D to be consistent with

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1 Part 6 of the 2009 version of the PRA standard, as
2 endorsed in the reg guide.

3 MEMBER BLEY: Well, that raises a question.
4 This is Dennis Bley, again.

5 DR. VASAVADA: Sure.

6 MEMBER BLEY: And I assume your center of
7 expertise on hazards helped you, was involved in this.
8 When you did that reconciliation with the 2009 version
9 of the standard, did any hazard groups disappear? And
10 if so, what are they and is it reasonable that they
11 should disappear?

12 DR. VASAVADA: So, I'll maybe have to ask
13 Anders to help me out with this one, since he looked
14 at this in detail. Anders, can you please help?

15 MR. GILBERTSON: Sure. Yeah, thank you,
16 Dr. Bley. So, in the draft guide, there were some
17 hazards that were removed to achieve that consistency.
18 For example, one of them that comes to mind is the
19 heavy load drop hazard. I believe that there was
20 another external hazard. But, yes, the short answer
21 is yes, there were some that were removed.

22 The thrust of the comment was more related
23 to that Reg Guide 1.200 was kind of expanding the
24 level of consideration inconsistent with the 2009
25 standard and our endorsement thereof. So, I think

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1 what we were really trying to do was make sure that we
2 weren't effectively expanding our endorsement of the
3 2009 PRA standard.

4 As far as Revision 4 of Regulatory Guide
5 1.200 is concerned, we are, the staff are going to
6 think about what additional hazards that may have been
7 pulled out, and for example, that exist already in a
8 table in NUREG-1855 Revision 1, and consider how to
9 bring those in and descriptions, et cetera, to use.

10 There is already some momentum in that
11 direction with the advanced non-LWR PRA standard that
12 is soon to be published. They have a similar listing
13 of hazards in one of the portions of their document.
14 And it is an expanded list.

15 So, ultimately, the main thrust is that we
16 were not -- we didn't want to expand the staff's
17 previous endorsement.

18 MEMBER BLEY: Well, I'm concerned about
19 that one. The whole idea in PRA is to get a complete
20 set of events and if we leave some out and discover
21 that, we need to keep adding them. That's part of the
22 process of being consistent.

23 It isn't a good reason to ignore new
24 things we've learned and I'm kind of nervous about
25 this, I'd probably lean toward sending you guys a note

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1 that expressly identified this.

2 I'd like -- well, I can go back and check
3 for myself to see what disappeared, in addition to
4 heavy load drop. We know that's a potential event and
5 it's been analyzed in PRAs over the last 30-40 years,
6 in cases where it turned out to be a significant
7 possibility.

8 This one does bother me. I'll have to
9 think about that a little bit. And I'm glad you're
10 picking it up elsewhere, but this -- having a reg
11 guide, although it's for the public, but also is used
12 by the staff and if we're taking away things they
13 ought to be considering and looking at, we're leaving
14 it up to their creativity, which we want them to have,
15 we don't want to cut things out intentionally.

16 So, that's a bit of a troublesome one for
17 me. But, go ahead.

18 MR. GILBERTSON: If I could, and this is
19 Anders Gilbertson, if I could just add on to that? I
20 certainly appreciate the concern and I think the staff
21 more broadly also appreciate the concern.

22 I guess, this isn't to try and alleviate
23 that concern, but I would point out that that listing
24 is, at least in the Level 1 LERF PRA standard, it's
25 not a mandatory list. So, it's actually in a

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1 nonmandatory appendix. So, in that way, it's
2 presented as a large list of hazards that need to be
3 considered, but it's not exhausted.

4 So, as the PRA technology and lessons
5 learned have evolved and we've gotten more insights
6 about what is and what is not potentially important to
7 consider, for example, there is a NUREG on heavy load
8 drops that analyzes that, Shilp and Sunil could maybe
9 correct me, but I believe there are some licensees who
10 have done heavy load drop PRAs, perhaps not many, but
11 I believe some have been done.

12 But, anyways, again, the concern is, I
13 fully acknowledge that and appreciate that.

14 MEMBER BLEY: It's, I'm glad you added
15 Appendix D, it's a pretty darn thorough list, but the
16 idea that we edit such a list is troublesome, because
17 although every analyst and reviewer should think
18 expansively and see what might have been left out, if
19 we purposefully cut down on the things we tell them to
20 think about, that increases the chance that something
21 important is missing.

22 And, I guess, this is for Vesna. I'm a
23 little inclined that we ought to say something about
24 this, Vesna. But let's --

25 MEMBER DIMITRIJEVIC: But it --

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1 (Simultaneous speaking.)

2 MEMBER DIMITRIJEVIC: I thought about this
3 too, but in my opinion, it also applies more for the
4 next revision, which is for the new plants. Because
5 this revision, in my opinion, is for operating plants
6 and most of them have completed their PRAs and peer
7 reviews and now, they're doing just upgrades and
8 things like that.

9 So, I think we should get a chance to look
10 in this again in details for Rev 2, which will apply
11 for the new PRAs and applications.

12 MR. GILBERTSON: And --

13 MEMBER BLEY: Let's get --

14 (Simultaneous speaking.)

15 MEMBER BLEY: So, when do you expect that
16 to happen?

17 MEMBER DIMITRIJEVIC: Yeah, we --

18 MR. GILBERTSON: Revision 4?

19 MEMBER DIMITRIJEVIC: Yeah, we have a
20 couple slides and then, I hope we will get to discuss
21 when do you expect this rev and things like that in
22 your last two slides.

23 MR. GILBERTSON: Yes, I'll be prepared to
24 speak to that.

25 MEMBER MARCH-LEUBA: Hey, this is --

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1 MEMBER DIMITRIJEVIC: Okay.

2 MEMBER MARCH-LEUBA: -- Jose March-Leuba.

3 I wanted to add my support to Dennis' position. And
4 you know by now my opinion on this. The Achilles heel
5 of risk-informed anything is calculating the risk.
6 And the way to calculate the risk is to calculate all
7 the risk of the individual components and add them up.

8 If you automatically remove components,
9 all you are doing is calculating a lower bound of the
10 risk. So, the risk could not possibly be smaller than
11 this, but it could be much larger.

12 So, I'll keep it here, but I support
13 Dennis' position. I mean, I don't see any absolute
14 reason or justification to remove hazards.

15 DR. WEERAKKODY: Yeah, and this is Sunil
16 Weerakkody. I think we heard, I think two members of
17 the committee. So, let me just say that I think we
18 understood your comment, we are going to take a
19 serious look at that feedback and definitely -- I'm
20 writing that down as a followup item, to come back to
21 you.

22 MEMBER BLEY: You do --

23 DR. VASAVADA: Sunil --

24 MEMBER BLEY: You do say that it's a
25 minimum list of hazards in the text, but the tables

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1 themselves, which is often where people go without
2 carefully reading all the text, don't say this is a
3 partial list, a minimum list, an example list, they
4 say this is the list.

5 So, maybe you could do something at least
6 editorial to say this is not complete and everybody
7 needs to be thorough in their own analyses. But I
8 really can't see reasons for dropping things just to
9 be consistent. Go ahead.

10 DR. WEERAKKODY: Yes, sir. I mean -- this
11 is Sunil Weerakkody again. We agree that it's
12 something that we need to go back and take a look at.

13 DR. VASAVADA: This is Shilp Vasavada from
14 the NRC staff. I just wanted to add one additional
15 item, that for, at least from a licensing perspective
16 and the staff reviews licensing applications,
17 licensees do have to address these external hazards
18 and how they are considering them. That is also part
19 of the regulatory guidance in 1.174. And demonstrate
20 either that they don't have an impact on the
21 application or treat them either qualitatively or
22 quantitatively.

23 So, from a perspective of risk-informed
24 applications, they are considered and the staff does
25 look at them --

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1 MEMBER BLEY: Okay.

2 DR. VASAVADA: -- as well as the licensees.

3 MEMBER BLEY: There's always a rule that
4 says, gee, because you missed this, you broke our
5 rule. And if you ever followed safety in the railroad
6 business, you'd know that there were rules for
7 everything, that you couldn't even drive a train
8 without violating the rules, so they could always
9 blame the engineer or conductor for every accident.

10 If we're going to give guidance, it's
11 guidance, it's to help people meet the rule, be more
12 likely to meet the rule in a good way. So, yeah --

13 DR. WEERAKKODY: Yeah --

14 MEMBER BLEY: -- everybody's responsible to
15 do a thorough job on their own, but if we're trying to
16 help them out, we shouldn't limit how we help them.

17 DR. WEERAKKODY: Yeah, we tend to, at least
18 speaking for myself, this is Sunil again, I think we
19 heard -- I think you're making a great point. And
20 regulatory guidance is guidance.

21 If we add a couple additional external
22 events, again speaking for myself, that's not
23 necessarily mandating by a rule that every licensee
24 should or shall. It's simply saying that, hey,
25 consider this also as part of your thinking.

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1 So, in that construct, I think we need to
2 take back your feedback and reflect on that as staff,
3 and we'll definitely get back to you.

4 MEMBER BLEY: I --

5 DR. WEERAKKODY: Thank you.

6 MEMBER BLEY: I know you don't want to make
7 any major changes --

8 DR. WEERAKKODY: Yeah, yeah.

9 MEMBER BLEY: -- so, maybe think about this
10 for the next round. One way --

11 DR. WEERAKKODY: No, I --

12 MEMBER BLEY: One way that helps in a list
13 like this is to group them by similar items --

14 DR. WEERAKKODY: Yeah.

15 MEMBER BLEY: -- so you've got the whole
16 space covered and then --

17 DR. WEERAKKODY: Yeah.

18 MEMBER BLEY: -- you give examples of what
19 things fit under each of the --

20 DR. WEERAKKODY: Yeah.

21 MEMBER BLEY: -- higher level categories.
22 But go ahead.

23 DR. WEERAKKODY: Yes. Thank you, Dr. Bley.

24 DR. VASAVADA: Thank you for that feedback.

25 All right. So, if there's nothing more on this slide,

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1 we can go to the next one, slide 22 and the next
2 public comment or comments.

3 So, in the draft guide that went out for
4 public comment, the staff had identified one
5 clarification to Revision 2 of NEI 17-07. The
6 clarification related to the documentation of the
7 resolution of peer review findings.

8 In one of its public comments, NEI
9 identified existing text in 17-07 Revision 2 which,
10 again, according to the comment, addressed the
11 clarification that was identified by the staff. After
12 reviewing the cited text and the clarification, the
13 staff agreed that the text indeed addressed the
14 clarification, and that's why we have removed the
15 clarification from the reg guide.

16 Similarly, the draft guide that went out
17 for public comment identified two clarifications on
18 19027 Revision 1. One of the clarifications was
19 regarding the PRA upgrade determination process.

20 As part of its problem comments, the PWROG
21 submitted Revision 2 of 19027. And after review,
22 staff determined that the items that resulted in the
23 clarification were actually removed from Revision 2.
24 Based on its review of Revision 2 and the
25 clarification, the staff did not see the need for

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1 continuing to keep that clarification and has removed
2 the clarification.

3 If there are no questions, we can go to
4 slide 23.

5 We received public comments on the two
6 questions proposed in the Federal Register Notice.
7 Again, to refresh the memory, these questions were
8 related to the need for explicit guidance on the
9 closure of open peer review findings using an NRC-
10 endorsed process and the corresponding periodicity of
11 closure.

12 We received detailed response from the
13 PWROG and NEI on these questions. Based on our review
14 of the responses, the NRC staff agreed that the
15 closure of open peer review findings using an NRC-
16 endorsed process should be a licensee's decision,
17 based on weighing the benefits of the closure against
18 the cost of the closure.

19 The staff does note that closure of
20 findings helps enhance PRA acceptability and reduces
21 resources for the staff and the licensee in licensing
22 activities and any potential oversight activities.

23 After reviewing the responses, the staff
24 did find it necessary to add clarifying guidance under
25 disposition of peer review findings from any peer

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1 reviews, including those that were conducted after
2 approval of a risk-informed application.

3 The guidance that was added states that
4 findings from peer reviews should be evaluated for the
5 risk impact on risk-informed application and should be
6 addressed with documented justification and any
7 necessary changes to the PRA.

8 And all of these activities, the
9 evaluation, the justification, and the changes, should
10 be performed prior to the use of the PRA in a risk-
11 informed application.

12 Any questions or comments on that? Okay.
13 We can go to slide 24.

14 So, in the previous slides, I kind of
15 provided a synopsis of the resolution of the public
16 comments that resulted in changes to the draft guide.
17 In this slide and the next, I'll discuss a couple of
18 comments that did not result in changes to the draft
19 guide.

20 There were multiple public comments that
21 were received related to the availability of Revision
22 2 of 1.200 after the issuance of Revision 3. The
23 concern in the comments was that licensees may have
24 received peer review guidance from Revision 2 for
25 technical acceptability activities and redoing the

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1 peer reviews using the guidance in NEI 17-07, which is
2 endorsed by Revision 3, or is expected to be endorsed
3 by Revision 3, would not add value.

4 As was previously noted, NEI 17-07
5 consolidates peer review guidance from different
6 documents which were endorsed in Revision 2. The
7 staff agrees that Revision 2 is not being withdrawn
8 and the staff's publicly available responses will
9 explicitly state that.

10 As a result, changes were not made to the
11 reg guide, which is consistent with reg guide
12 revisions, that is they don't carry information about
13 the availability or not of previous versions.

14 The staff response, publicly available
15 response will also clarify that the staff anticipates
16 one revision of the reg guide to be followed for a PRA
17 application and any deviations from the referenced
18 version that is used in the application, including the
19 use of any alternatives from previous versions, should
20 be identified and justified.

21 So, any questions or comments? Okay. We
22 can move to the next one.

23 Another public comment that did not result
24 in a change to the reg guide was about changing the
25 use of the term application to the narrower licensing

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1 application throughout the draft guide. The comment
2 identified that not all applications need a full-scale
3 PRA acceptability review and that was the basis for
4 the suggested change.

5 The staff did not make changes to the reg
6 guide based on this comment for two reasons. Firstly,
7 the staff believes that term application is used in
8 1.200 consistent with the definition of the term PRA
9 application in the endorsed 2009 version of the PRA
10 standard. It was endorsed in the Revision 2 and it is
11 expected to be endorsed in Revision 3.

12 Secondly, the application-specific staff
13 positions on PRA acceptability exist in the
14 corresponding guidance. An example is the integrated
15 leak rate test guidance, where the level of detail and
16 plant representation at category one is considered
17 sufficient.

18 So, such application-specific guidance
19 addresses cases where full-scale PRA acceptability
20 review may be unnecessary.

21 Any questions or comments on that? Okay.
22 Then, that ends my overview of the resolution of
23 public comments on Draft Guide 1362 and the
24 corresponding dispositions by the NRC staff. Based on
25 the agenda, I will turn it over to NEI and PWROG for

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1 their perspectives, if that is the correct order.

2 MEMBER DIMITRIJEVIC: We have a couple more
3 slides in your presentation, path forward and two new
4 slides on that. Are we going to come back to those?

5 DR. VASAVADA: This is Shilp, I'm sorry, I
6 was going by the agenda and it stated that after my
7 portion of the resolution of public comments
8 discussion --

9 MEMBER DIMITRIJEVIC: Okay. We will --
10 (Simultaneous speaking.)

11 MEMBER DIMITRIJEVIC: Okay. That sounds
12 good. Okay.

13 DR. VASAVADA: Thank you.

14 MEMBER DIMITRIJEVIC: So, okay. So, we
15 will go to the industry, NEI and PWR Owners Group.
16 Who's going to be the first?

17 MS. ANDERSON: Yes, this is Victoria
18 Anderson with NEI.

19 MEMBER KIRCHNER: This is --

20 MS. ANDERSON: Oh, go ahead.

21 MEMBER KIRCHNER: Vesna, is this a good
22 time for a break? Is this a long presentation?

23 MEMBER DIMITRIJEVIC: Both of those
24 presentations are short. But I think it maybe makes
25 sense, because we have a -- we are not so limited with

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1 this 11:30 finishing, we are a little behind schedule,
2 but I think this is okay, maybe we can make a ten-
3 minutes break in this moment. So, let's meet 11:15
4 then.

5 (Whereupon, the above-entitled matter went
6 off the record at 10:58 a.m. and resumed at 11:15
7 a.m.)

8 CHAIRMAN SUNSERI: Okay, members. It's
9 11:15. I will do a quick roll call just to confirm we
10 have a quorum.

11 First, Ron Ballinger?

12 MEMBER BALLINGER: Here.

13 CHAIRMAN SUNSERI: Dennis Bley?

14 MEMBER BLEY: I'm here.

15 CHAIRMAN SUNSERI: Charles Brown?

16 (No response.)

17 CHAIRMAN SUNSERI: Vesna?

18 MEMBER DIMITRIJEVIC: Here.

19 MEMBER BROWN: I'm sorry. Couldn't find
20 my mic. I'm here, Matt.

21 CHAIRMAN SUNSERI: Okay. Thanks.

22 Walt Kirchner?

23 MEMBER KIRCHNER: Here.

24 CHAIRMAN SUNSERI: Jose March-Leuba?

25 MEMBER MARCH-LEUBA: Here.

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1 CHAIRMAN SUNSERI: Dave Petti?

2 MEMBER PETTI: Here.

3 CHAIRMAN SUNSERI: Joy Rempe?

4 VICE CHAIRMAN REMPE: Here.

5 CHAIRMAN SUNSERI: Pete Riccardella?

6 MEMBER RICCARDELLA: Here.

7 CHAIRMAN SUNSERI: Okay. We have a
8 quorum.

9 Vesna, you may continue.

10 MEMBER DIMITRIJEVIC: Okay. So we will
11 have now the industry representatives from NEI and we
12 will start with NEI and then PWR Owners Group.

13 So Victoria, please -- the floor is yours.

14 MS. ANDERSON: All right. Thank you.

15 Good morning. This is Victoria Anderson
16 from the Nuclear Energy Institute and I will be
17 providing some reflections on the NEI perspective on
18 Reg Guide 1.200 Revision 3.

19 Okay. There we go.

20 So with respect to how we see Reg Guide
21 1.200 Revision 3 as supporting risk-informed
22 regulation, the peer review process itself has really
23 been an important part of implementation of the ASME
24 ANS/PRA standard since it came out.

25 We undertook an effort to improve the

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1 processes associated with it after over a decade of
2 experience. We published that in NEI 17-07.

3 Revision 3 specifically includes some
4 important updates to support regulatory stability,
5 specifically, with respect to finding closure and
6 newly developed methods, as was previously discussed.
7 Both of these items will conserve both industry and
8 NRC resources in the review of risk-informed
9 applications.

10 So we see the issuance of Revision 3 of
11 this Regulatory Guide as an important step in
12 supporting continued advancement of risk-informed
13 regulation.

14 I also want to take a minute to talk about
15 the Federal Register notice question to stakeholders,
16 which specifically read should licensees be required
17 to periodically close all their PRA peer review
18 findings to ensure confidence in the information used
19 in risk-informed programs.

20 As you heard from the NRC staff earlier,
21 there was not any language added to the Reg Guide with
22 respect to this. We provided a comment that we did
23 not support an addition to Regulatory Guide 1.200 and
24 it's for two reasons.

25 First, we think that the configuration

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1 control criteria in the PRA peer review guidance
2 document are sufficient to ensure that high fidelity
3 information is used in support of risk-informed
4 applications.

5 The configuration control criteria are
6 evaluated as part of the PRA peer review and the NRC
7 has access to documentation relative to that in their
8 review of license amendment requests.

9 Our second reason is that we were not
10 aware of any specific regulatory concerns that would
11 have been addressed by such a requirement.

12 So, in other words, it was kind of a
13 solution in search of a problem and we didn't really
14 see that there would be any value added from this.

15 So we support the NRC's staff decision to
16 not include such language in Reg Guide 1.200 Rev 3.
17 That is all I have to offer on the NEI perspective on
18 Reg Guide 1.200 Rev 3.

19 MEMBER DIMITRIJEVIC: Okay. Do we have
20 any questions?

21 (No response.)

22 MEMBER DIMITRIJEVIC: All right. If not,
23 then we can proceed with PRW Owners Group
24 presentation.

25 Roy Linthicum from PRW Owner Group, I

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1 think, is going to give that.

2 (Pause.)

3 MEMBER DIMITRIJEVIC: Is Roy here?

4 MR. MAIOLI: Hello. This is Andrea
5 Maioli. I'm just confirming that you can see the
6 slides.

7 MEMBER DIMITRIJEVIC: Yeah, we can see
8 slides.

9 MR. MAIOLI: Okay. Roy is supposed to
10 give the presentation. I just manage the slides here.

11 MEMBER DIMITRIJEVIC: Okay.

12 MR. WEERAKKODY: Roy, are you there?

13 (No response.)

14 MR. WEERAKKODY: Andrea, this is Sunil.
15 Perhaps you could present the slides if Roy is not
16 here. Maybe he has some technical difficulty or --

17 MEMBER BLEY: Or somebody could call him.
18 Yeah, I don't see him on the list.

19 CHAIRMAN SUNSERI: I don't see him on the
20 attendees roster right now.

21 MEMBER DIMITRIJEVIC: I see him on the
22 list. I saw the L on the top of the list. So I see
23 him on the list. His microphone is muted.

24 MR. MAIOLI: I can definitely go through
25 some of the slides unless -- unless -- well, we just

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1 have a couple slides here. If needed. Just let me
2 know.

3 MR. WEERAKKODY: I will -- I will call Roy
4 to find out. Or, Andrea, what do you want to do? Do
5 you want to present the slides or you want to call
6 Roy? It's up to the Owners Group.

7 MR. MAIOLI: I can present the slides if
8 you want. Otherwise, give me a minute and I'll try to
9 call Roy.

10 MR. LINTHICUM: Good morning. Can you
11 hear me now? Oh, okay.

12 MR. WEERAKKODY: Yes.

13 MEMBER DIMITRIJEVIC: Okay. All right.
14 Okay. Okay. So you can proceed now with the slides.

15 (Pause.)

16 MS. LUI: Looks like Roy is having issue
17 with his microphone right now.

18 MEMBER DIMITRIJEVIC: Yes, he does because
19 he goes to muted again. So --

20 CHAIRMAN SUNSERI: His status is showing
21 offline.

22 MS. LUI: He was trying to reconnect and
23 make his mic work.

24 MEMBER DIMITRIJEVIC: I see. Okay. So
25 while we are waiting for Roy, I wanted to -- I can add

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1 something to our previous discussion because when we
2 were talking about including the hazards in the PRA
3 and Jose made a comment that we are more conservative
4 if we include the concepts.

5 But because this Reg Guide applies to
6 risk-informed applications, actually adding hazards
7 reduce conservatism. Because what has happened if you
8 add the heavy load drop to the PRA like we had the
9 case that recently reviewed the PRA, that event will
10 dominate the risk measures.

11 So risk measures will be higher. However,
12 importance of anything else will be lower.

13 So adding hazards to the PRA actually
14 would -- can significantly reduce conservatism in
15 risk-informed applications.

16 So, for example, adding the heavy load,
17 which was not added to total from the different
18 reasons would make everything else, like, for example,
19 the ECCS valves not important because the load itself
20 will dominate risk -- risk measures and importance
21 using risk-informed applications are relative.

22 So they are measured to the total thing,
23 and if the total thing is dominated by the hazard then
24 the other things become less important. So from the
25 point of conservatism, adding hazards would not make

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1 things -- you know, it will make them less
2 conservative.

3 MEMBER BLEY: But that's a kind of turned
4 around argument, Vesna.

5 MEMBER DIMITRIJEVIC: No. No. That's a
6 very well known argument. Sometimes you have to --

7 MEMBER BLEY: Well, if you got a big rock
8 it hides the other rocks. But there's no reason to
9 believe -- if there's -- if there's a reason to
10 believe one thing left out is dominant then you damn
11 well need to include it.

12 MEMBER DIMITRIJEVIC: Well, if your -- if
13 your goal is to -- if your goal is to report risk
14 measures, if your goal is to report risk metrics
15 that's a true statement.

16 But if your -- this is not for the
17 reporting to saying that we satisfy safety goal or
18 not. This is for risk -- this Reg Guide's approach to
19 the -- to the suitability of PRA for risk-informed
20 activities.

21 MR. MAIOLI: Okay. This is Andrea Maioli.
22 Sorry for interrupting --

23 MEMBER DIMITRIJEVIC: So did we get Roy
24 back?

25 MR. MAIOLI: I just wanted to let you know

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1 that Roy texted me saying that he has been having
2 problems connecting. So he's asking me to go through
3 the presentation, if that's okay for you.

4 MR. LINTHICUM: Yeah. Actually, Andrea,
5 I think I'm resolved, if everyone can hear me now.

6 MR. MAIOLI: Okay. Okay. Yes, I can hear
7 you. Yeah.

8 MR. LINTHICUM: All right. Yes, sorry
9 about that. I was having some technical problems and
10 I had to switch devices. But that's all been resolved
11 now.

12 So I'm Roy Linthicum. I'm employed by
13 Exelon and I'm the -- but I'm on full time loan to the
14 Owners Group as chairman of the Risk Management
15 Committee for the PWR Owners Group and I'd like to --
16 I just have a very short presentation on our
17 perspectives related to Reg Guide 1.200 and newly
18 developed methods.

19 So, Andrea, can you go to the next slide?

20 MR. MAIOLI: Can you see the -- which
21 slide can you see right now?

22 MR. WEERAKKODY: I see slide one.

23 MR. MAIOLI: Oh, I'm showing the wrong
24 screen. Okay. Well, I'll go -- I'll go here.

25 MR. LINTHICUM: All right. There you go.

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1 Yeah. So, yeah, like as already been
2 mentioned, we do think that Reg Guide 1.200 Rev 3 does
3 clarify some long-standing issues related to advancing
4 new methods in PRA and really does provide a cost
5 effective process to take regulatory acceptance of new
6 PRA methods.

7 And as Victoria mentioned, with regard to
8 closure of peer review findings, and Sunil mentioned
9 this as well, we do feel it's appropriate to leave
10 that decision as far as closure to licensee
11 discretion.

12 That's both findings that were open at the
13 time we made the licensing -- a license amendment
14 request as well as any new findings related to
15 upgrades that may come up.

16 And the reason for that, and I know Sunil
17 mentioned this, is we don't -- we don't feel the open
18 findings impact the risk-informed decision-making
19 process because even if you have an open findings the
20 way that a PRA maintenance program works you still
21 have to evaluate and disposition those findings
22 related to the specific application.

23 So that requires a certain level of effort
24 by the utility to do that. If you don't close a
25 finding that effort, you know, gets carried forward.

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1 However, there's also a cost associated with going
2 through the formal process of closing these findings.

3 So it is appropriate for the utilities to
4 weigh the, you know, the cost and efficiency benefits
5 associated with the closure and take the appropriate
6 path.

7 So I will be very happy to -- that the
8 staff agree to leave -- really, leave that to our
9 discretion with the key point is we still have to
10 evaluate and disposition anything that's open as we
11 move forward.

12 Next slide, please, Andrea.

13 A little bit regarding our report on
14 newly-developed methods. That's PWR Owners Group
15 19027.

16 We developed this, really, detailing the
17 process and requirements for technical adequacy and
18 newly-developed methods through a series of meetings
19 with a broad range of stakeholders.

20 Even though everything is documented in a
21 PWR Owners Group report, we did have representatives
22 from both Owners Groups, both the P and the B, NEI,
23 the Joint Committee on Nuclear Risk Management that
24 owns the PRA standard as well as the NRC. So it
25 really is a broad stakeholder input that went into

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1 that document.

2 And we also -- also through the process
3 there were three peer review pilots that actually
4 helped inform the final working as far as the
5 requirements and kind of report content in the final
6 document.

7 Next slide, Andrea.

8 So the content from the initial revision
9 that we submitted for inclusion in the 2021 edition of
10 the standard, that's been coming up.

11 We actually, you know, didn't want to
12 maintain our document as the document that has the
13 peer review requirements. You know, as a utility
14 organization we are not generally in the habit of
15 specifying, you know, these types of requirements.

16 So we have been working with JCRN to have
17 this -- these requirements actually transitioned and
18 become part of Part One of the next edition of the PRA
19 standard, which we expect at this point to be
20 published in mid 2021.

21 So with that, prior to submitting Rev 2
22 through the public comment period we did run through
23 another round of comments with the JCNRM so we could
24 harmonize the wording of our requirements to be
25 consistent with the expected wording in the standard,

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1 and you'll see that that effort was done and that
2 really forms the basis of the changes that we provided
3 through the public comment period as far as the final
4 revision related to the technical requirements for
5 duly developed method peer reviews.

6 If you go to the last slide, Andrea.

7 So and this slide -- I won't go over it in
8 detail, but just -- just a short description of the
9 types of changes that we made.

10 Really just wanted to clarify the
11 relationship between the newly developed methods and
12 existing methods as clarified. Really, this is --
13 goes to when you are revising a method rather than
14 something that is a new method on a couple of the
15 supporting requirements and high-level requirements.

16 Based on feedback from JCNRM we did change
17 some of the wording to be consistent with the
18 appropriate action verbs that the standard uses, and
19 similarly we submit -- we changed the structure a
20 little bit on the report format to meet the staff's
21 requirements.

22 It is important to note that, you know, as
23 we go through and we do peer reviews of these newly
24 developed methods there will be a report that's
25 submitted to the NRC that will be, you know, publicly

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1 available for the entire industry so that everyone is
2 aware of what new peer reviews or not -- what newly
3 developed methods have been peer reviewed.

4 So you don't have to go through and do a
5 -- do a separate peer review with the method as we
6 start to work through this process.

7 And with that, that ends my presentation
8 unless you have any questions.

9 MEMBER DIMITRIJEVIC: Do you have -- do
10 you have some example you can tell us the -- that this
11 new -- this new developed method was developed by the
12 licensee and it was not the -- some industry accepted
13 new method?

14 I don't know. Did I put expression well?.
15 You know I'm just explaining my concern on them.

16 MR. LINTHICUM: Are you asking for
17 examples of what new -- what a newly developed method
18 has been put through the process?

19 MEMBER DIMITRIJEVIC: Yes, but that method
20 is not, for example, that the new HRA method, those by
21 NRC, but it's some method developed by licensee.

22 MR. LINTHICUM: Yeah. So yeah, these --
23 yeah, these are really methods that are developed by
24 not necessarily a licensee. Generally, licensees
25 don't develop new methods.

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1 But, really, they would be potentially
2 methods that would be developed by, you know, either
3 PRA consulting firms, the Electric Power Research
4 Institute, or the Owners Groups with regards to new
5 methods.

6 I mean, you know, a licensee could develop
7 a new method but, you know, generally that's not done.
8 It's through these other, I would call, the technical,
9 you know, knowledge branch, you know -- you know, of
10 the industry rather than, you know, the licensees
11 developing these new methods.

12 It doesn't really apply to NRC. Yeah, it
13 doesn't really apply to NRC methods. If it -- you
14 know, if NRC develops a new method that they find
15 acceptable, I mean, we don't necessarily need to do a
16 peer review of that method because it's a separate
17 process.

18 MEMBER DIMITRIJEVIC: Right. Or if they
19 -- right. Or if that they have already endorsed the
20 method developed by EPRI or something, right? That
21 only applies to --

22 MR. LINTHICUM: That's correct.

23 MEMBER DIMITRIJEVIC: Yeah. Okay.
24 Correct.

25 MR. LINTHICUM: Yeah, and it's -- it is

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1 optional. It's not a requirement. You know, we still
2 retain -- there still retains the option of submitting
3 a new method through a comparable board review.

4 But they tend to -- the -- you know -- you
5 know, takes a lot of time and effort to get something,
6 you know, endorsed through that process.

7 MEMBER DIMITRIJEVIC: Okay. Thank you.

8 (Pause.)

9 MR. GILBERTSON: Okay. I think maybe --
10 am I -- I'm probably back up here to finish off the
11 rest of the NRC's presentation.

12 MEMBER DIMITRIJEVIC: Okay.

13 So the next will be the path forward.

14 MR. GILBERTSON: Correct. Yes.

15 MEMBER DIMITRIJEVIC: Okay.

16 MR. GILBERTSON: So is my presentation
17 showing up?

18 MS. LUI: Yes.

19 MR. GILBERTSON: Okay.

20 MS. LUI: You'll need to go to next slide.
21 Good.

22 MR. GILBERTSON: Okay. So regarding the
23 path forward, for Reg Guide 1.200 Revision 3 we are at
24 the end of our process for publishing the document.
25 We are still in the very final stages of the internal

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1 reviews and concurrence.

2 We will be considering any ACRS full
3 committee feedback as, you know, through discussions
4 and/or through a letter to the extent that it's
5 supplied there as well.

6 As it stands, we are expecting a final
7 publication sometime late this year to early next year
8 depending on a few -- a few factors that still need to
9 get sorted out. But, in general, it's -- we are
10 expecting it to be published relatively soon.

11 So looking forward beyond Revision 3 of
12 1.200, the staff have already started thinking about
13 Revision 4.

14 I would point out that our plans
15 associated with Revision 4 are still very much in the
16 nascent stages and there are -- we have some
17 dependencies between our guidance document and the
18 efforts of the ASME/ANS JCNRM who are responsible.

19 They are the standards development
20 organization responsible for publishing the consensus
21 PRA standards. And so for the past couple years or so
22 now, we have generally -- the staff have been
23 expecting that Revision 4 1.200 would include review
24 and endorsement of the next edition of the ASME/ANS
25 Level 1 LERF PRA standard, which, as Roy mentioned, is

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1 due to come out relatively soon as well.

2 The ASME/ANS Level 2 PRA standard as well
3 as the advanced LWR PRA standard, which is more of a
4 -- in some regards, it's a bit of an overlay on top of
5 the requirements in the Level 1 LERF PRA standard and
6 helps to describe what requirements are applicable to
7 different stages of the design life cycle and the
8 licensing process.

9 So the next edition of the Level 1 LERF
10 PRA standard I'll speak about that just for --
11 briefly. You know, this is a document that has been
12 in -- under development for the better part of the
13 last six to seven years or so in the JCNRM.

14 There's been a lot of thinking that's gone
15 into it. It's in the final stages of being -- of
16 achieving consensus and going through its balloting
17 process.

18 But the NRC has to -- we have to wait for
19 that to get finished, at least until the point where
20 we have what is ostensibly a technically stable
21 document that we could say okay, you know, they're
22 just doing editorial changes but we can look at the
23 technical contents and start making our decisions on
24 what our endorsement looks like.

25 The JCNRM's efforts related to the other

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1 two LWR standards for Level 2 and advanced LWRs are
2 very much tied to the Level 1 LERF PRA standard in
3 that the Level 1 LERF PRA standard is sort of the
4 bedrock for the structure and organization of the
5 other PRA standards.

6 So once the Level 1 LERF PRA standard is
7 finalized and it's published, the other efforts for
8 Level 2 and advanced LWR PRAs those will be starting
9 their finalization process to align with the Level 1
10 LERF PRA standard.

11 There's been a lot of work going on, a lot
12 of coordination between all of those different groups.
13 So we will need to wait for those to come forward.
14 And then I would also point out that the -- as some
15 members are already aware, the advanced non-LWR PRA
16 standard is going to be endorsed in a new NRC
17 regulatory guide or some endorsement vehicle with,
18 notionally, it's going to be a Reg Guide but we
19 haven't totally settled on that yet.

20 But I wanted to raise that because there
21 is a recognition by the staff an appreciation for the
22 fact that there are a lot of connections between the
23 advanced non-LWR PRA standard and the LWR standards.

24 In particular, the advanced non-LWR
25 standard requirements were largely sourced and derived

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1 and even adopted directly from the LWR PRA standards
2 for the related portions of PRA analysis.

3 So there's an additional connection point
4 in terms of achieving alignment, achieving
5 consistency. The advanced non-LWR PRA standard is
6 being moved forward ahead of the LWR standard.

7 So the staff are already in the mode of
8 thinking about what our endorsement will look like
9 that for that advanced non-LWR PRA standard.

10 But, of course, we have to understand what
11 our positions have been in the past because there are
12 related requirements, some of which that are
13 technology neutral already, and we just -- we have to
14 ensure consistency in our staff position in how we --
15 how we interpret those requirements.

16 And I guess, you know, something else,
17 getting back to the comment about the list of hazards
18 that we were discussing earlier, I would point out the
19 next edition of the ASME/ANS Level 1 LERF PRA standard
20 does include a non-mandatory appendix very similar to
21 that of the 2009 PRA standard and it does have an
22 expanded set of hazards to include things like heavy
23 load drop.

24 Off the top of my head, I think one of the
25 other ones, for example, is non-safety-related

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1 building fires, looking at other -- like, other types
2 of external fires like grass fires and not just, you
3 know, a forest fire, for example.

4 So there is an expansion of that. But I
5 would point out, as I mentioned before, the staff will
6 be looking at that and also will be considering
7 whether there is a need for additional hazards beyond
8 what's listed in the next edition.

9 There are some guidance documents
10 available. I believe EPRI has a guidance document
11 that provides a similar what is intended to be a
12 fairly expansive list of hazards to consider that
13 includes everything, internal hazards all the way out
14 to what we -- are colloquially called these other
15 hazards.

16 So things that are not -- hadn't been
17 traditionally modeled using a PRA but are often
18 screened out. And that's a pretty expansive list
19 that's in that EPRI document.

20 So it's just an example of some of the
21 things that the staff will be thinking about as we
22 look at Revision 4 of Reg Guide 1.200. So it is on
23 our radar to consider those things.

24 MEMBER DIMITRIJEVIC: I have a question.
25 This is Vesna Dmitrijevic again.

1 MR. GILBERTSON: Yes?

2 MEMBER DIMITRIJEVIC: Usually, I mean,
3 your Reg Guide endorses the PRA standards, you know,
4 related to the high level -- the requirements and the
5 supporting requirements.

6 However, the Reg Guide should also -- I
7 mean, you know, the -- it's there to define the
8 process, right, and that the process feel different --
9 is different when you are dealing with not mature
10 PRAs.

11 Like, it would be case -- you know,
12 because if you go for an advanced light-water PRA
13 standard then you look in the standard itself, which
14 defines what requirements cannot be met in the -- in
15 the, for example, the design certification level when
16 you don't have operating procedures and things like
17 that.

18 But we have a situation here where we are
19 dealing with a not mature PRA which will be maturing
20 through the process of the -- between design
21 certification and fuel load. So does the -- do you
22 think that the reg guide revision four will try to
23 make attempt to define this process?

24 MR. GILBERTSON: So --

25 MEMBER DIMITRIJEVIC: Or is it just going

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1 to say concentrated on recently formed applications?

2 MR. GILBERTSON: So in principle, yes. I
3 think it should, and as far as the guidance document
4 the staff are already in the process of thinking about
5 for advanced non-LWR PRA standard. We are having to
6 deal with the same -- the same issue.

7 So, for example, what's the process when
8 a PRA goes from -- is being used from the design
9 certification stage and then it's used for a COL
10 application? What are the difference in requirements?
11 Does it need a peer review?

12 Are the staff reviewing it? You know,
13 what are the -- what's the process for that. So that
14 -- I don't know at the moment how that will -- how
15 that will work out for LWRs. But I know that is
16 something that we are thinking about for the -- for
17 the non-LWRs.

18 MEMBER DIMITRIJEVIC: Okay. Well, that --
19 you're right. That's, actually, the essence of my
20 question because this advanced light-water also new
21 designs and they will be meeting some of the similar,
22 you know, issues which are more obvious for non-light-
23 water reactors, right?

24 MR. GILBERTSON: Right.

25 MEMBER DIMITRIJEVIC: Now, my other

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1 concern is that in this new PRA, so all advanced
2 light-water reactor, you know, they said the PRAs
3 which are being developed now in the design
4 certification stage, that there is the 146 guides also
5 which define what are risk-informed -- you know, risk-
6 informed applications that traditionally define as the
7 ones to be rated though the Reg Guide 1174 and, you
8 know, subsequent, you know, 1176, 78, whatever. One
9 of them is now 10 CFR 5069.

10 But also there is a risk-informed -- there
11 is a use of PRA in a lot of the design applications
12 which are not these formal risk-informed applications
13 but there is still use of the PRA, for example, to
14 define the RAF program or the important human actions
15 for human factor engineering or in some cases to ask
16 for exemption from general design criteria.

17 So these uses of -- so PRA is used in
18 design certification on numerous places. The question
19 is should those use of the PRA be considered risk--
20 informed applications.

21 MR. GILBERTSON: So I appreciate you
22 raising that question and that is a perfect example of
23 one of these issues that has -- that has relevance
24 across LWRs and the non-LWRs.

25 That is something -- that is exactly

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1 something that we are considering right now, how do we
2 deal with that for advanced non-LWRs because, like you
3 said, there are plenty of examples of where the PRA is
4 used and what are really considered to be, you know,
5 a risk-informed application, other parts of the
6 application.

7 The staff are still deliberating on that
8 and trying to come to a solution on how that is
9 handled. So I would have to -- I would have to caucus
10 with the staff first before I could provide I guess
11 any more additional feedback on that.

12 MEMBER DIMITRIJEVIC: That's all right.
13 I don't even need the answer. I just wanted to hear
14 that you're thinking about those things.

15 MR. GILBERTSON: Yes, absolutely.

16 MEMBER DIMITRIJEVIC: Okay. Well, thank
17 you. Okay.

18 MR. GILBERTSON: Okay.

19 Okay. So this last slide, you know, I
20 wanted to provide this slide to just give some
21 additional insights into other work, related work,
22 that the staff are considering, and, you know, in the
23 past ACRS full committee letters that have been
24 written related to Reg Guide 1.200, a common theme
25 that rose was that of guidance and the treatment of

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1 uncertainties.

2 And so, you know, from those
3 interrogations and those discussions, the staff
4 eventually came to develop NUREG 1855 for the
5 treatment of uncertainties in PRA for risk-informed
6 decision-making.

7 That was originally published, and I
8 believe it's 2009, it was Revision 1 and -- or
9 Revision 0. Revision 1 was published more recently in
10 2017.

11 And so there are some natural aspects of
12 that guidance document, NUREG 1855 Revision 1, that
13 need to be updated because they do have some temporal
14 references to documents, for example, the 2009 PRA
15 standard.

16 So, you know, for example, one of the
17 least things that we'll need to do and consider is
18 just finding those references and updating the
19 document to reflect the next edition of the advanced
20 -- I'm sorry, of the Level 1 LERF PRA standard once
21 that becomes available.

22 For example, we point -- 1855 points to
23 specific supporting requirements in the Level 1 LERF
24 PRA standard that relate to screening, completeness,
25 uncertainty, that sort of thing.

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1 So those will just need to be updated.
2 And beyond that, you know, we'll also take a more
3 holistic review to consider other changes that were
4 made to -- in the Level 1 LERF PRA standard to see
5 where additional guidance might need to be revised or
6 adjusted.

7 Another aspect that the staff are
8 considering is the potential development of
9 application-specific guidance, and so this, you know,
10 would really be focused on providing that additional
11 guidance and insight into how to treat uncertainties
12 for, say, a 5069 application or for just a 505 risk-
13 informed completion time program.

14 We have seen some instances where there's
15 potentially a need for that but it is something that
16 we are just considering at this point and we have to,
17 obviously, work with the program offices to understand
18 what their needs are.

19 Another -- it's a bit of a larger point
20 here, expanding the guidance on uncertainty and risk-
21 informed decision-making. There's been some work on
22 this in other areas internationally.

23 IAEA provided or published recently a
24 document on integrated risk-informed decision-making.
25 There have been discussions internally and some

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1 thinking about how 1855 might be expanded to offer
2 some more useable guidance on how to do risk-informed
3 decision-making with uncertainties.

4 But at the same time, you know, balancing
5 that with the level of prescription that's not too
6 constraining. So that's -- that's probably a bigger
7 effort.

8 There is some guidance already in 1855.
9 It's just -- it's relatively general or relatively
10 high level and so there could be an opportunity to
11 improve that.

12 And then, finally, I just wanted to
13 mention that we would also consider uncertainties
14 related to PRA for advanced reactor designs and
15 understanding -- I think earlier on Monday during the
16 future plant design subcommittee meeting there was a
17 discussion and concerns raised about completeness
18 uncertainty.

19 Those concerns were also discussed at the
20 February 2020 subcommittee meeting for this Reg Guide.
21 So we do have that on our minds and we want to think
22 about that, particularly for advanced reactor designs
23 and to include, obviously, advanced non-LWRs as well
24 because of the lack of experience that we have in the
25 technologies, operating experience, and application of

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1 PRA in general for those -- for those new designs.

2 So with that, that is -- that is the end
3 of my presentation. I am happy to entertain any
4 questions or comments.

5 MEMBER DIMITRIJEVIC: I just wanted to add
6 something with your last point, because the -- somehow
7 uncertainty in the advanced application is a sort of
8 afterthought. You know, it's something they have to
9 do and they can follow guidance, do it well or less
10 well.

11 It could be small. It could be big. But
12 that doesn't impact any of the decision-making. There
13 are two plans which are coming with another range of
14 certainty, a large range of certainty, uncertainties
15 done perfectly making an effort to put the -- for
16 example, modeling uncertainty.

17 There is no any, you know, regulatory
18 implication of these things. It's a total
19 afterthought. It's just some section being done, sit
20 there, and not being really used.

21 And this could be related to the way how
22 we treat the mean they can use -- they can have this
23 state of knowledge, the phenomena identified, or they
24 can just treat all uncertainties as independent.

25 There is no really -- you know, there is

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1 not anything which when we review this, you know,
2 makes for us a reason to make a comment on it.

3 That can be related to use of the mean
4 values versus point estimates or something. But that
5 nuclear regulation is very much lacking in this area.
6 That's my personal opinion.

7 MR. GILBERTSON: Okay. I appreciate that.
8 Thank you. I'll definitely take that back and -- and
9 for the staff to consider.

10 MEMBER DIMITRIJEVIC: Okay. So should we
11 open now for public comments and -- or there is, do
12 the members have comments at this moment? Or we can
13 also save them for member discussions after that. So
14 shall we maybe open for public comments in this
15 moment?

16 Christiana? Chris, are the -- are our
17 public lines open?

18 PARTICIPANT: The public bridge line is
19 open for comment. We would ask that folks from the
20 public please ensure your device is unmuted.

21 MEMBER DIMITRIJEVIC: Okay. So at this
22 moment if anybody from public would wish to make a
23 comment please do so.

24 MS. LUI: I am on a public line and so I
25 -- we can be sure that the public line is open.

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1 DR. SCHULTZ: Christiana, this is Steve
2 Schultz. Can you hear me?

3 MEMBER DIMITRIJEVIC: Yes, we can hear.
4 We just heard you, yes.

5 Hello?

6 MEMBER BLEY: I don't think you have any
7 comments, Vesna.

8 MEMBER DIMITRIJEVIC: Okay. I know the --
9 okay. So we -- did Steve Schultz would like to make
10 a comment?

11 DR. SCHULTZ: I just wanted to let you
12 know the public line was open.

13 MEMBER DIMITRIJEVIC: Oh, okay. All
14 right. Okay. Sorry, I misunderstood. Okay. So no
15 one has a public comment. So in this moment we can
16 proceed with the members' discussion.

17 Sorry, I accidentally muted myself. Do
18 members wish to make additional comments?

19 (No response.)

20 MEMBER DIMITRIJEVIC: Okay. What is our
21 waiting period?

22 MEMBER BLEY: I think -- I think you've
23 got it.

24 MEMBER DIMITRIJEVIC: Okay.

25 CHAIRMAN SUNSERI: You got it.

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1 MEMBER DIMITRIJEVIC: Okay. So I would
2 like to make this -- the closing, the summary. I
3 would like to thank the staff for coming back and
4 inform us all the changes that were incorporated in
5 order to complete Revision 3 of Reg Guide 1.200,
6 including since our last meeting the resolution to the
7 public comments.

8 We recognize that this revision fulfills
9 an important role to close in timely fashion the gap
10 related to resolution of the acceptability of new
11 methods or models in order to support future risk-
12 informed regulatory initiatives.

13 As a part of this resolution, this
14 revision endorses the technical content found in NEI
15 17-07 and PWR OG 19027.

16 This Reg Guide also endorses a third
17 document, the ASME/ANS Case One for seismic PRA and in
18 addition the revision provides the general updates
19 related to organization and numerous enhancements and
20 clarification to guidance.

21 We agreed the Reg Guide meets the intended
22 goals and objectives, and that the -- we sent some
23 comments to the completeness of the hazard list. So
24 we can discuss now the staff has not requested the
25 letter from us and we have also discussed this in

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1 February that if we are going to just write a letter
2 to say to publish this without having major comments
3 maybe we do not have a need for the letter.

4 So, Dennis, you had a comment on the --
5 which was -- supported the causes of completeness of
6 the hazard list. Do you see this as appealing reason
7 for us to write the letter? How do you feel about it?

8 MEMBER BLEY: The more I thought of it --
9 I'd be delighted if the staff added a little
10 clarification in their Appendix D. But I don't think
11 we need to write a letter on this. The issues that
12 kind of fill out this list are covered in lots of
13 other guidance already.

14 But I think in the future that principle
15 of looking at consistency rather than of what's
16 important should be kept in everyone's minds. But I'm
17 happy with your proposals to go ahead.

18 MEMBER DIMITRIJEVIC: So we -- the
19 transcripts of this meeting should serve as our
20 expression of the committee support of the -- this
21 completed part of its assurance.

22 So or maybe the staff would like that we
23 issue -- that our executive director issues memo
24 stating that we agree with issuing the Reg Guide. We
25 can discuss this now. I mean, how does staff feel

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1 like, you know, about --

2 MEMBER BLEY: Well, it's not a staff
3 question so much, Vesna. We have been involved in all
4 of these risk applications since their very beginnings
5 as a committee and I just think we ought to have
6 something beyond the transcript and maybe executive
7 director memo saying we have no objection with
8 releasing this Reg Guide. I think we ought to have
9 something.

10 MEMBER DIMITRIJEVIC: Okay. Is Scott on
11 the line?

12 MR. MOORE: I am on the line.

13 MEMBER DIMITRIJEVIC: So the -- would we
14 issue -- if you issue a memo stating that we agree
15 with issuing these Reg Guide is that one option for
16 us, too?

17 MR. MOORE: I can always issue a memo at
18 the committee's direction. I think the committee
19 should direct me what you want me to issue.

20 MEMBER DIMITRIJEVIC: Okay. Okay. So --

21 MEMBER MARCH-LEUBA: Yeah, this is -- this
22 is Jose. I don't see how the procedure will work. I
23 mean, you're asking Scott to write our letter. We
24 don't have to write a 25-page letter. We can write a
25 two-line letter that says we agree with publication of

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1 the guide. It doesn't need to be long. But I don't
2 -- I don't see how we can delegate our letter to
3 Scott.

4 MEMBER DIMITRIJEVIC: Well, this is one of
5 -- this is one of the options the committee has.
6 Also, I have to point out that in February meeting
7 you're the one who brought up this letter, why do we
8 need to write the letter. We just state the issue Reg
9 Guide and just went to transcripts yesterday.

10 So that was a part of discussion in
11 February and I thought actually that makes sense, the
12 issuing the committee letter just stating the Reg
13 Guide should be issued.

14 MEMBER BLEY: Vesna, this is Dennis. I'm
15 just one member. I kind of thought we ought to be on
16 record somehow. I wouldn't push it.

17 I mean, I think letting it stand on the
18 transcript is probably fine. It's -- my preference
19 would be to have a very short letter saying we think
20 it's time to issue this Reg Guide. But that's just
21 me. I'm only one.

22 MEMBER DIMITRIJEVIC: Okay. So how do the
23 rest of the members feel about this? Do you think we
24 should issue a formal letter or the -- this discussion
25 should be fine? Does anybody have a --

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1 MEMBER MARCH-LEUBA: I think -- this is
2 Jose -- procedurally, we only have two options.
3 Either we issue a letter, a very short letter.
4 Doesn't have to be more than a page. Or we remain
5 silent, because the ACRS can only speak through its
6 members.

7 We cannot just ask Scott to write our
8 letter. So I don't carry any weight, honestly. But,
9 procedurally, those are the only two options. Remain
10 silent or speak. I mean --

11 MEMBER DIMITRIJEVIC: Well, Jose, as a new
12 member I was informed -- I was informed that we could
13 also -- that our executive director could issue memo,
14 which is not a formal letter. So that was something
15 I was informed about. So --

16 CHAIRMAN SUNSERI: Well, let's -- let's
17 not distract ourselves. The question on the table
18 right now is whether or not the committee wants to
19 write a letter on this.

20 MEMBER DIMITRIJEVIC: Okay.

21 CHAIRMAN SUNSERI: You heard two members
22 say they could go either way. We have you as the
23 chairman of the group recommending no letter. So
24 let's hear from the other members.

25 This is our opportunity. This is as we

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1 discussed in our retreat our decision-making point for
2 whether or not we want a letter. We heard the
3 subcommittee on this. We have not heard a full
4 committee briefing on it. So members need to speak up
5 and provide some good input on this.

6 MEMBER BALLINGER: This is Ron. I think
7 for posterity purposes we need to somehow enshrine
8 this in a document which the general public that goes
9 to the website can see.

10 So I guess I'm in favor of a -- what
11 people say is a two-line letter and, hopefully, we
12 would not be debating the two-line letter for five
13 hours once we get to look at it.

14 MEMBER KIRCHNER: Vesna, this is Walt.
15 Since we, as a committee, have put this much effort
16 into this as well as the effort of the staff and
17 industry, my -- I lean with Ron that even if it's a
18 short letter -- two lines is silly -- but just a short
19 letter and maybe that's also a vehicle then to raise
20 Dennis's comments if we all concur and then it's in
21 the record. I think it a good idea.

22 MEMBER DIMITRIJEVIC: Okay. Anybody else
23 have an opinion on the subject?

24 MEMBER RICCARDELLA: This is Pete. I
25 don't have a strong feeling one way or the other.

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1 I'll go along with whatever the majority decides.

2 MEMBER DIMITRIJEVIC: Should we vote on
3 this or should we --

4 CHAIRMAN SUNSERI: Well, yeah. I'm taking
5 notes here so I'm just going to go down the list. So
6 Charlie, what's -- what's your position?

7 (No response.)

8 CHAIRMAN SUNSERI: Member Brown? Unmute.

9 MEMBER BLEY: While you're waiting for
10 Charlie, this is Dennis. Show me as favoring a
11 letter.

12 CHAIRMAN SUNSERI: Okay. All right. So
13 I'll undo your either way with a letter. All right.
14 So we know Vesna. Jose, I had you as either way. Or
15 you want to modify that?

16 MEMBER MARCH-LEUBA: Abstention. An
17 abstention.

18 CHAIRMAN SUNSERI: Okay. Dave, thoughts?

19 MEMBER PETTI: I'm indifferent. I'll go
20 with whatever the majority.

21 CHAIRMAN SUNSERI: Okay. The majority is
22 going to be two people. All right. Joy, your
23 thoughts?

24 VICE CHAIRMAN REMPE: I think a very short
25 letter would be wise because ACRS has a long history

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1 of being very involved and proactive about PRA, and I
2 think it would be helpful to have a short letter.

3 CHAIRMAN SUNSERI: And, Pete, I had you
4 either way. So you want to recant or stick with that?

5 MEMBER RICCARDELLA: No. Like Jose, I'll
6 abstain.

7 CHAIRMAN SUNSERI: All right.

8 MEMBER BROWN: Matt, did you ask for me?

9 CHAIRMAN SUNSERI: I can loop back to you
10 now. So we're discussing whether or not we want to
11 have a short letter on this topic. What's your
12 opinion?

13 MEMBER BROWN: I'm not as knowledgeable.
14 However, I would not abstain. I think it's important.
15 This is another -- a big revision to it.

16 We're always talking about it, and it
17 seems that we ought to at least stick our finger in
18 the water. A short letter, to me, is appropriate.

19 CHAIRMAN SUNSERI: Okay.

20 MEMBER BROWN: As long as -- if we have
21 got a major issue we ought to bring it up. This
22 doesn't sound like, based on listening to the
23 presentations, that there's a major issue here.

24 But I know I've written at least one or
25 two letters where there was no comments in our letter

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1 other than we agreed with it. So I think that's a
2 good idea.

3 CHAIRMAN SUNSERI: All right. So by my
4 tally it looks like we have half or more of the
5 members would favor a short letter. So, Vesna, I
6 think we should be preparing a short letter.

7 MR. BOWMAN: And can I -- this is Greg
8 Bowman with the staff. If I could just offer -- I
9 think I really appreciate the letter. I think it will
10 actually -- I know -- I know this is unsolicited
11 feedback.

12 But I think that will actually help us
13 having documented ACRS support of this major project.
14 So I appreciate the outcome that you're coming to.
15 Thank you.

16 MEMBER BLEY: Vesna, this is Dennis. You
17 -- since I pushed this I would volunteer to get you by
18 later today a draft, if you would appreciate it.
19 Otherwise, I'll certainly defer to you.

20 MEMBER DIMITRIJEVIC: Okay. All right.
21 Well, thanks, Dennis. That's okay. Then we will
22 probably write this later and we may not have it
23 today. But, you know, we will definitely have it for
24 tomorrow.

25 CHAIRMAN SUNSERI: Yeah. Well, I think

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1 we'll have a lot of time tomorrow to work on this. So
2 all right.

3 MEMBER DIMITRIJEVIC: Thank you. All
4 right.

5 I would like to add something else, which
6 is much more important for me. This is why I asked
7 for a discussion on the future of things for the
8 Revision 4, because while we have this existing review
9 process, I mean, that serves routine updates quite
10 well.

11 The -- I think for Revision 4 it will be
12 good to establish a process which ensures the
13 committee recommendation and consider sooner rather
14 than later. In other words an immature product
15 shouldn't have been the first we see, you know,
16 because then it's a much -- you know, it's maybe too
17 late to make the major comments.

18 So something like that. Then it will be
19 the -- so our engagement -- it will be good to have
20 first engagement, of course, before the mature product
21 is developed.

22 Since we have an extensive experience with
23 advanced light-water reactor design certification
24 application we are likely to have a more significant
25 recommendation and opinion on the next revision of

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1 this Reg Guide.

2 So this is why I was thinking about that
3 -- that before the staff puts pen to the paper it
4 would be very productive if we have an initial meeting
5 to discuss this whole issue and conceptual approaches
6 for the -- especially for how to incorporate advanced
7 light-water reactor, the standard.

8 The -- it will be -- this will be also
9 important because we just discusses this integrated
10 approach that Revision 4 of Reg Guide 1.200 should be
11 related to non-light-water standard and also for
12 ongoing Part 53 rulemaking, which the committee is
13 actively involved with both.

14 So I would like to propose that we want
15 the staff, through Christiana, to find the best timing
16 and the best foreman so that we can provide timely and
17 relevant recommendations for the Rev 4, and as much as
18 I discussed this with my more experienced colleagues,
19 they say that we can accomplish this through the --
20 having the participatory discussion meetings, which
21 could be either transcribed or not, and in such a
22 meeting we can discuss about this -- we can talk about
23 key issues and the staff can hear the opinion of the
24 individual members.

25 So I just wanted to get this on the record

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1 that I hope that for the next rev we will find the
2 good format and a good way to get include -- involved
3 in the process earlier.

4 MR. WEERAKKODY: May I ask a clarifying
5 question? This is Sunil Weerakkody, NRR.

6 Dr. Dimitrijevic, I believe when you made
7 that statement it's also including advanced light-
8 water reactors and advanced non-light-water reactors?
9 I'm asking --

10 MEMBER DIMITRIJEVIC: No, we -- okay, we
11 are discussing this with you just related to advanced
12 light-water reactor but we are also -- it's the
13 committee working with, you know, the future non-
14 light-water reactor and also Part 53.

15 So review and developing Rev. 4 of the
16 Reg Guide. As you show us in your slides, it will
17 include advanced light-water reactor standards. And
18 so right now specifically I was talking about advanced
19 light-water standard, yes.

20 MR. WEERAKKODY: Thank you.

21 CHAIRMAN SUNSERI: All right, Vesna.
22 Thank you.

23 Anything else on this topic?

24 MEMBER MARCH-LEUBA: Yes. Yes. I don't
25 want to be confrontational, Vesna. I'm just talking

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1 procedure. I mean, you know I'm on procedure now.
2 But if you get involved in the design of the solution,
3 then it challenges independence of our review.

4 It's not the function of ACRS to guide how
5 the staff gets the solution. A function of ACRS is
6 to evaluate whether the solution is acceptable. So
7 that's something to consider.

8 I know you're wanting to get into Chapter
9 15 analysis and everything involved earlier but they
10 won't let me because you're not supposed to. I just
11 wanted to put that concept out there. Independence.

12 MEMBER DIMITRIJEVIC: Well, this will not
13 be the guiding the staff, in my opinion. It is to
14 staff to, you know, here our individual members'
15 opinion on the -- on the -- how does this process
16 impacted our experience with this.

17 I mean, I think that having -- actually,
18 which I think clearly did, having this discussion
19 meetings before we face the final product, you know,
20 a lot of cases can be helpful.

21 MEMBER BLEY: This is Dennis. You know,
22 Jose brings up a very good point and National Academy
23 committees have the same issue arise. It's a fine
24 line between being involved in development and
25 providing early hints of where problem areas might

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1 live, and we have to live on that second side.

2 We can't be designing programs for the
3 staff. But we can be letting them know where ideas
4 they're considering might run into problems and, you
5 know, Vesna and I talked a little bit about this
6 before and that's what I was getting at by discussion
7 meetings.

8 We have done that on a number of cases in
9 the past as a committee and I've been on both sides of
10 that, and the committee has to be careful not to be
11 part of the development.

12 But we're looking and providing warnings
13 about places it could get into trouble and it lets the
14 staff probe us for ideas of where the snakes might be
15 lying in a new process.

16 MEMBER DIMITRIJEVIC: Thank you, Dennis.

17 CHAIRMAN SUNSERI: Okay. Do you need any
18 other -- any other discussion?

19 So, Vesna, does that wrap up this topic?

20 MEMBER DIMITRIJEVIC: I think that we can
21 wrap this section with this. Thank you, everybody,
22 very much. We are 45 minutes late.

23 But we have a -- we have -- we are 45
24 minutes late and we have to write the letter, so add
25 to our meeting. But I think it will -- likely will be

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1 short then.

2 CHAIRMAN SUNSERI: Okay. So my
3 understanding is the action going forward is is that
4 Dennis has taken on the action to go prepare the draft
5 letter report and we will take that up tomorrow after
6 the T&P session during our report preparation period.

7 And if -- Dennis, if you get that draft
8 out tonight, maybe we could get it distributed so the
9 members could review it in advance.

10 MEMBER BLEY: Yeah, I'm going to -- I'll
11 get something to Vesna first and I'll probably not
12 participate much for a couple hours here to try to --

13 MEMBER DIMITRIJEVIC: Well, the thing is
14 I already have a draft prepared and --

15 MEMBER BLEY: Oh, you do? Okay.

16 MEMBER DIMITRIJEVIC: Yes, and it's a very
17 rough draft. But I will send it to you so please
18 participate in this. This shouldn't take a long time.
19 So --

20 MEMBER BLEY: Well, one of the objections
21 that was brought up earlier, I was chairman and after
22 that I've kept a -- I think it was a Chairman Stratton
23 letter on the board as an example of concise ACRS
24 letters. It was a very short paragraph.

25 MEMBER DIMITRIJEVIC: Okay. I didn't --

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1 CHAIRMAN SUNSERI: Well, let me -- let me
2 -- you can work offline on that.

3 MEMBER DIMITRIJEVIC: Yes. We will work
4 offline. Let's finish, go for lunch. And when
5 should we come back then?

6 CHAIRMAN SUNSERI: So what I -- let's talk
7 about the rest of the day then. We normally take
8 lunch around 1:00 o'clock and it's just too early, I
9 think, for the people. Half of the committee is on
10 Mountain or East Coast time -- West Coast.

11 So I'd like to hold out until 1:00 o'clock
12 for lunch. So I'm going to propose we take a 10-
13 minute break, reconvene at 12:30.

14 (Whereupon, the above-entitled matter
15 concluded at 12:19 p.m.)

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Regulatory Guide 1.200, Revision 3

Briefing for the Advisory Committee on Reactor Safeguards Full Committee

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November 5, 2020

Overview

- Purpose
- Background
- Changes incorporated into Revision 3
- ACRS Subcommittee members' feedback
- Primary regulatory driver for Revision 3
- Resolution of public comments on DG–1362
- Path forward

Purpose

To brief the ACRS Full Committee and solicit feedback on the staff's resolution of public comments on the staff's proposed revision 3 to Regulatory Guide (RG) 1.200 (i.e., DG-1362*)

* Available in the Agencywide Document Access and Management System (ADAMS) under accession No. ML19308B636

Background

- RG 1.200 provides an approach for determining the technical acceptability of a base probabilistic risk assessment (PRA) model for use in regulatory decisionmaking for light-water reactors (LWRs)
- PRA acceptability is determined with respect to the following aspects of the base PRA:
 - Scope
 - Level of detail
 - Conformance to consensus PRA standard technical elements (i.e., technical robustness)
 - Plant representation

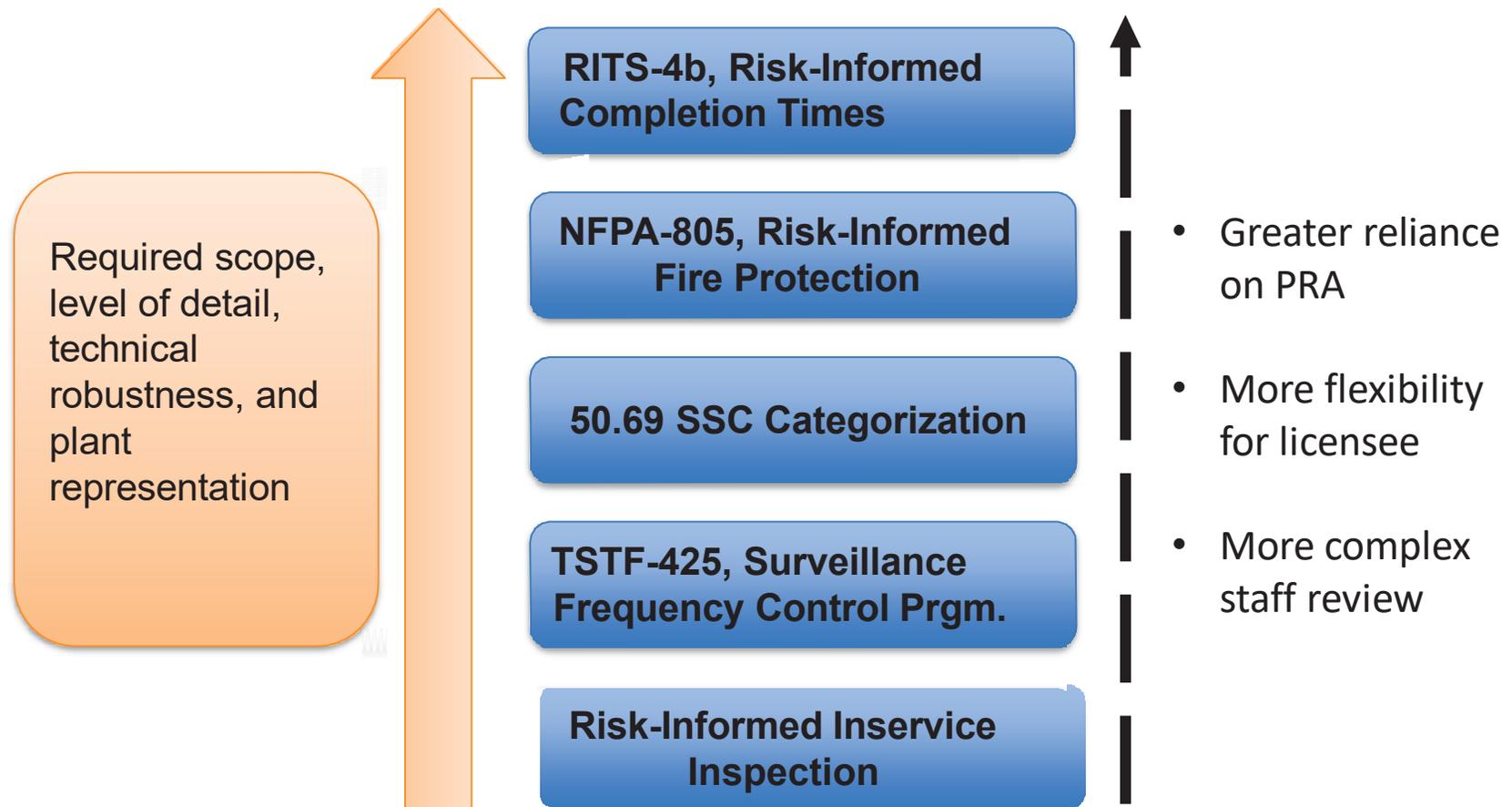
Background – PRA Acceptability



Each element depends on the other in order to demonstrate PRA acceptability

This paradigm obviates the need for an in-depth staff review of the base PRA model

Background – PRA Acceptability (cont’)



Changes incorporated into RG 1.200, Revision 3

- Endorses new industry documents:
 - NEI 17-07, Revision 2 (ML19241A615)
 - Consolidates predecessor industry PRA peer review guidance for different hazard groups
 - PWROG-19027-NP, Revision 2 (ML20213C660)
 - Includes requirements for determining acceptability of newly developed methods (NDMs) and necessary submittal documentation
 - Includes process for differentiating between PRA maintenance and a PRA upgrade
 - ASME/ANS RA-S Case 1 (i.e., the seismic code case)

Changes incorporated into RG 1.200, Revision 3 (cont')

- Provides a new glossary of terms
 - Some terms adopted directly from PWROG-19027-NP
- Provides descriptions of hazards to be considered in the development of a PRA

RG 1.200, Revision 3, retains the staff endorsement of ASME/ANS RA-Sa-2009 with an exception for terms and definitions endorsed from PWROG-19027-NP, Revision 2

ACRS Subcommittee Members' Feedback

- The staff briefed the ACRS Subcommittee on Reliability and PRA on February 5, 2020
- The staff did not identify changes based on views expressed by committee members

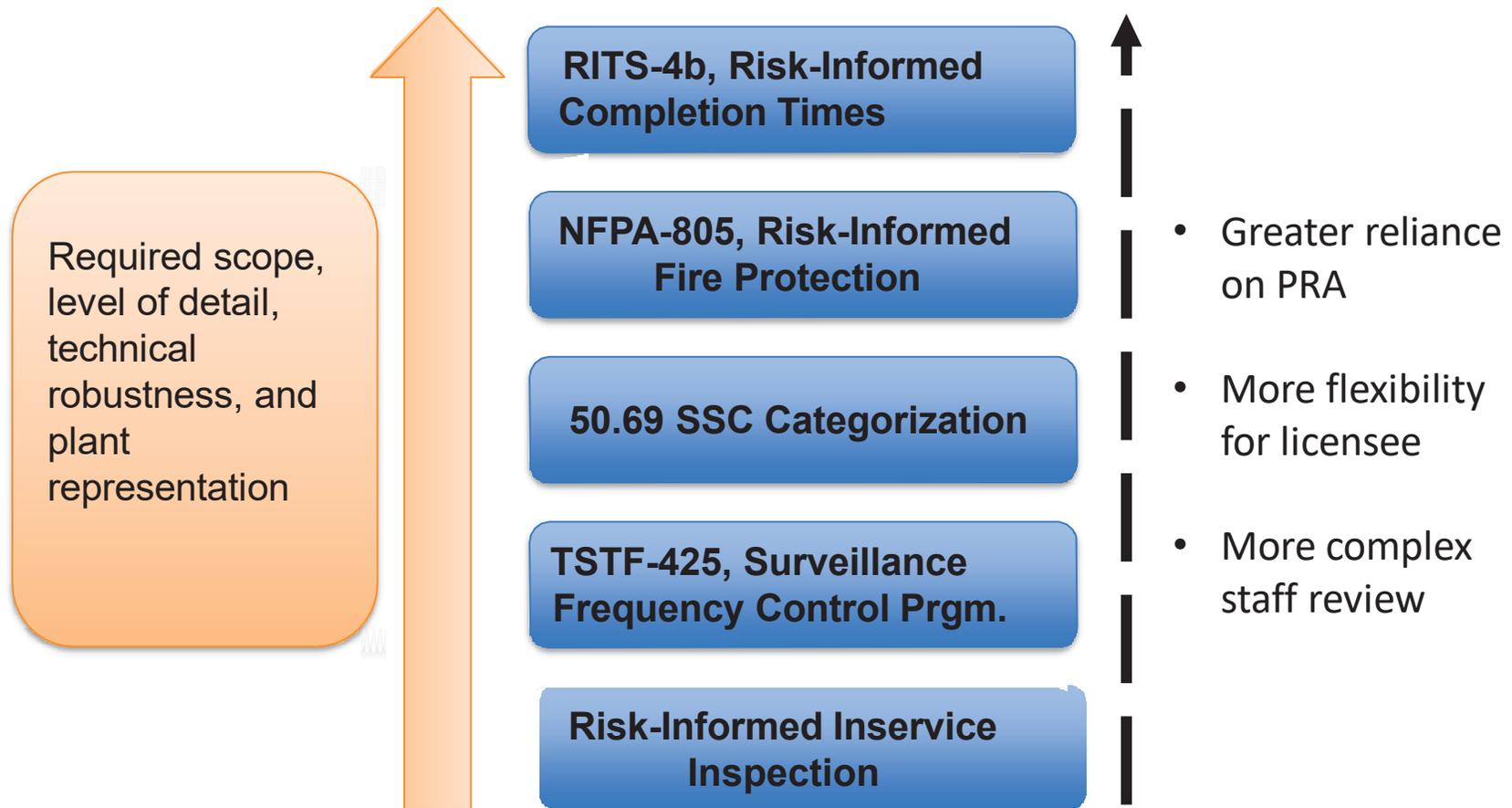
Primary Regulatory Driver for RG 1.200, Revision 3

- Evolution of the peer review process
 - “Gap” in Rev. 2 of RG 1.200 with respect to peer review of NDMs
 - Significance of closing this “gap,” specifically for (Risk-Informed Technical Specification (RITS)-4b)
 - Strategy to close this “gap” using PWROG-19027-NP and NEI 17-07

A “Gap” in RG 1.200 and the ASME/ANS Level 1/LERF PRA Standard

- For each technical element, the ASME/ANS Level 1/LERF PRA standard provides high-level requirements (HLRs) and supporting requirements (SRs).
- 2009 version of the ASME/ANS Level 1/LERF PRA standard endorsed via Revision 2 to RG 1.200 does not provide HLRs or SRs for NDMs; Furthermore, there is no definition of what constitutes an NDM.
- This “gap” resulted in inefficiencies in the staff’s review of NFPA 805 applications and loss of confidence of the peer review method to adequately peer review NDMs.

Importance of Closing the “Gap”; Base PRA Acceptability for an Application



Current Solution to the “Gap”

- For RITS-4b applications, staff has imposed the following Administrative Technical Specification (TS)/License Condition:

“...and any change in the PRA methods to assess risk that are outside these approval boundaries require prior NRC approval.”

Leveraging the Commission Endorsed Peer Review Process to Close Gap

- SECY-99-256: “Rulemaking Plan for Risk-Informing Special Treatment Requirements,” October 29, 1999
- COMNJD-03-0002, “Stabilizing the PRA Quality Expectations and Requirements,” September 8, 2003
- SECY-04-0118, “Plan for the Implementation of the Commission’s Phased Approach to Probabilistic Risk Assessment Quality,” July 13, 2004
- SRM-SECY-04-0118, “Plan for the Implementation of the Commission’s Phased Approach to Probabilistic Risk Assessment Quality,” October 6, 2004.
- Establishment of the peer review process using RG 1.200 and consensus standards
- Peer review process acknowledged in regulations (10 CFR 50.69, November 2004)

Approach to Close the “Gap” in RG 1.200, Revision 3

- PWROG-19027-NP, Revision 2:
 - Provides definitions related to NDMs, PRA maintenance, and PRA upgrade.
 - Provides 6 HLRs and 21 SRs for peer review of NDMs (Are being considered for inclusion in the next edition of the ASME/ANS Level 1/LERF PRA Standard)
- NEI 17-07, Revision 2:
 - Delineates the process that peer reviewers must use to peer review NDMs in addition to other technical elements of the PRA.
- Emphasis has been added to *close* as opposed to *disposition* peer review finding relating to NDMs prior to using them in PRA models.

Public Comments on DG–1362: Summary

- DG-1362 issued for public comment on 07/01/2020
 - 30-day comment period ending 07/31/2020
- Received 19 public comments
 - Nuclear Energy Institute (NEI; 15 comments including text in transmittal letter)
 - Pressurized Water Reactor Owners Group (PWROG; 3 comments)
 - Individual (1 comment)
- Public comments included responses to two questions in *Federal Register* notice (FRN) on the closure of peer review findings using an NRC-endorsed approach
- PWROG submitted updated report PWROG-19027-NP, Revision 2, with its public comments

Changes to DG-1362 Based on Public Comments

Synopsis of Comment	Synopsis of Change to DG-1362
Peer review of PRAs that credit planned modifications	Added guidance for PRAs of operating plants that credit planned modifications <ul style="list-style-type: none">– Considered as a special circumstance– Staff will address on case-by-case basis– Peer review and submittal documentation should clearly identify and describe such modifications and design changes

Changes to DG-1362 Based on Public Comments

Synopsis of Comment	Synopsis of Change to DG-1362
Correcting the definition of “PRA acceptability”	Added context to the definition of “PRA acceptability” <ul style="list-style-type: none">– Determined for each risk-informed application– Considers staff positions in RG 1.200, in application-specific regulatory guidance, and any related requirements

Changes to DG-1362 Based on Public Comments

Synopsis of Comment	Synopsis of Change to DG-1362
Clarification of peer review of PRA upgrade(s)	<p>Added guidance for peer review of PRA upgrade(s)</p> <ul style="list-style-type: none">– Performed prior to using the upgraded PRA model in support of a PRA application– Either for an approved risk-informed program or in the submittal of a risk-informed PRA application for NRC review– Use of a newly developed method (NDM) in a PRA is considered a PRA upgrade

Changes to DG-1362 Based on Public Comments

Synopsis of Comment	Synopsis of Change to DG-1362
Clarifying when differences between the 2005 and 2009 version of the Level 1/LERF PRA standard should be identified in support of a license amendment request	Clarified that differences between the 2005 and 2009 version of the Level 1/LERF PRA Standard need to be addressed only if 2005 version used to demonstrate base PRA acceptability

Changes to DG-1362 Based on Public Comments

Synopsis of Comment	Synopsis of Change to DG-1362
Ensuring consistency of Appendix D to RG 1.200, Revision 3, “Other Hazards,” with Part 6 of the 2009 version of Level 1/LERF PRA Standard (ASME/ANS RA-Sa-2009)	Revised Appendix D, “Other Hazards” to be consistent with Part 6 of the 2009 version of Level 1/LERF PRA Standard (ASME/ANS RA-Sa-2009)

Changes to DG-1362 Based on Public Comments

Synopsis of Comment	Synopsis of Change to DG-1362
Removal of a clarification to NEI 17-07, Revision 2, on the documentation of the resolution of peer review findings	Public comment identified guidance in NEI 17-07, Revision 2, that addressed a clarification in the public release version of DG-1362
Submission of PWROG-19027-NP, Revision 2	Removal of clarification regarding PRA upgrade determination process because PWROG-19027-NP, Revision 2, addressed the clarification

Changes to DG-1362 Based on Public Comments

Synopsis of Comment	Synopsis of Change to DG-1362
Closure of peer review findings (answers to FRN questions)	<p>Agreed that the F&O closure decisions should be based on cost and benefit for licensee</p> <p>F&O closure helps ensure PRA acceptability and reduces resources for licensee as well as staff</p> <p>Added guidance for disposition of peer review findings from any peer reviews</p> <ul style="list-style-type: none">– Findings should be evaluated for their impact on risk-informed application– Addressed with documented justification and necessary changes to the PRA– Prior to use of PRA in risk-informed application

Public Comments Resulting in No Changes to DG-1362

Synopsis of Comment	Synopsis of Change to DG-1362
Availability of RG 1.200, Revision 2 for use after issuance of Revision 3	<ul style="list-style-type: none">– Comment was addressed via publicly available NRC staff response; It explicitly states that Revision 2 is not being withdrawn and, therefore, there is no need to modify DG.– This practice is consistent with other RG revisions– Staff, however, anticipates one revision of RG 1.200 to be followed for a given PRA application– Deviations from the referenced revision of RG 1.200 used in an application submitted to the NRC, including alternatives from other revisions of RG 1.200, should be identified and justified

Public Comments Resulting in No Changes to DG-1362

Synopsis of Comment	Synopsis of Change to DG-1362
Change use of the term “application” to narrower term "licensing application" throughout DG-1362	<ul style="list-style-type: none">– The term “application” is used in RG 1.200 consistent with the definition of the term “PRA application” from ASME/ANS RA-Sa-2009, as endorsed by the NRC– Application-specific staff positions on PRA acceptability exists in corresponding guidance (e.g., Integrated Leak Rate Test)

Path Forward

- Staff considers ACRS Full Committee feedback
- Final reviews and concurrence
- Final publication late-2020/early-2021

Path Forward (cont')

- Revision 4 of RG 1.200 expected to include endorsement of the following LWR PRA standards:
 - Next edition of the ASME/ANS Level 1/LERF PRA standard; and
 - ASME/ANS Level 2 PRA standard
 - Advanced LWR PRA standard
- Advanced non-LWR PRA standard to be endorsed in a new RG

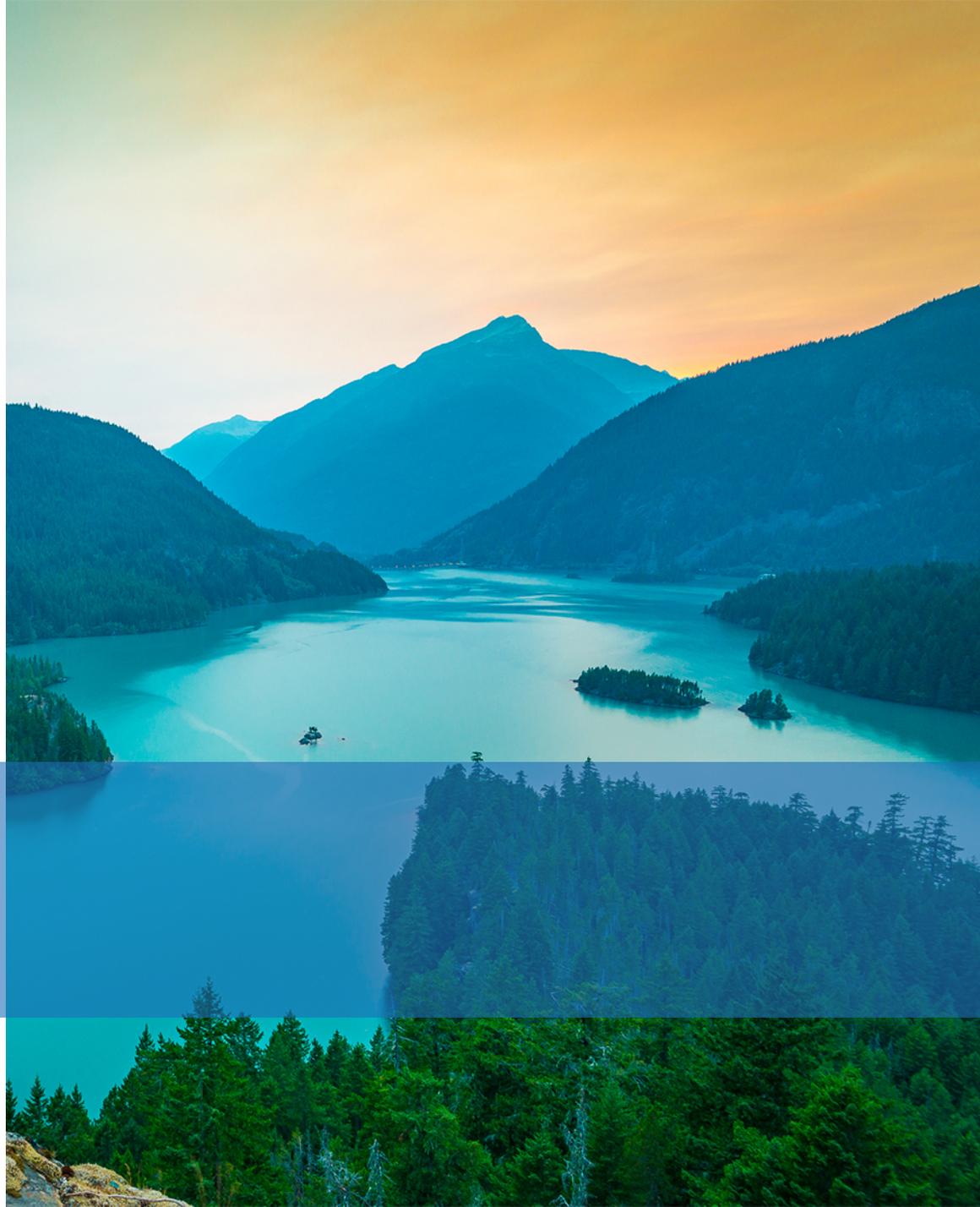
Path Forward (cont')

- Considerations for update of guidance on the treatment of uncertainty in PRA:
 - Update to reflect references to the next edition of the ASME/ANS Level 1/LERF LWR PRA standard
 - Consideration of application-specific guidance
 - Expansion of guidance on uncertainty in risk-informed decisionmaking
 - Uncertainty issues related to PRA for advanced reactor designs

NEI Perspective on RG 1.200, Rev. 3

Victoria Anderson, Technical
Advisor

November 5, 2020



Role of RG 1.200, Rev. 3

- Peer review process has been a vital component of implementation of ASME/ANS PRA standard
 - RG 1.200 is integral to supporting peer reviews
- NEI undertook effort to improve process and documentation after over a decade of experience
 - NEI 17-07: Performance of Peer Reviews Using the ASME/ANS PRA Standard
- Rev. 3 includes important updates to support regulatory stability
 - Finding closure
 - Newley developed methods

Federal Register Notice Question to Stakeholders

- RG 1.200, Rev. 3 notice for comment included additional question to stakeholders
 - Should licensees be required to periodically close all of their PRA peer review findings to ensure confidence in the information used in risk-informed programs?*
- NEI does not support such an addition to RG 1.200
 - Configuration control criteria in NEI 17-07 are sufficient to ensure fidelity of information used in risk-informed applications.
 - ◆ Included as part of the PRA peer review
 - ◆ NRC has access to this documentation in LAR reviews
 - No known regulatory concerns that would be addressed by such a requirement
- Support NRC staff decision to not include such language in RG 1.200, Rev. 3



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Newly Developed Method Requirements

November 2020 ACRS meeting



RG 1.200 Rev 3

- Clarifies long standing issues related to advancing new methods
- Provides cost effective process for regulatory acceptance of new PRA methods
- Retains closure of Peer Review findings as a Licensee decision
 - **Open findings don't impact risk informed decisions as they need to be considered/dispositioned**



PWROG-19027

- Develop process/requirements that allows the technical adequacy of a newly developed method to be accepted through the PRA Peer Review Process.
- Definitions, requirements and peer review process developed during multiple dedicated workshops (PWROG, BWROG, NEI, JCNRM, NRC)
- Three peer review pilots informed the final draft wording (requirements, report content, etc.)



PWROG-19027 Revision 2

- Content from PWROG Revision 0 submitted to JCNRM for inclusion in the upcoming 2021 Edition of the PRA Standard (to be added in Part 1)
 - **Expected publications in mid 2021**
- Few comments received for further harmonization of the NM requirements in the overall structure of the PRA Standard
- Effort to maintain Newly Developed Methods requirements consistent with the evolution of the PRA Standard, this will minimize the effort in R.G. 1.200 Revision 4
 - **PWROG-19027 Revision 2 incorporates final refinements in NM SRs from interaction with JCNRM**



PWROG-19027 Revision 2

- The relationship between NDM and existing methods is clarified, based on early feedback from the NRC that the use of an existing method in a different context was essentially redundant with the finalized definitions.
- The wording of the NM HLR and SRs have been enhanced (e.g., use of consistent action verbs, consistent and enhanced wording) following feedback from the ANS/ASME JCNRM during the review ballot for the upcoming Part 1 of the Standard. There is no change in the intent and scope.
- The structure of the NDM peer review report portion to be submitted for information to the NRC was updated to reflect the inclusion of SR assessment and F&O (or F&O closure rationale) wording. This is based on the continuous feedback received from the NRC on the pilot NDM reviews performed in 2019/2020 and observed by the NRC staff.