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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

(ACRS)

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DIGITAL INSTRUMENTATION AND CONTROL SUBCOMMITTEE

+ + + + +

WEDNESDAY

MAY 20, 2020

+ + + + +

The Subcommittee met via teleconference,
at 9:30 a.m. Eastern Time, Charles H. Brown, Jr.,
Chairman, presiding.

COMMITTEE MEMBERS:

CHARLES H. BROWN, JR., Chairman

RONALD G. BALLINGER, Member

DENNIS BLEY, Member

VESNA B. DIMITRIJEVIC, Member

WALTER L. KIRCHNER, Member

JOSE MARCH-LEUBA, Member

DAVID A. PETTI, Member

JOY L. REMPE, Member

PETER RICCARDELLA, Member

MATTHEW SUNSERI, Member

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ACRS CONSULTANT:

MYRON HECHT

DESIGNATED FEDERAL OFFICIAL:

CHRISTINA ANTONESCU

ALSO PRESENT:

NEIL ARCHAMBO, Duke Energy

KATI AUSTGEN, NEI

ERIC BENNER, NRR

STEPHEN GEIER, NEI

PETER LeBLOND, LeBlond & Associates

PHILIP MCKENNA, NRR

STEPHEN VAUGHN, NEI

MICHAEL WATERS, NRR

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

9:30 a.m.

CHAIR BROWN: The meeting will now come to order. This is a meeting of the Digital Instrumentation and Control Subcommittee. I am Charles Brown, Chairman of the Subcommittee.

ACRS Members in attendance are Dennis Bley, Matt Sunseri, Jose March-Leuba, Vesna Dimitrijevic, Walt Kirchner, Joe Rempe, Ron Ballinger, Pete Riccardella, Dave Petti. And our consultant, Myron Hecht, is on with us. That means we have a full house.

Christina Antonescu of the ACRS staff is the Designated Federal Official for this meeting. She's already confirmed that the court reporter is connected.

So, the purpose of this meeting is for the staff to brief the Subcommittee on Final NEI 96-07, Appendix D, Supplemental Guidance for Application of 10 CFR 50.59 to Digital Modifications and Draft Final Regulatory Guide 1.187, Revision 2.

In particular, the staff is to identify the changes made throughout Section 4.3.6, and any other section, and the basis for why those changes resulted in their agreement that the exception that

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1 they had earlier was no longer required. Today we
2 have members of the NRC staff and NEI to brief the
3 Subcommittee.

4 The ACRS was established by statute and is
5 governed by the Federal Advisory Committee Act, FACA.
6 That means the committee can only speak through its
7 published letter reports. We hold meetings to gather
8 information to support our deliberations. Interested
9 parties who wish to provide comments can contact our
10 office requesting time. That said, we set aside ten
11 minutes for comments from members of the public
12 attending or listening to our meetings. Written
13 comments are also welcome.

14 The meeting agenda for today's meeting was
15 published on the NRC's public meeting notice website,
16 as well as the ACRS meeting website. On the agenda
17 for this meeting and on the ACRS meeting website are
18 instructions as to how the public may participate. No
19 request for making a statement to the Subcommittee has
20 been received from the public.

21 Due to the COVID-19, we are conducting
22 today's meeting virtually. A transcript of the
23 meeting is being kept and will be made available on
24 our website. Therefore, we request that participants
25 in this meeting should first identify themselves and

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1 speak with sufficient clarity and volume so that they
2 can be readily heard. All presenters please pause
3 from time to time to allow members to ask questions.
4 Please also indicate the slide number you are on when
5 moving to the next slide.

6 We have the bridgeline established to the
7 public to listen to our meeting. The public line will
8 be kept in a listen-in only mode until the time for
9 public comment. To avoid audio interference, I
10 request all attendees to make sure they are muted
11 while not speaking. Based on our experience with
12 previous virtual meetings, I would like to remind the
13 speakers and presenters to speak slowly.

14 We will take a short break after each
15 presentation to allow time for screen sharing, as well
16 as at the Chairman's discretion during longer
17 presentations.

18 We do not have -- we do have, excuse me,
19 a backup call-in number should Skype go down and has
20 been provided to the ACRS members. If we need to go
21 to the backup number, the public line will also be
22 connected to the backup line.

23 Lastly, please do not use any virtual
24 meeting feature to conduct sidebar technical
25 discussions. Rather, contact the DFO if you have

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1 technical questions so we can bring those to the
2 floor.

3 Note that we have scheduled the ACRS Full
4 Committee meeting on June 3rd based on the outcome of
5 this meeting.

6 We will now proceed with the meeting. And
7 I will ask Ms. Tekia Govin to share her screen with us
8 while Mr. Eric Benner, the Director of Division of
9 Engineering and External Hazards in the Office of
10 Nuclear Reactor Regulations, for any introductory
11 remarks to make before we begin today's presentations.

12 Eric, it's all yours.

13 MR. BENNER: Thank you, Member Brown. As
14 you indicated, I'm the Director of Division of
15 Engineering and External Hazards. With that comes the
16 responsibility for the technical expertise for
17 instrumentation and controls.

18 The other two presenters today are Mike
19 Waters, who is the Branch Chief for that technical
20 discipline, and Phil McKenna, who is a Branch Chief in
21 a different division with responsibility for 10 CFR
22 50.59. So we're well equipped to answer your
23 questions today.

24 I appreciate the Committee's interest in
25 this topic. I know that were it not for digital

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1 technologies we would not be conducting this meeting
2 today in this environment. So clearly there are
3 benefits of digital technologies.

4 And the Committee's letter of exactly 11
5 months ago today applauded the staff's efforts to
6 provide guidance for how licensees could use 10 CFR
7 50.59 to do digital upgrades. But, at the same time,
8 acknowledge that there was a disconnect between the
9 staff and the industry on potential limitations on
10 what modifications could be done.

11 So the Committee appropriately challenged
12 us to try to work through that issue. I am happy to
13 report that through the interactions we were able to
14 eliminate the condition that was in the Reg Guide. We
15 do have some additional clarifications that are in the
16 Reg Guide, which we will talk through today.

17 And I note that we're not completely done
18 with those clarifications because we're still trying
19 to get those right. We worked hard to clarify what is
20 permissible under the rule. Because another point I
21 want to make is, nothing that goes on in this document
22 really has any bearing as to whether an upgrade is
23 acceptable. There are broader technical requirements
24 as to how a system needs to perform at a nuclear power
25 plant.

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1 Clearly, licensees have to follow their
2 quality assurance programs, do good designs, good
3 engineering and good implementation and good testing.
4 50.59 is strictly a test as to whether such a mod can
5 be done without NRC review or not. So, it is a
6 standard we hold here because, while it is the
7 licensee's responsibility to implement, upgrade in a
8 quality manner, there is a reason why there's certain
9 latitudes that licensees have to make mods while there
10 are certain things that necessitate NRC review.

11 So, we have now changed from past
12 precedent on what is allowed. And part of the
13 revision to the Reg Guide, one of the clarifications
14 is to explicitly acknowledge that we now are allowing
15 certain types of mods to be done under 50.59 that past
16 guidance would have indicated were not allowable.

17 Such change doesn't come without
18 controversy. And I note there have been different
19 views on this matter that we are not being consistent
20 with the rule. But we have worked very closely with
21 NRC's legal counsel to ensure that the guidance that
22 we are planning to put out there does indeed comport
23 with the rule. And one of the clarifications that's
24 in the Reg Guide explicitly acknowledges that change
25 in position.

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1 So, with that, I will turn it over to Phil
2 McKenna to start the more detailed presentation.

3 MEMBER BLEY: Can I ask a quick question?

4 MR. BENNER: Certainly.

5 MEMBER BLEY: This is Dennis Bley. I
6 didn't have it open until you just said that.

7 One of those clarifications, and I think
8 you just gave me the answer as to why you made it, is
9 like the second one you have. I don't have my
10 document open right now, but I think it's the second
11 one. And it seems to me it was much more confusing
12 than the statement you were clarifying, but I suspect
13 that goes to the things you were talking about with
14 the change of position and the lawyers being involved,
15 is that correct?

16 MR. BENNER: Yeah. I'm pulling it up now.
17 And that's why I say we're not done. We're not
18 completely done with these clarifications, because we
19 have had some discussions about, are they as clear as
20 they want to be? And, you know, we want them to be
21 clear. There's an acknowledgment that guidance that's
22 unclear isn't good guidance. So we do want to be
23 clear about that explicit change in position.

24 We do also intend to explicitly let the
25 Commission know of that change in position. But, like

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1 I said, we will go through our more detailed
2 discussion. And we'll get a little more into the
3 clarifications.

4 And I think NEI is going to speak to their
5 perceptions about are the clarifications adequately
6 clear or not also.

7 MEMBER BLEY: Okay. It was the first one,
8 1A, of that Section 4.38 of NEI 96-07. And has a lot
9 of references to 50.59. So that's the one that I
10 found pretty difficult to parse. But go ahead.

11 MR. BENNER: Okay.

12 CHAIR BROWN: Eric, is that the one you
13 were referring to, to 1A?

14 MR. BENNER: No. The interesting is 1A
15 was not changed; that was a part of Revision 1, which
16 looked at method of evaluation. This is Revision 2 of
17 96-07. So that, none of that discussion there that
18 was for Revision 1 to NEI 96-07 -- which I'm sure Phil
19 has the date of when that was issued -- was changed as
20 a result of this dialogue.

21 MEMBER BLEY: Yeah, I asked the same
22 comment the last time we talked. That one just was
23 hard for me.

24 And 1B also, when we get to it, if you can
25 explain what point you're trying to make, because I

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1 didn't find it hard to parse, but I found it more
2 difficult than just the statement that was in the NEI
3 document. So if you can explain those two when we get
4 to them. Well, the second one has changed a bit, but
5 go ahead. Sorry.

6 MR. BENNER: Yeah. Well, I just want to
7 be clear: the only thing that should change were the
8 ones under 2. Anything under 1 was tied to Revision
9 1, which was not the subject of this activity.

10 MEMBER BLEY: Okay.

11 MR. BENNER: Revision 1 was not dealing
12 with digital I&C; it was a broader discussion on
13 method of evaluation.

14 CHAIR BROWN: Yes, Eric, this is Charlie.

15 MR. BENNER: Yes.

16 CHAIR BROWN: I did, when I was doing my
17 review, I did look at the Reg Guide and I compared it
18 to the one we reviewed for the Subcommittee meeting
19 back in April of '19.

20 MR. BENNER: Okay.

21 CHAIR BROWN: 1A and 1C and 1B. 1A you
22 all revised a little bit, a few different words. It's
23 not exactly the same. It's the same as the Full
24 Committee one, but not the April version; it's
25 slightly revised from the April version. That was the

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1 June of '19 version.

2 1B was the same. Fundamentally, both of
3 them.

4 I thought there are two places -- and I
5 didn't highlight them, unfortunately -- you mentioned
6 them -- where you all made explicit statements where
7 you were changing your position, which you just said
8 in your opening remarks.

9 MR. BENNER: Yes.

10 CHAIR BROWN: That's how you're going to
11 do this. Could you make it clear as you go through
12 the slides what part of the Reg Guides were those in
13 so that I can just confirm that I understood?

14 MR. BENNER: Yes. Certainly.

15 CHAIR BROWN: Okay.

16 MR. BENNER: Certainly.

17 CHAIR BROWN: Okay. Because I think I've
18 got them marked but I didn't mark them clear enough.
19 Okay, thank you very much, Eric.

20 MR. BENNER: Okay.

21 MEMBER REMPE: Eric, this is Joy Rempe and
22 I have a question about schedule. I think during your
23 opening remarks you mentioned that you and OGC are
24 still iterating a bit on trying to make sure that the
25 Reg Guide is as clear as possible. Are those

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1 iterations going to be done in the next week or two,
2 or what's your schedule?

3 MR. BENNER: Yes, that's our intention.

4 CHAIR BROWN: Okay, Eric --

5 MEMBER REMPE: So at the Full Committee
6 meeting we'll have the final version?

7 MR. BENNER: That is our intention.

8 CHAIR BROWN: Okay, thank you. Thank you,
9 Joy. I forgot to mention that. Thank you, Eric.

10 MR. MCKENNA: Okay, so this is Phil
11 McKenna. Again, I'm a branch chief in the division of
12 reactor oversight, in the branch that has
13 responsibility for 50.59 for inspection.

14 Tekia, could you go to the next slide,
15 please? That would be Slide Number 2.

16 Okay. Again, Eric touched on this slide
17 somewhat, but, again, the purpose of today's meeting
18 is to brief the ACRS Digital I&C Subcommittee on
19 Recommendations 3 and 4 out of your June 20th letter
20 from 2019.

21 Recommendation 4 was to bring back the
22 final version of 96-07, Appendix D, and Reg Guide
23 1.187, Revision 2. And to discuss how we resolved the
24 exception that was on Section 4.3.6 in Appendix D. So
25 we will do that today.

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1 Next slide please, Tekia. So I'm on Slide
2 3. So this highlights that I'm about to discuss
3 Appendix D, and not in particular the Reg Guide.

4 So, next slide please, Tekia. Number 4.
5 Okay, so I just want to present the timeline of where
6 we've been over the past two years on this effort.
7 This first slide is the starting point in July 2018
8 when got the version of Appendix D from NEI that we
9 provided 85 comments on, originally, through trying to
10 resolve those through the ACRS Full Committee meeting
11 on the 5th of June back in 2019.

12 Next slide, please. I'm on Slide Number
13 5. So this details what occurred from the June Full
14 Committee meeting. We had two public meetings right
15 up-front. The first one in June, a few days after the
16 ACRS brief. And I'll go more in detail what we
17 discussed at that public meeting. The next one in
18 September.

19 We spent the next following six months
20 after that trying to resolve wording in Appendix D.
21 We finally hit a very fast pace in April when NEI
22 submitted the final version of Section 4.3.6 wording,
23 which we all agreed upon. The examples in that
24 section had to be updated. NEI did that. We reviewed
25 those examples in a public meeting in April and we got

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1 the final version of Appendix D on May 13th.

2 Next slide, please, Tekia. So now I'm on
3 Slide 6. And I just want to highlight on this slide
4 we're really talking about the exception in the
5 previous Reg Guide, for the draft Reg Guide, was on
6 Criterion 6. Which I've highlighted on this slide.

7 Criterion 6 in 50.59 is "create the
8 possibility for a malfunction of a structure system
9 and component with a different result than any
10 previously evaluated in the FSAR as updated."

11 Next slide, please, Tekia. So now I'm on
12 Slide 7. And this slide is not really meant to be
13 read, but is just demonstrating what the exception was
14 in the Reg Guide, in the draft Reg Guide, and the
15 length of the exception.

16 So, to summarize the exception in the Reg
17 Guide, the NRC had taken exceptions to Steps 5 and
18 Steps 6 in Section 4.3.6 where NEI was making the
19 determination of the different results only against
20 the safety analysis section of the FSAR and not the
21 entire FSAR. So that language is now changed in the
22 current Appendix D. And I'll go more into that in a
23 future slide.

24 Next slide, please. Okay, I'm now on
25 Slide Number 8. So, the first public meeting we had

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1 in June of 2019 after the Full ACRS Committee. NEI
2 and NRC brought examples to the public meeting and did
3 a tabletop exercise on a total of seven examples, four
4 from NEI and three from the NRC, where we compared if
5 we went through the Reg Guide -- or we went through
6 the Appendix D, 4.3.6, and went through the Reg Guide,
7 if we will come up with different results using those
8 modifications in the examples.

9 And after that meeting we came up with
10 basically the same results, with the exception of one
11 example. But we also clarified quite a bit in that
12 meeting on the wording in Section 4.3.6 where Appendix
13 D would use the word "safety analysis." We always
14 thought that meant accident analysis, but NEI
15 clarified that that meant any safety analysis in the
16 entire FSAR.

17 And we also came to the conclusion that
18 the current wording in the draft Reg Guide could lead
19 the licensee to submit license action requests when
20 they weren't necessary. So we knew that we had to
21 change the wording in the Reg Guide to remove that
22 possibility.

23 In the September meeting we met again to
24 go over some proposed wording to Appendix D. And out
25 of that meeting, NEI submitted, eventually, their

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1 first -- next draft of Appendix D, which changed the
2 initial wording of Steps 5 and Steps 6.

3 Next slide, please, Tekia. Okay, so this
4 is the six-step process. And I used the slide from
5 the ACRS meeting back in June of 2019 and updated the
6 new language in blue. So you can see in Steps 5 and
7 6 the word "safety analysis" was removed and instead
8 the language now conforms with the rule language. So
9 Step 5 now reads, "identify all involved malfunctions
10 of an SSC important to safety previously evaluated in
11 the FSAR." And for Step 6, "for each of those
12 involved malfunctions of an SSC important to safety,
13 compare the results with the previously evaluated
14 results."

15 Next slide, please. I'm now on Step 10.
16 I'm highlighting this step because this is where we
17 get into the one clarification in the Reg Guide where
18 we spent the most amount of time revising or making
19 suggestions to revise the wording, because this is
20 where we were expanding Criterion 6 in the 50.59
21 rules, which Eric had mentioned.

22 So, in this Step 6, there is discussion of
23 acceptance criteria. And this acceptance criteria is
24 basically best defined by going over examples, which
25 we spent quite a bit of time in the Reg Guide

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1 suggesting to refine. And that example deals with
2 feedwater flow. And, previously in the FSAR, only one
3 of the four feedwater flow control valves was assumed
4 to fail open. So now, with a digital mod being placed
5 in, there could be a common-cause failure that would
6 have all four of the feedwater flow valves open.

7 So when you go through the six-step
8 process and get to Step 6, the severity of that event
9 has increased due to all four of the supply feedwater
10 flow valves opening. But, in this case, the
11 acceptance criteria is what is being evaluated. So,
12 the initial acceptance criteria was the departure from
13 nucleate boiling. And that acceptance criteria in the
14 safety analysis had a number of, let's say, 1.3. And
15 the current safety analysis in the FSAR was at 1.42.

16 So, after the severity of this has changed
17 to cause more feedwater flow into the core, you have
18 a new DNBR value of 1.33. So the conclusion out of
19 this is, since you're still within the acceptance
20 criteria of 1.3, that this is not a different result.
21 And I'll stop there.

22 MEMBER RICCARDELLA: Excuse me, this is
23 Pete Riccardella. Would you spend a little time on
24 defining this involved malfunction? That's kind of a
25 new term to me. Could you help with that?

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1 MR. MCKENNA: Yeah, so if I said involved
2 malfunction, I didn't mean to highlight that. So, on
3 the slide I've presented right now, can you just read
4 the words for me?

5 CHAIR BROWN: Eric, it's on Slide 9.

6 MEMBER RICCARDELLA: It's on this slide
7 and also the previous slide.

8 MR. MCKENNA: Okay. Tekia, can you go
9 back to Slide 9, please?

10 MEMBER RICCARDELLA: Identify all involved
11 malfunctions of an SSC. In Step 5 and then in 6. You
12 just use that term "involved malfunction." I'd just
13 like a definition of.

14 MR. MCKENNA: Yes, so I'm going to go to
15 Appendix D right now to make sure that we didn't use
16 --

17 CHAIR BROWN: They're the same words,
18 Eric. I've got it open. Steps 5 and 6 both say
19 involved malfunctions. You quoted them before.

20 MR. MCKENNA: Okay. So, all Appendix D is
21 saying right there is you're identifying all the
22 malfunctions that would be involved with the new
23 modifications.

24 MEMBER RICCARDELLA: Okay.

25 CHAIR BROWN: Before you go on, you can go

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1 back to Step 10, if you want to.

2 MR. MCKENNA: Tekia, can you go to Step
3 10. Or Slide 10. Thank you.

4 CHAIR BROWN: Slide 10, yeah. This is
5 Charlie. This paragraph has two thoughts in it. I
6 want to make sure everybody -- relative to all the
7 stuff you talked about, and so I want to make sure I
8 got this right.

9 The first, until the second set of blue
10 stuff, the first part goes through where you come to
11 a conclusion if this is no longer valid and something
12 else is no longer bounding, then the analysis no
13 longer satisfies the "acceptance criteria, therefore
14 it is a malfunction important to safety with a
15 different result." And that kicks back into your 1A,
16 1B, 2B, and C categories from Step 2.

17 But the next sentence separates that. The
18 first one says, hey, it's a different result. The
19 second one says, if the acceptance criteria are still
20 satisfied and the basic assumptions remain valid,
21 therefore there is no result, and there's no different
22 result of the malfunction important to safety that
23 would cause changes.

24 So, there's two separate thoughts there.
25 One says it's not okay and the other one says it is.

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1 Am I correct with that? That's the way I read that.

2 MR. MCKENNA: That is correct. So, the
3 way Appendix D is worded, if you still meet the
4 acceptance criteria and the basis assumptions are
5 still valid, then it is not treated as a different
6 result.

7 CHAIR BROWN: Okay. Now, and my
8 understanding of how you said how NRC has changed
9 their position, this would then allow the licensee to
10 proceed, if they meet the second blue part?

11 MR. MCKENNA: That's to proceed without
12 coming into the NRC with a license amendment.

13 CHAIR BROWN: Exactly. I wanted that to
14 be very clear to all the members. And the first part
15 would be that then they have to submit an LAR.

16 MR. MCKENNA: That's correct.

17 CHAIR BROWN: Okay. And that comports
18 with your earlier comment about -- this is one the
19 places where you changed your position slightly?

20 MR. MCKENNA: That is correct.

21 CHAIR BROWN: Or one of the accommodations
22 -- I don't want to call it an accommodation -- where
23 you put some commonsense into it. Let me put it that
24 way. That's my phraseology. So I just wanted to make
25 sure that was clear on the record that we knew what we

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1 were talking about relative to the changes. You said
2 you had two changes to the position; this was one of
3 them or was this both of them?

4 MR. MCKENNA: So this is -- basically this
5 is both of them.

6 CHAIR BROWN: Okay.

7 MR. MCKENNA: The other one is in this for
8 the description of a basic assumption, which we worded
9 both of those in the last clarification in the Reg
10 Guide.

11 CHAIR BROWN: Okay.

12 MR. WATERS: Member Brown, this is Mike
13 Waters.

14 CHAIR BROWN: Yes.

15 MR. WATERS: We'll get to that, what's
16 called a change of position. And that really is that
17 use of acceptance criteria in the parenthetical.

18 I want to be very technical also. What
19 you said is correct. If you meet this, they'll pass
20 Criterion 6. I just want to remind, you also have to
21 address the other criteria in 50.59. There may be
22 cases where an example would pass this criteria but
23 not pass other criteria in 50.59. I just want to make
24 that point.

25 CHAIR BROWN: Oh, yeah, you're talking

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1 about the 1, 2, 3, 4, 5, 7 --

2 MR. WATERS: Yes. Yes.

3 CHAIR BROWN: That's understood. We're
4 only dealing with how you work your way through
5 Criterion 6.

6 MR. WATERS: Okay, thank you. I just
7 wanted to make sure everyone understood that
8 listening. Thanks.

9 CHAIR BROWN: Yes.

10 MEMBER REMPE: Charlie?

11 MEMBER MARCH-LEUBA: Charlie, this is
12 Jose.

13 CHAIR BROWN: Yes.

14 MEMBER MARCH-LEUBA: Can I ask a question?

15 CHAIR BROWN: I've got two people talking.
16 Who wants to go first, Jose or Joy?

17 MEMBER MARCH-LEUBA: You decide.

18 CHAIR BROWN: Joy, opened up her mouth --
19 excuse me, I didn't mean to say it that way, Joy.

20 MEMBER REMPE: I opened up my mic first.

21 (Laughter.)

22 CHAIR BROWN: Yes. I heard something
23 click, okay.

24 MEMBER REMPE: Yes.

25 CHAIR BROWN: You go ahead.

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1 MEMBER REMPE: Okay. So, I'm not an
2 expert at 10 CFR 50.59, but is this different than how
3 other changes would be interpreted? Is digital I&C
4 going to get a bigger flexibility or a more flexible
5 approach than if somebody wanted to change out some
6 other SSC?

7 CHAIR BROWN: You want my personal
8 opinion?

9 MEMBER REMPE: I'd like the staff -- I
10 meant to say in your and the staff's opinion.

11 CHAIR BROWN: Why don't the staff go ahead
12 and talk on that first.

13 MR. MCKENNA: Okay, so I'll go first,
14 because that's an excellent question. So, no. Once
15 we have made this position -- and that's one of the
16 reasons why Eric mentioned that we will notify the
17 Commission, is that it's an interpretation for all of
18 50.59, not just for digital.

19 MEMBER REMPE: So you're changing your
20 interpretation for 50.59 across the board because of
21 this interaction. Is that a true statement?

22 MR. MCKENNA: Right. And so, for this
23 portion, Appendix D is only for digital I&C mods. And
24 the changes to the Reg Guide are only for digital I&C
25 mods. But once we make that clarification in the Reg

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1 Guide, it would hold for any thought for any other
2 modifications.

3 CHAIR BROWN: Okay. All right, let me --
4 Joy?

5 MEMBER REMPE: Yes, thank you. That's a
6 good, important clarification that I think needs to be
7 brought up here. So I'm interested in that point.

8 CHAIR BROWN: Okay. Appendix D is I&C
9 only. That means we're not -- how all these criteria
10 apply to I&C, this one criteria out of the eight has
11 been modified slightly. That's for I&C. Digital I&C.
12 That is the change.

13 MEMBER REMPE: I get that, but now they're
14 going to have to go back and notify the Commission
15 that this has broader implications, because digital
16 I&C doesn't get more flexibility than other SSCs,
17 right?

18 CHAIR BROWN: It's not, okay. I mean, if
19 you look -- I don't look at it that way. It's a
20 different beast than pipes and valves and motors.

21 MEMBER REMPE: No, but I think -- maybe
22 I'm misunderstanding what the staff said, but I think
23 the staff said, yeah, we are changing our
24 interpretation of 50.59 and we're going to have to
25 also go back and tell the Commission this has broader

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1 impacts, that we're going to change our
2 interpretation. Did I misunderstand what the staff
3 just told me?

4 MR. WATERS: This is Mike Waters, and
5 maybe I can say it a slightly different way. Staff
6 believes this is an acceptable way to meet Criterion
7 6 of 50.59. It's one means to meet it for the
8 specific failure modes we're talking about for digital
9 I&C. And you've got to remember we're talking about
10 interconnecting systems or components of digital I&C,
11 and if common-cause failure is not sufficiently low
12 you need to look and treat it like other malfunctions
13 in the FSAR or other impacts.

14 And for those particular failure modes,
15 NEI has provided this method to look at it. What it
16 does, it does go beyond what the base guidance is in
17 NEI 96-07, the base guidance of 1.36 where the base
18 guidance really talks about the way to look at it is
19 at the component level, for lack of better words.

20 Staff has determined that this is an
21 acceptable approach. Not only looking at component
22 level in these circumstances; you can look at the
23 acceptance criteria, but there are some clarifications
24 that we make. The acceptance criteria have to be
25 within the FSAR and the base exceptions still have to

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1 be valid.

2 And one thing we found is, even with the
3 examples, they are kind of conceptual. When you look
4 at every FSAR it is different. It's not clear every
5 FSAR can do this.

6 The answer is, yes, it is a partial form
7 of use of Criterion 6 in the base guidance. I don't
8 know if I would use the word different interpretation;
9 I would say it's a different means to meet the
10 regulatory requirements. We have not made a decision
11 to notify the Commission of what needs to do that, but
12 that is a consideration.

13 MEMBER REMPE: Okay. So, I guess I could
14 put what Phil said a little differently because he was
15 a bit more succinct, and I thought he said, yeah, it
16 is a different way to meet this criteria and it could
17 have broader impact beyond digital I&C. Am I
18 misunderstanding again?

19 And, Mike, you have a vibration in your
20 speaking so I'm having trouble understanding partly
21 what you're saying. I apologize.

22 MR. MCKENNA: So, I can summarize it even
23 more succinctly. So, we're endorsing this position in
24 Appendix D, but there's nothing special about digital
25 I&C that would limit the position.

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1 MEMBER BALLINGER: This is Ron Ballinger.
2 Pardon my confusion. Does this mean that something,
3 some additional wording or clarification will
4 eventually need to be put back in another revision of
5 96-07, the general text, and the Reg Guide? Because
6 that would make it very clear to any applicant.

7 MR. MCKENNA: Yeah, so, that's a good
8 question, but it would be up to NEI to revise their
9 base document of 96-07. And if they revise their base
10 document, then, of course, we would revise the Reg
11 Guide.

12 MEMBER BALLINGER: So what you're saying
13 is that if they make such a revision that would be
14 consistent with your new interpretation?

15 MR. MCKENNA: That's correct. We would
16 endorse it the same way.

17 MEMBER BALLINGER: Thank you.

18 MEMBER MARCH-LEUBA: Charlie, can I go
19 now? This is Jose.

20 CHAIR BROWN: Yes, go ahead.

21 MEMBER MARCH-LEUBA: Okay. Yes, I'm going
22 back to Slide 10. The previous discussion was very
23 relevant, too, don't get me wrong, but I'm going back
24 to mine.

25 When I read Slide 10, acceptance criteria,

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1 there are two requirements. One is, you don't
2 invalidate the design basis. If you invalidate the
3 design basis, certainly you have to change it. That's
4 an obvious one.

5 The one I'm having problems with is the
6 second one. Apparently, there is a mysterious safety
7 analysis that the licensee performs and they reach
8 conclusions. And if they say this is a design
9 acceptance criteria, the staff doesn't get to see the
10 mysterious safety analysis and takes their word for
11 it.

12 If they don't satisfy the acceptance
13 criteria, can you give me an example where a licensee
14 wants to make a modification where the acceptance
15 criteria is not satisfied and they send it to NRC
16 hoping that you find the error in their ways and tell
17 them what they do?

18 I do not see the logic. If they do not
19 satisfy the acceptance criteria, the staff will never
20 see the LAR, because that will be insane to send it.
21 And if they do satisfy the acceptance criteria, they
22 don't have to send the LAR. So is NRC saying we don't
23 want to see these types of submittals anymore?

24 MR. MCKENNA: No. So, I guess another way
25 to look at it -- again, you need to step back. So,

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1 they're building the design of the modification, which
2 is a totally separate process. Then they get to the
3 50.59. So, they design the modification safely, and
4 then they get to the 50.59 process, which is the
5 decision point of if they need to come to the NRC for
6 a license amendment or not for the modification. Did
7 that answer your question?

8 MEMBER MARCH-LEUBA: No. What I'm saying
9 is, for them to decide that the modification meets the
10 acceptance criteria is if the modification -- two
11 cases: the modification was very simple and didn't
12 affect anything, or the previous safety analysis was
13 too broad and covered the new modification, they have
14 already performed analysis. But there's a third case
15 in which they do have to perform a new safety
16 analysis.

17 MR. MCKENNA: Mm-hmm. So, yes. But --
18 (Simultaneously speaking.)

19 MR. MCKENNA: Right. So they would come
20 -- so, in that case, when it doesn't satisfy the
21 acceptance criteria in the safety analysis, so that is
22 what they're bringing in for a license amendment, to
23 basically have new acceptance criteria in their FSAR
24 for us to approve it.

25 MEMBER MARCH-LEUBA: Modified acceptance

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1 criteria, that's what they would be asking?

2 (Simultaneous speaking.)

3 MR. MCKENNA: There could be all different
4 kinds of acceptance criteria and not just the one that
5 I presented in the example.

6 CHAIR BROWN: Can I make an observation on
7 the interchange? This is Charlie again.

8 If you look at 50.59 straight up, all
9 50.59, Item 2 in 50.59 says, "a licensee shall obtain"
10 -- shall obtain -- "a license amendment if the change
11 test or experiment would create a possibility of a
12 malfunction of an SSC with a different result."

13 And this language that they put in there,
14 the way I read it, was if they look at their design
15 change and they end up doing this analysis and they
16 come up with a different result, then they have to
17 submit an LAR based on 50.59, the first line in Number
18 2, whatever it is, B2, I think -- or C2, excuse me, in
19 the 50.59 itself.

20 If they do meet the requirements in the
21 acceptance criteria, then they don't. So, yes, NRC
22 would see the LAR if they don't meet these. So if
23 they no longer satisfy it, then they would have to
24 submit their design change to the NRC. If they do
25 satisfy it, then they don't have to and --

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1 MEMBER BLEY: With a full analysis
2 justifying it.

3 CHAIR BROWN: Yes. So all I'm saying is
4 50.59 provides a differentiation in Item C2 where the
5 lead-in for all eight criteria say they will obtain an
6 LAR unless, okay, and then these are the criteria.
7 And all it does it work on one criteria. That's the
8 way I read it.

9 MEMBER BALLINGER: This is Ron again. But
10 isn't there a backstop here in the sense that there's
11 a periodic review by the staff of 50.59-related issues
12 from each applicant -- I forget what the -- is it once
13 a year or --

14 MR. MCKENNA: Once again, this is Phil
15 McKenna. That's correct. But none of these are that
16 backstop. We had the inspection process also. So,
17 for the inspection process at each site, we review
18 certain samples on modifications by the resident
19 inspectors. And then there's a team inspection every
20 three years that reviews 50.59 changes and
21 modifications.

22 MEMBER BALLINGER: Okay. I didn't
23 remember what the periodicity was. But you would
24 catch, eventually, if something were not consistent in
25 the staff's mind they'd pick it up?

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1 MR. MCKENNA: That's correct. In the
2 inspection process, in particular.

3 MEMBER MARCH-LEUBA: That is an audit
4 process. I mean, we audit, the staff audits anything
5 they want to audit.

6 But what I'm seeing when I'm reading this,
7 I don't see the second condition on the Slide 10.
8 Will that ever get triggered if, criteria is not
9 satisfied by the modification the licensee won't
10 submit it. You got to satisfy the criteria.

11 MEMBER BALLINGER: But again, this is Ron
12 again. But it's not just an audit process, the audit
13 process might be with the resident inspector. But the
14 periodic review, that's a complete review, is it not?

15 MEMBER MARCH-LEUBA: No, it's not. You
16 select the sample of things audit, they don't review
17 everything.

18 MR. MCKENNA: So, again, this is Phil
19 McKenna. So the licensee submits a letter every two
20 years of all the lists, listing all their
21 modifications.

22 But they don't get, everyone single one of
23 those does not get inspected.

24 MEMBER MARCH-LEUBA: Yes. And then you
25 pick your three that sound suspicious or interesting

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1 to you and then you look at those in more detail. But
2 90 percent is not.

3 CHAIR BROWN: But, Jose, if the way, I'm
4 trying to understand a little bit. The part about,
5 they no longer satisfy the acceptance criteria then
6 nobody will ever say anything.

7 I don't say that, I don't see that because
8 if they make their modification, or if they design
9 their modification and they find they don't meet the
10 criteria therefore they got to make a decision. Do
11 they submit it as an LAR or do they leave the system
12 as it is. That's the choice at that point.

13 So it's not like it's going to disappear.
14 If it disappears and they never say anything to
15 anybody that means the modification didn't get done.

16 MEMBER MARCH-LEUBA: Correct. Correct.

17 CHAIR BROWN: So that's fine, if they
18 don't want to do the modification that's their choice.

19 (Simultaneously speaking.)

20 MR. MCKENNA: This is Phil McKenna. Or
21 they could redesign so that the acceptance criteria
22 are met then.

23 CHAIR BROWN: Yes, they could do that.

24 MR. MCKENNA: There's a synergy between
25 the design and then whether there needs to be a

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1 review. I think Member Brown captured it correctly.

2 This is not about changing the acceptance
3 criteria as documented in the FSAR, it's clarifying
4 how you make that determination of what acceptance
5 criteria are applicable. Because FSARs aren't
6 written necessarily as cleanly as we would like.
7 Right?

8 If they had flashing red lights around
9 everything that was an acceptance criteria that was
10 used to make the regulatory finding, this would be
11 simple. But they're not.

12 So this whole effort was to try to clarify
13 how a licensee can look through their FSAR and
14 determine, yes, what are the boundaries that have been
15 documented in their licensing basis that they have to
16 determine their skill within to help them make this
17 judgement of whether there is a different result.

18 CHAIR BROWN: And they have --

19 MR. MCKENNA: So if there is a different
20 result they have to come in for a LAR.

21 CHAIR BROWN: Or change the design.

22 MR. MCKENNA: Or change the design. Or
23 not do the mod, right?

24 CHAIR BROWN: Or not do the mod.

25 MR. MCKENNA: There is the do-nothing

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1 option.

2 CHAIR BROWN: Yes. So this does not get
3 lost. It's not like this is, that's a decision
4 process for the licensee.

5 MEMBER MARCH-LEUBA: Right. But my point,
6 Charlie, is if you follow this logically how it's
7 going to be implemented, the staff will not see a
8 single LAR because of this condition. For the other
9 condition maybe.

10 But I don't see why the licensee will not
11 modify the design to make sure to satisfy the
12 criteria.

13 CHAIR BROWN: Well, what's wrong with
14 that?

15 MEMBER MARCH-LEUBA: That's perfectly
16 good. The only problem is there is a hidden safety
17 analysis that is performed at the plant and the staff
18 never gets to see the review. And that safety
19 analysis can be very involved.

20 MEMBER BLEY: But it's just something that
21 doesn't exist. The other thing I think, Jose, is
22 you're assuming nobody is ever going to request a
23 change to their license. And they might.

24 MEMBER MARCH-LEUBA: But not because they
25 don't meet the criteria.

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1 MEMBER BLEY: But --

2 MEMBER MARCH-LEUBA: What's worse, that
3 you change the criteria?

4 MEMBER BLEY: They can't change the
5 criteria --

6 (Simultaneously speaking.)

7 MR. BENNER: This is Eric Benner again.
8 We get 700 --

9 MEMBER BLEY: -- criteria that's in
10 guidance if they have analysis to back up the basis
11 for it. And that does happen.

12 MR. BENNER: Yes, this is Eric --

13 (Simultaneously speaking.)

14 MEMBER MARCH-LEUBA: -- basis.

15 MR. BENNER: This is Eric Benner. We
16 process 700 LARs a year for operating reactors. So
17 there, this is not going to really change that number
18 significantly.

19 MEMBER MARCH-LEUBA: What this is going to
20 achieve, and I fully support this by the way, is that
21 it's going to be actually modifications to, I didn't
22 see any, it's probably more digital I&C than now,
23 simply because after these decisions they'll be able
24 to do it.

25 And I support that completely because that

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1 is a safety improvement for the plant. And so I'm not
2 complaining about it.

3 I was just bringing out, the way it's
4 written it makes no sense to me. How it's going to be
5 implemented. Basically you're saying, don't send us
6 anything.

7 MR. WATERS: So, this is Mike Waters. I
8 do want to add that there are limited examples where
9 they will be able to assume a common-cause failure.
10 And by looking at the FSAR and defining what existing
11 safety analysis is, which this is about, what does it
12 mean to have existing safety analysis and start
13 looking at acceptance criteria and verifying the basic
14 assumptions that are changed that will be permitted to
15 do this now whereas the base guidance probably will
16 lead them not to.

17 But I would say that our examples were
18 just to not pass when basic assumptions change or the
19 acceptance criteria cannot be derived from the FSAR.
20 And if you look at Appendix D they show implementing
21 examples. And there are other examples where it would
22 not pass.

23 For example, there is an example of diesel
24 generator voltage control regulators and RPS. There
25 are examples where even with this guidance it would

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1 not pass Criterion 6 because of the basic assumptions,
2 single failure assumptions and perhaps acceptance
3 criteria.

4 MEMBER MARCH-LEUBA: I like the examples.
5 I mean, I particularly like the example of the
6 feedwater controller where there was an analog
7 controller, you can only fail one of the four valves.

8 With a common-cause failure in the
9 software you can fail all four. And the four you have
10 a much worse feedwater loss failure.

11 But the safety analysis report was
12 performed with a complete loss of feedwater, which it
13 bounds in the condition. And this is perfectly
14 acceptable because you are not changing the safety
15 analysis.

16 Anyway, we've talked about it. I just
17 wanted to put this on the record that there's a chance
18 that there is a hidden safety analysis, an internal
19 safety analysis, that the licensee performs by
20 himself, hopefully under Appendix B, we never get to
21 see it.

22 MR. BENNER: And there are multiple
23 criteria in appendix, in 50.59, the last of which
24 talks about methods of evaluation. So they are able
25 to do some analytical work as long as that analytical

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1 work is using methods that have been already approved
2 for their use.

3 And we go back to that all, any of those
4 things could be subject to inspection.

5 MEMBER MARCH-LEUBA: Okay.

6 MR. BENNER: They do have to do all that
7 under Appendix B. Any mods they, any changes they
8 make under 50.59 do need to be reflected in a revised
9 version of the FSAR. And that's the biennial update
10 that we refer to.

11 We do inspect, it is an audit process but,
12 right, we do look at the ones that are of complexity
13 or interest. So it is a feedback mechanism to ensure
14 that even if licensees are making modifications under
15 50.59, that they're doing it in a manner that comports
16 with the rule and comports with the other
17 methodologies and quality assurance requirements that
18 they have.

19 MEMBER MARCH-LEUBA: And don't get me
20 wrong, I'm a very big fan of 50.59, I think we should
21 be using it more. I think you make a big case, I'm
22 just pointing out what the language is.

23 But let me give you an example. I know,
24 Charlie, we're wasting your time, but this will go to
25 your heart.

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1 Say that I decide to modify my protection
2 system and I take my analog system and make a
3 completely digital protection system. And I hire
4 Charlie to help me go through the system and make it
5 redundant, diverse, unidirectional diodes, all the
6 goodies.

7 And I make an evaluation and I find out
8 that that protection system is perfectly acceptable.
9 It satisfies all the requirements, doesn't change the
10 design basis.

11 Would the protection system modification
12 to digital fall under the category of 50.59?

13 Because by the language you have in here
14 I can do it.

15 MR. WATERS: This is Mike Waters. I think
16 for that example, and the implementing examples that
17 NEI have for Appendix D, that likely would not pass
18 Criterion 6. And the specific example, I believe it's
19 4-23 of 4-44, I forget the number.

20 But the bottom line is, there are
21 diversity requirements for those types of systems.
22 And your single failure assumption is no longer
23 maintained when you have a common-cause failure that
24 challenges that would likely not pass given --

25 MEMBER MARCH-LEUBA: I designed the

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1 protection system because I hired Charlie to do it for
2 me. I'm a licensee.

3 I hired Charlie to do it for me. I
4 designed the best protection system ever. One that if
5 the staff would review it you would say, yes, it's
6 good.

7 But I did the review myself, I made it
8 redundant, I made it diverse, I used two different
9 teams, two different performing language, two
10 different systems to implement it. It's good. I did
11 the analysis, it's good.

12 At what point do we need to review it?
13 Clearly, from this one, the staff shouldn't be
14 involved on that.

15 MR. WATERS: This is Mike Waters. It's
16 sometimes hard to talk conceptually. I have complete
17 confidence in the design-based system and it should be
18 said, what's key here is, on the slide is, is it
19 within the existing safety analysis, if the existing
20 safety analysis is no longer bounding.

21 If it's no longer bounding it would
22 require NRC to review it and it will be safe. But the
23 point of this is, it will not require NRC review.

24 In the example you've given, I think most
25 would say it's no longer bounding for the existing

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1 safety analysis because some of the basic assumptions
2 are no longer valid therefore --

3 MEMBER MARCH-LEUBA: I don't see why --

4 MR. WATERS: -- review it.

5 MEMBER MARCH-LEUBA: I don't see what
6 assumptions are involved by my example. I have a
7 beautiful performing system, it doesn't fail.

8 CHAIR BROWN: Jose? Jose?

9 MEMBER MARCH-LEUBA: Yes, sir.

10 CHAIR BROWN: Your example, 4-22,
11 postulates the entire reactor protection system being
12 redesigned with microprocessors.

13 MEMBER MARCH-LEUBA: Yes.

14 CHAIR BROWN: And by the time they walk
15 through the six-steps, Step 6 comes to the conclusion
16 that it's not sufficiently low and therefore the basic
17 assumptions are not meet and therefore it would
18 require an LAR.

19 MEMBER MARCH-LEUBA: Yes.

20 CHAIR BROWN: So that one of the examples
21 is complete replacement of the reactor protection and
22 safeguard, or the safeguard system applies also.
23 Since they're intertwined.

24 So they already have an example that
25 addresses what you just postulated. And they come to

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1 the conclusion that they could not do this without NRC
2 approval.

3 MEMBER MARCH-LEUBA: And I concur with
4 that evaluation I just don't see how they reach that
5 conclusion.

6 CHAIR BROWN: Well, I --

7 MEMBER MARCH-LEUBA: Anyway, I'll leave it
8 at that.

9 CHAIR BROWN: Okay.

10 MR. WATERS: This is Mike Waters. In very
11 general terms I think that would violate the single
12 failure criterion for those systems if you assume
13 multiple, if you come across with the challenge, for
14 example, would not meet the single failure criterion
15 and would exceed what's the basis of existing safety
16 analysis. That's the reason why it would likely not
17 pass Criterion 6 and have to come in for a LAR review.

18 MEMBER MARCH-LEUBA: We have planned
19 slices with this is a protection system to satisfy
20 the, anyway, yes, I made my point I'll let you guys
21 continue.

22 MR. MCKENNA: Okay, thank you. Again,
23 this is Phil McKenna. Tekia, could you move to Slide
24 11 please?

25 Okay, so now I'll start discussing the

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1 changes to the Reg Guide. In particular, the
2 clarifications that are in Rev. 2 to Reg Guide 1.187.

3 And I do want to clarify one thing up
4 front, because when we opened up the meeting we were
5 discussing Rev. 1 to Reg Guide 1.187. And this
6 revision, Rev. 2, does not affect any of the technical
7 language in Sections C1.

8 There is some slight wording changes from
9 the issued Reg Guide in the first paragraph, but none
10 of the technical wording was changed and was not meant
11 to be changed. So, Section C1 does not deal with the
12 endorsement that we just did for Appendix D.

13 Next slide please, Tekia, Number 12.
14 Okay, so I'm going to step through the clarifications
15 that are now in the Reg Guides.

16 And I will mention which clarifications
17 were in the draft Reg Guide and if they were changed
18 at all. And then I'll hand over the discussion for
19 new clarifications to Mike Waters.

20 Okay, so the first clarification that's on
21 the screen right now on Slide 12 was in the draft Reg
22 Guide and has been reworded slightly based on public
23 comments during the public comment period for the
24 draft guide.

25 And all this Reg Guide, all this

1 clarification is saying is that NEI 01-01, which is
2 the guidelines on licensing digital upgrades, still
3 remains, is still endorsed by the NRC and the licensee
4 does have the choice to use that guidance in NEI
5 01-01. So I'm just trying to point that out.

6 Next slide please. Slide 13. Oh, sorry.

7 CHAIR BROWN: Oh, Eric, I just, go back to
8 12 again.

9 I guess one of the things that was, just
10 wanted to point out, it's the last sentence, that the
11 intent with this is that Appendix D, Rev. 1 is only
12 digital and not generically applicable to any other
13 CFR 50.59 process.

14 MR. MCKENNA: That's correct. And that's
15 also stated in the endorsement, the first endorsement
16 paragraph in the Reg Guide.

17 CHAIR BROWN: Okay. That's what I, I just
18 wanted to emphasize that people saw that and
19 recognized it, that's all. Okay, thank you.

20 MR. MCKENNA: Okay. Next slide please,
21 Tekia, Slide 13.

22 So in this slide, again, this was, this
23 clarification was in the draft Reg Guide. And the
24 reason why we're making this clarification is because
25 NEI 96-07 proffer for the 50.59 screening process had

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1 human-system interface automatically screening in.
2 Meaning you had to do an evaluation for that.

3 That guidance changed in NEI 01-01. And
4 now there is further detailed guidance for screening
5 human-system interface in Appendix D, which we
6 endorse.

7 CHAIR BROWN: All this is saying is that
8 NEI, even though there is some differences between
9 Rev. 1 and 96-01 and the revisions to NEI 01-01, NEI
10 01-01 is okay?

11 MR. MCKENNA: What we're really saying in
12 this is that the guidance in NEI 96-07, Appendix D, is
13 endorsed by the NRC. It defers from the base guidance
14 in 96-07.

15 CHAIR BROWN: Thank you. I didn't say
16 that, that's what I was trying to say and I just
17 didn't say it right. Thank you.

18 MEMBER REMPE: So, Charlie, I want to go
19 back to the point you just raised on the prior slide,
20 okay?

21 Because you're right, that's what it says
22 about, it's generically applicable to the 10 CFR 50-59
23 process. So this is on Slide 12 rather than 13. It's
24 the end of the discussion.

25 But yet earlier you, I believe said, that

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1 there is nothing special about I&C that should limit
2 it. So right now you're saying --

3 CHAIR BROWN: I didn't say that.

4 MEMBER REMPE: No, you didn't, the staff,
5 Philip did, right?

6 MR. MCKENNA: So, what I said is that, so
7 a licensee, if it's doing a digital modification,
8 would use Appendix D. A licensee would not use
9 Appendix D to do any other modifications. It's only
10 applicable to digital modifications.

11 But what we have endorsed in Appendix D is
12 not necessarily just special to digital I&C for the
13 acceptance criteria.

14 CHAIR BROWN: But it has --

15 MEMBER REMPE: Well --

16 CHAIR BROWN: But it has, Joy, hold on.
17 Joy? Joy, hold on.

18 But right now it's only been closed, well,
19 I don't want to say accepted, it's been only accepted
20 for digital modifications.

21 MR. MCKENNA: Correct.

22 CHAIR BROWN: But you're just saying, it
23 doesn't mean it couldn't be used somewhere else if
24 some other evaluations were made?

25 MR. MCKENNA: So, if the guidance would

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1 change.

2 CHAIR BROWN: Yes.

3 MR. MCKENNA: So the licensee, right now,
4 could not use Appendix D to perform a non-digital
5 modification.

6 CHAIR BROWN: Yes. And that's what I'm
7 trying to, Joy was, I'm trying to clarify Joy's
8 comment because you cannot merge this back to anything
9 else unless other accommodations were made. Similar
10 to what you're doing.

11 Somebody could come in and say, hey, we
12 like what you did in Appendix D and we now want to
13 apply it to some other category of changes. Something
14 else would have to be written and approved and issued
15 for that.

16 MEMBER BALLINGER: This is Ron. But
17 you've also said that you're notifying the Commission
18 of your change in interpretation.

19 MR. MCKENNA: So, there is consideration
20 that we would have to notify the Commission about the
21 interpretation for acceptance criteria.

22 MEMBER BALLINGER: So that in turn, that
23 would be a general note on interpretation, so based on
24 that, that sort of starts the process of getting
25 wording put in the general document, does it not?

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1 CHAIR BROWN: No.

2 MR. MCKENNA: It doesn't start so, go
3 ahead. Go ahead, Mr. Brown.

4 CHAIR BROWN: No, I was going to say I
5 think that's an extension. When you say you would
6 have to identify your change, and correct me if I'm
7 wrong on this, your change in interpretation would be
8 the application to digital, not to anything else.

9 MR. MCKENNA: So that is correct. So,
10 again, as we mentioned, if NEI decided to revise the
11 base documents then we would have to go through a
12 different endorsement process for that.

13 CHAIR BROWN: Yes, the 96-07 itself.

14 MR. MCKENNA: That's correct.

15 CHAIR BROWN: Where that applies, and that
16 guidance for all of 50.59 changes not just digital.

17 MR. MCKENNA: That's correct.

18 CHAIR BROWN: So that would be a change,
19 and somebody would have to issue an Appendix E or an
20 Appendix F or something. Or based document changes,
21 whatever it would be.

22 And when you identified it to the
23 Commission, this interpretation, I presume you would
24 not say, you would just say this is for digital only.
25 I presume you would be telling that explicitly, is

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1 that correct?

2 MR. MCKENNA: So in the Reg Guide, again,
3 we endorse Appendix D for digital only. That's
4 correct.

5 CHAIR BROWN: Yes. Okay. It's just, to
6 me it's very clear I just --

7 (Laughter.)

8 MEMBER REMPE: It's very clear, I agree
9 with you, Charlie, but I just am kind of wondering,
10 when you guys were thinking about this, I mean, your
11 interpretation in prior meetings was pretty rigid
12 based on what you've done in the past with other, in
13 your knowledge of how 50.59 has been interpreted.

14 Now you're changing that interpretation to
15 digital I&C. Are there any concerns that you have
16 about a broader opening of this interpretation?

17 MR. MCKENNA: So, that's probably why it
18 took the past nine months to get to the point where we
19 were at. So, any concerns have been discussed amongst
20 the staff.

21 MEMBER BALLINGER: This is Ron again. It
22 makes no sense, based on this not to go after, not for
23 NEI to go after the base document. You have logical
24 inconsistencies here now.

25 CHAIR BROWN: No, that's not right, Ron.

1 MEMBER BALLINGER: Well, I've been wrong
2 before.

3 CHAIR BROWN: I'm sorry, I didn't mean
4 phrase it, I'm not poking you in the eye, okay. I
5 mean, that's the purpose of the regulatory process, is
6 to identify how we utilize the guidance that's out
7 there right now.

8 And all this does is provide, you know, an
9 extension or maybe apply some common sense to an area
10 that wasn't even available when 50.59 was originally
11 written. I mean, there have been huge changes in the
12 technology which have not been incorporated, if you
13 want to call it that, by some of the stuff that was
14 written 25 years ago.

15 MEMBER BALLINGER: I don't doubt the
16 digital IMC thing, but to use the word common sense,
17 I guess I rest my case.

18 CHAIR BROWN: Yes. That's my personal
19 opinion. It's amazing to me how difficult it has been
20 over the last 20 years for the licensees to make
21 upgrades to some of these systems using the newer
22 technology because of the way things have been very
23 tightly interpreted, or evaluated, or viewed.

24 And here is a case of the staff is
25 working, trying to stay within the intent of the rule,

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1 but provide some latitude to allow, you know, people
2 to design stuff and say, hey look, we meet, all the
3 touch points are met.

4 And, you know, from analyses, to the
5 acceptance criteria, to other types of evaluations,
6 and whatever they are, and this is just an attempt to
7 try to do that. So I'm not a cheerleader, but I just
8 think this is a step in the direction.

9 And maybe if this thought process migrates
10 to some other parts, other people will have to take
11 the thought process and generate something, either a
12 Reg Guide, or an appendix to some other Reg Guide, or
13 have generic changes to 96.07 itself come in for
14 approval.

15 But this at least provides some guidance
16 for licensees and gives them some categories. And
17 some of the accommodations they've made, if you go
18 back to Step 2 and how they've broken out changes
19 based on design basis, and license requirements, and
20 everything else, it categorizes things pretty nicely
21 so that the licensee can say, hold it, do I fall into
22 these, are these the right holes or not?

23 I think it's been a good accommodation
24 between NEI and the staff. So I don't want to get
25 tied up in this generic thing getting thrown back.

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1 And then, oh, my God, they're going to take it, and
2 everybody's going to run and design stuff based on
3 what people did for the digital modifications. I
4 think there's too much other stuff that would have to
5 be done to get there. Anyway, that's my soliloquy.

6 MEMBER BLEY: This is Dennis. I'm just
7 curious. Question to the staff or the NEI folks,
8 either one, are people still using 01-01, or are we
9 just preserving something that's historical?

10 MR. MCKENNA: So, Mike, do you want me to
11 answer that or would you like to answer that?

12 MR. WATERS: This is Mike Waters. I can
13 answer it to some extent, but I can't tell you how
14 many and what number of industry people are using
15 01-01.

16 What I can tell you is, as we brief for
17 ACRS, and at the time, and this was years ago we
18 issued Supplement 1 to RIS 2002-22. And that RIS,
19 endorses the 01-01 and provided a pathway to use a
20 qualitative assessment that common-cause failure
21 sufficiently low.

22 We have received industry
23 feedback that they are indeed implementing digital
24 upgrades using that RIS supplement which, again,
25 provides for a qualitative assessment of common-cause

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1 failure which is based on 01-01.

2 So I guess it's a yes, they are still
3 using that for cases where they can have design
4 measures and quality processes where they can justify
5 that common-cause failure is sufficiently low. Once
6 you demonstrate a common-cause failure is sufficiently
7 low, it is a much easier path, Criterion 6 and other
8 criteria.

9 But, you know, it's a good point. Here
10 again, we're talking about digital upgrades where
11 licensees cannot demonstrate a common-cause failure is
12 sufficiently low. You need to look at their results.

13 CHAIR BROWN: I would also point out, this
14 is Charlie again, that 96-07, Appendix D, at least the
15 version we had back then, that has not changed. The
16 basic, that Appendix D it says, and this part did not
17 change, it says a qualitative assessment should not be
18 used for digital IMC replacements for the reactor
19 protection systems, engineered safeguard systems, or
20 modifications of internal logic portions of these
21 systems, voting logic, basket cable inputs, signal
22 condition process.

23 That's still, you cannot use that
24 qualitative assessment. You can use that qualitative
25 assessment for other digital upgrades. Isn't that

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1 correct, Mike?

2 MR. MCKENNA: Yes. This is Phil. That is
3 correct.

4 CHAIR BROWN: Okay, sorry. Okay. When we
5 were talking, Mike brought up the qualitative
6 assessment in RIS 2002-22. I wanted to make clear
7 that the qualitative part still does not apply to
8 reactor protection systems, and safeguard systems, and
9 associated internal parts.

10 MR. WATERS: This is Mike Waters again.
11 Just to clarify, essentially we have agreed, in the
12 RIS supplement, that the qualitative assessment is
13 appropriate for the things the person sends in. It's
14 not that appropriate for the reactor protection
15 systems, for example, those type of things.

16 I will tell you though, you know, industry
17 feedback we received, and it's part of the
18 conversation, is they make the point there may be more
19 ways than one to have a qualitative assessment beyond
20 what industry has endorsed in Supplement 1.

21 And they've expressed concern about having
22 all kinds of advantage to 01-01. But at this point in
23 time, we have established a pathway for what I believe
24 to be the vast majority of digital upgrades to
25 demonstrate that common-cause failure is sufficiently

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1 low.

2 CHAIR BROWN: That's right. Even though
3 they might want to do something else, they'll have to
4 address that separately.

5 MR. WATERS: Exactly.

6 CHAIR BROWN: Okay. Can we go on? Or are
7 there some other questions on this? Okay.

8 MR. MCKENNA: Tekia, can you go to Slide
9 14, please? We covered 13, so Slide 14 is the last
10 clarification that remained from the draft Reg Guide.
11 Again, this was reworded slightly from the draft Reg
12 Guide to the public comment period.

13 And all this clarification is saying is
14 that the RIS 2002-22 Supplement 1, which we just
15 discussed, is the only guidance that NRC has reviewed
16 and endorsed for providing an acceptable basis to
17 determine that the likelihood of software CCF is
18 sufficiently low.

19 CHAIR BROWN: That's really a restatement.
20 You addressed in, just to make sure I understand, in
21 96-07, I've forgotten, but up in the background you
22 talk about the RIS.

23 MR. MCKENNA: That's correct.

24 CHAIR BROWN: It's not mentioned anyplace
25 else. So this effectively, with the Reg Guide says,

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1 hey guys, if you're going to do a qualitative
2 assessment, this is where you do it.

3 MR. MCKENNA: Yes. It is mentioned in
4 Appendix D, in the first couple of pages of Appendix
5 D.

6 CHAIR BROWN: Yes, I think that's the
7 background. I meant Appendix D, I'm sorry. But it's
8 in the background part. It's not up in what I would
9 call the meat-and-potatoes part. And you all, with
10 the Reg Guide, you've made sure that's clear.

11 MR. MCKENNA: That's correct. Okay, so
12 I'm going to move on Slide 15 and handoff the speaking
13 role to Mike Waters.

14 MR. WATERS: Thanks, Phil. So we've
15 covered a lot of this in our earlier conversations
16 with ACRS. And I'll talk about the two clarifications
17 regarding acceptance criteria and bounding
18 assumptions.

19 And I'll try to not cover old ground to
20 that extent, but we thought it was important to
21 provide these clarifications in writing in the Reg
22 Guide just because we had, just as you explained to
23 ACRS, right now what it meant for acceptance criteria,
24 the ramifications in using these assumptions. That's
25 why we put this clarification into the Reg Guide.

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1 Again, the concept applying, based on
2 assumptions of the acceptance criteria in Step 6, was
3 a focal area. And this is what got us past our
4 previous exception to 4.3.6. And now we can accept
5 the written version of Appendix D.

6 So the first clarification here on the
7 slide focuses really on the question today of using
8 acceptance criteria to evaluate malfunction results.
9 This is a clarification, B, or 2B2 on Page 8 of the
10 Reg Guide.

11 The clarification does essentially
12 acknowledge a licensee can consider the use of
13 acceptance criteria now determining whether there's a
14 different result.

15 This is a departure from the base guidance
16 for addressing different results which focuses on
17 component or system level. That's a point that we
18 just talked about.

19 So concerning the latest clarification
20 here that the licensee may also consider this, it was
21 important, because we wanted to make sure that there
22 was continuity between what the base guidance says and
23 what Appendix D says. Because they are meant to
24 complement each other.

25 And I would say, again, determining

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1 whether or not the existing analysis is bounding,
2 likely the acceptance criteria has one meaning along
3 with the basic assumption to make this decision.
4 That's what the clarification says.

5 Slide 16, so the next clarification is a
6 little more detail on the basic assumptions on
7 acceptance criteria. There's a little bit more to
8 unpack here when you look at the actual clarification.

9 This is text that we've been talking
10 about, this actual clarification text. That's down on
11 the bottom of Page 8 of the Reg Guide and I believe
12 Clarification D. The clarification focuses in the Reg
13 Guide on how basic assumptions and acceptance criteria
14 are used in Step 6. And originally, we had raised
15 multiple points.

16 The clarification begins with the fact
17 that we know that Step 6 is what we call a two-pronged
18 test where you determine whether the proposed change
19 would create the possibility of a malfunction with a
20 different result. But either one of these paths, if
21 failure of either prong results in the -- I'm sorry,
22 failure of either prong would result in a need for a
23 license amendment.

24 The first prong, basic assumptions, it
25 really addresses whether they are interchanging the

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1 basic assumptions in the existing safety analysis.
2 For clarification notes, it used to see more failures
3 at basic assumption.

4 But I also note that at basic assumption
5 in an existing analysis would also no longer be valid
6 if the malfunction was only the scenario beyond the
7 scope of a method evaluation which could occur during
8 introduction of a new phenomenon that was not
9 previously modeled or use of a method or correlation
10 is outside range of possibility approved by the NRC.

11 We made that clarification. That's part
12 of the basic assumption consideration. In other
13 words, if analysis of the new common-cause of failure
14 or malfunction caused the licensee to mount a
15 phenomenon at a different range, that was not
16 considered an issue in fuel. It would likely not pass
17 the basic assumption criteria.

18 CHAIR BROWN: You're right, this was a
19 tough one to unpack.

20 MR. WATERS: We call the second prong, the
21 second prong of the test addressed one of the existing
22 safety analyses that's longer bounding after the
23 proposed change. And again, this is focused on the
24 parenthetical where, what Member Brown refers to, the
25 parenthetical talks about acceptance criteria.

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1 The reason I clarify that, if (audio
2 interference) are unmet, then it constitutes
3 satisfaction of acceptance criteria, and it satisfies
4 the acceptance criteria results in the safety analysis
5 but also notes that applicable acceptance criteria
6 must be based on the licensee's FSAR.

7 And many FSARs in the acceptance criteria
8 are not clearly identified or specified. So the
9 licensee may need to refer to supporting documents
10 referenced in the FSAR to rely on these acceptance
11 criteria.

12 In short, the licensee should ensure that
13 they have correctly identified all possible acceptance
14 criteria for the event being analyzed for purposes of
15 Step 6.

16 And finally, if that's clarified for
17 purposes of applying this rule, licensee's cannot use
18 NRC regulations, SRP, or any of the documents outside
19 of their licensee basis as a source for applicable
20 acceptance criteria. That's because in 10 CFR 50.59
21 requires comparison to results that could be found
22 within the FSAR.

23 CHAIR BROWN: That's kind of a critical
24 statement in the second paragraph at that second prong
25 discussion. They can't invent acceptance criteria out

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1 of other regulations or other documents that is not
2 called out in their updated FSAR.

3 MR. WATERS: Right. And so, you know, a
4 critical phrase or existing safety analysis, and that
5 was a struggle, how do we define existing safety
6 analysis and what does that mean? And it has to be
7 based on existing safety analysis to pass this
8 criterion.

9 CHAIR BROWN: Yes. Okay.

10 MR. WATERS: So just to summarize these
11 two clarifications, we felt it very important to put
12 it in here. So we have the Reg Guide and the base
13 guidance will provide a discussion of acceptance
14 criteria, a discussion of basic assumptions. We put
15 it in here for clarity of NRC's approval of Appendix
16 D.

17 So I know that was a lot. I stuck to it
18 kind of fast. Any questions?

19 CHAIR BROWN: Okay, go on.

20 MR. MCKENNA: Okay, next slide, 17, Tekia.
21 So that basically ends our brief on the changes to
22 Appendix D and the changes to Reg Guide 1.187 which
23 will be in Rev 2. That Reg Guide is currently in the
24 concurrence process at NRC. And it will be ready for
25 issuance in June.

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1 Final slide, Tekia. There we go.

2 CHAIR BROWN: Now, you anticipate, you
3 noted that you were still headed in the concurrence
4 process. Hopefully, you will have this concurrence
5 process. And whatever other things you've got going
6 on will be completed by the full committee meeting in
7 June.

8 MR. MCKENNA: Yes, as Eric Benner stated,
9 that is the goal.

10 CHAIR BROWN: You will let us know if you
11 don't meet that goal?

12 MR. MCKENNA: Yes, sir.

13 CHAIR BROWN: And what the hang-ups are?

14 MR. MCKENNA: Yes.

15 CHAIR BROWN: Okay, we can discuss that,
16 what we do with that if you get to that point. Are
17 there any other issues associated with this that we
18 need to know about?

19 MR. MCKENNA: Was that a question for me,
20 Member Brown?

21 CHAIR BROWN: Yes. I'm sorry.

22 MR. MCKENNA: No. So we presented our
23 presentation. Could you restate your question maybe.

24 CHAIR BROWN: I said are there any other
25 issues within your group that you have to deal with,

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1 I mean, people, you're on board, you've got OGC that
2 you're still working with, I guess. And are there
3 other divisions that you have to work with? What are
4 the hangups?

5 MR. WATERS: This is Mike Waters. We are
6 in the final stages of concurrence and with the
7 process. We are not actively changing. We did this,
8 we're in the concurrence process concerning different
9 views. And we'll proceed forward.

10 CHAIR BROWN: Okay.

11 (Simultaneous speaking.)

12 MR. MCKENNA: I will also mention that,
13 you know, we had to make the Reg Guide public for this
14 meeting. So NEI has seen the current version of the
15 Reg Guide. So in their brief, they're going to
16 discuss, you know, some high level items on the Reg
17 Guide.

18 CHAIR BROWN: Okay. Are there any other
19 questions before we shift over to NEI, take a break
20 and shift over to NEI from, maybe walk through all the
21 members' names. Or do you all just want to talk out.
22 I can walk through everybody.

23 MEMBER BLEY: We're not voting.

24 CHAIR BROWN: No, we're not voting on
25 anything. So if we're all solid, we will take our 15

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1 minute break right now. We're right on ---

2 MEMBER PETTI: Sorry, I have a question.

3 CHAIR BROWN: Yes, who's talking?

4 MEMBER PETTI: Dave Petti.

5 CHAIR BROWN: Oh, Dave. Yes, go ahead.

6 MEMBER PETTI: I'm just struggling. It
7 may be a fake question in reality. I have an
8 acceptance criteria, and I have a calculation in MUSA.
9 They go through a digital upgrade. The numerical
10 value changes, but it's still within the acceptance
11 criteria.

12 Doesn't that mean that the safety margin
13 has degraded or eroded in some way? So, you know, if
14 it's two or three percent, I'm not worried about it.
15 But what if they took 95 percent of the distance from
16 where they were in the acceptance criteria with the
17 change?

18 Well, you know, I think about this in the
19 concept of the power uprates. They're trying to eke
20 more out. That gets full review, because it's all
21 about the safety margin. Is that not a fair
22 comparison? I guess I'd like to know what the staff
23 thinks.

24 MR. WATERS: This is Mike Waters. I think
25 the answer is yes, an analytical margin may be

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1 decreased. And that's what Example 418 highlights,
2 the fact that you may be able to recalculate the
3 thermal hydraulic effects for the two water valves
4 opening. Your DNBR may go lower, closer to the
5 acceptance criteria limit in the existing safety
6 analysis and still be fine.

7 So yes, there an analytical margin may
8 decrease, maybe up to a point of acceptance criteria
9 and associated with fuel failure, for example, a DNBR
10 of 1.3, I believe, is a correlation used for some
11 Westinghouse designs. And that could be an exception
12 to criteria that you can go up to.

13 So safety margin is kind of a little
14 tricky. That's the best definition for me, but I
15 agree with the point about analytical margin, yes. If
16 it can pass the basic assumption test, and if it can
17 pass the acceptance criteria test in terms of the
18 relevant acceptance criteria from the existing safety
19 analysis.

20 CHAIR BROWN: Dave?

21 MEMBER PETTI: Yes?

22 CHAIR BROWN: The Example 418 that he's
23 talking about, it was a feedwater flow control valves
24 all go open.

25 MEMBER PETTI: Right.

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1 CHAIR BROWN: Or maybe it's all go closed.
2 I guess it's all failing open. And the acceptance
3 criteria was a DNBR of 1.3. The current safety
4 analysis was 1.42. And the new calculated for the
5 design change is 1.33.

6 So they lost 0.09 of margin down to one
7 point. So now they've got three percent vice 12, or
8 three points vice 12 points. So that illustrates
9 your point, yes. But that one is deemed as if, based
10 on the weights proposed, it does not create the
11 possibility with a different result. Because it's
12 still within the acceptance criteria.

13 MEMBER PETTI: Yes. I guess I just
14 struggle with how is that different than a power
15 upgrade where I'm going to recalculate all these
16 thermal hydraulic parameters.

17 And, you know, you're going to have to
18 show that you're okay filing for acceptance criteria.
19 And you probably are, because we do the upgrade. But
20 everybody gets to see it. It gets reviewed by NRC.
21 That's, I guess, where I was still struggling.

22 CHAIR BROWN: But I guess the point people
23 are making that, if it's within the acceptable
24 boundaries of the FSAR, then it's not like it's
25 hidden. I mean, people will know about it. But it

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1 meets the acceptance criteria, and therefore they are
2 authorized to proceed with the change without an LAR.

3 MEMBER PETTI: Right. And I understand
4 the process.

5 CHAIR BROWN: Okay. The point is the
6 point.

7 MEMBER PETTI: Yes, I understand that.

8 CHAIR BROWN: Okay.

9 MEMBER REMPE: So maybe Jose can help us
10 take your example further, Dave. They do a reload
11 calculation. So we do see safety margin, and now they
12 are getting ready to do a fuel reload calculation.

13 Does everybody know that the margins
14 reduced can pull some of these calculations where they
15 decide that the new core loading's going to be okay?
16 Does it ever, how does it get passed back and forth?
17 Does someone know this? Jose, do you know, or does
18 someone on the staff know how the deduction in safety
19 margin is accommodated?

20 MEMBER MARCH-LEUBA: Typically, there is,
21 what is called a reload safety analysis report that's
22 a convention to set points. And they typically get
23 reflected in the COLA, the COLA based on industry
24 report which does not, it's referenced like text, but
25 it's not up to the licensee. So you can modify COLA

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1 numbers without having to need an LAR.

2 So you asked the question, these numbers
3 need to be reported to the staff on the reload SAR.
4 If you have to change things that belong on the tech
5 specs before this happens, the safety limit, then you
6 need an LAR just to change the safety limit.

7 And the majority of the LARs I have seen
8 myself, yes. Hey, our safety limit used to be 114,
9 we're 115 now. But that's trivial. So yes, the staff
10 gets these numbers on the reload system as a report.

11 MEMBER REMPE: So again, okay, so someone
12 in the plant does an IMC change. They reduce the
13 safety margin. How do they communicate that to the
14 fuel reload folks that are doing the analysis? Does
15 that ever come in, are there interactions?

16 (Simultaneous speaking.)

17 MR. MCKENNA: This is Phil McKenna. So
18 that's picked up in the inspection process. So I just
19 wanted to clarify though. They're within the
20 acceptance criteria that is in their FSAR. So they're
21 not talking about safety margin. The safety margin is
22 from the acceptance criteria to failure. So we've
23 given them the bounds in the FSAR. And they're
24 allowed to use those bounds.

25 MEMBER REMPE: Okay.

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1 MEMBER BLEY: That helps a lot.

2 MEMBER REMPE: Yes, thank you.

3 MEMBER BLEY: That clarifies it, thanks.

4 CHAIR BROWN: Anymore questions? Okay, we
5 will now go ahead. We're a little bit later, but we
6 will now reconvene at 25 after 11:00 for the NEI. And
7 they can take possession of the shared space or what
8 have you. So we are adjourned for the, not adjourned,
9 recessed, excuse me, until 11:25.

10 (Whereupon, the above-entitled matter went
11 off the record at 11:05.m. and resumed at 11:25 a.m.)

12 CHAIR BROWN: All right. I'm going to
13 restart everything. I'm going to presume -- it's
14 11:25. I'm going to presume that everybody's back.
15 Or maybe I'll do a roll call for the members here if
16 I can find my member sheet.

17 Okay, we're back in service again. I'm
18 going to do a roll call for the members. Dennis?

19 MEMBER BLEY: Here.

20 CHAIR BROWN: Matt?

21 MEMBER SUNSERI: Here.

22 CHAIR BROWN: Jose?

23 MEMBER MARCH-LEUBA: Yes.

24 CHAIR BROWN: Vesna?

25 MEMBER DIMITRIJEVIC: Yes.

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1 CHAIR BROWN: Walt?

2 MEMBER KIRCHNER: Yes.

3 CHAIR BROWN: Joy?

4 MEMBER REMPE: Yes, I'm here.

5 CHAIR BROWN: Ron?

6 MEMBER BALLINGER: Yes.

7 CHAIR BROWN: Pete?

8 MEMBER RICCARDELLA: I'm here.

9 CHAIR BROWN: Dave?

10 MEMBER PETTI: Yes.

11 CHAIR BROWN: Okay. I presume Myron is
12 back, our consultant. He can sign back in when he
13 gets here.

14 Okay, we will resume. I'm going to turn
15 this over to Steve Vaughn. I presume ---

16 (Simultaneous speaking.)

17 MR. HECHT: Excuse me, Charlie, this is
18 Myron. I just wanted to let you know.

19 CHAIR BROWN: Okay. Steve, are you going
20 to do the introduction or is that going ---

21 MR. GEIER: This is Steve Geier from NEI.

22 CHAIR BROWN: Oh, where is Steve, I should
23 say. Okay.

24 MR. GEIER: It's the echo.

25 CHAIR BROWN: Okay, who's going to do the

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1 introduction for NEI?

2 MR. GEIER: Steve Geier.

3 CHAIR BROWN: Okay, Steve Geier.

4 MR. GEIER: Yes.

5 CHAIR BROWN: Okay. You can go ahead and
6 start. We've got everybody here.

7 MR. GEIER: Great, thank you. Good
8 morning. What I'd like to do is first just kind of go
9 through and introduce the NEI team that's part of
10 this. So the other Steve, Steve Vaughn, will be our
11 slidemaster. So he can put up the slides.

12 Kati Austgen, senior project manager from
13 NEI will be our lead presenter. We also have, as part
14 of our team, Neil Archambo from Duke Energy and Peter
15 LaBlond as the subject matter expert on 50.59. And,
16 you know, thank you for this opportunity to discuss
17 with the committee Appendix D.

18 Just very briefly, over the last several
19 months, our Appendix D team has worked very diligently
20 to address the staff's concerns. They've come up with
21 some alternatives. And our goal is to overall have a
22 clean endorsement of Appendix D and to eliminate the
23 condition that was in the previous revision.

24 Our goal has always been to have a clear
25 and concise guidance for practical use at the stations

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1 to apply 50.59, just involving digital. And we want
2 to make sure that it complies with the 50.59 rule and
3 is also consistent with the 96-07 base guidance.

4 And the clear and consistent guidance also
5 extends to the Reg Guide. This all creates the body
6 of information that the actual practitioners at the
7 stations will be using to perform 50.59s and to ensure
8 that they comply with the rule.

9 And I'm going to turn it over to Kati to
10 go through our slides just a summary of changes that
11 we made and also talk a little bit about some comments
12 we had on the Reg Guide. So Katie?

13 MS. AUSTGEN: Thank you, Steve. So we're
14 on our second slide now, the Appendix D summary of
15 changes. We won't spend too much time on this. As
16 the staff presented based on feedback at the ACRS
17 meeting, and further discussion of the NRC staff, we
18 did revise Section 4.3.6 of Appendix D.

19 In particular, we included additional
20 guidance on what to do with those SSCs that are solely
21 required to comply with regulations and license
22 conditions, that they're not credited in any safety
23 analysis as defined in 3.12 of NEI 96-07 Rev 1. So
24 again, not just the accident analyses in the FSAR but
25 that broader scope of things that meet the definition

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1 of safety analyses.

2 And then the other big change was, as the
3 staff has discussed, the clarifications that
4 activities could either invalidate basic assumptions,
5 such as single failure criterion, or that do not meet
6 acceptance criteria stated in the safety analyses,
7 would create a different malfunction result.

8 I do want to pause here just to a point
9 that the industry has always seen that this ability to
10 use the satisfaction of acceptance criteria has been
11 available for looking at Criterion 6. But it wasn't
12 explicitly sought out in NEI 96-07 Rev 1.

13 And it wasn't really needed for any
14 activities until you got to digital activity. So now
15 that it is crucial for digital activities to be able
16 to clearly walk through the 50.59 process, and in
17 particular Criterion 6, that's why this guidance is in
18 Appendix D and is intended for use with digital
19 activity.

20 So we'll go ahead and take our third
21 slide. So here again, as was mentioned, we updated
22 the examples accordingly when we updated the six-step
23 process in subsequent systems. We included the
24 example wording so that it's better connected to the
25 guidance, revised the examples to clearly state our

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1 objectives and the application of the guidance.

2 And we've better explained how to compare
3 the results of malfunctions to the associated safety
4 analysis acceptance criteria. Then that was for those
5 examples.

6 We'll take Slide 4. Okay, so our
7 perspective on the Reg Guide updates that were shared
8 for the ACRS meeting, first of all, we see that many
9 of the comments that we provided during the public
10 comment period on the draft revision to the Reg Guide
11 have been addressed. And we very much appreciate
12 that.

13 The new clarifications are certainly an
14 area of focus for us to make sure that they truly are
15 providing the clarity that's desired. We note that as
16 those clarifications were provided most recently,
17 they're maybe not as clear as what the staff intends.
18 So we appreciate the discussion today that has
19 acknowledged that the different criteria under
20 50.59(c)(2) do have their different roles.

21 The focus of Section 4.3.6 is Criterion 6.
22 And the examples in that section were developed to
23 cover the landscape of digital activities that we
24 anticipate licensees might encounter.

25 And none of those bring in Criterion 8 of

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1 50.59. None of those were meant to challenge anything
2 in the other criteria through illustration of that
3 example. The example was really focused on how do you
4 address malfunction in an SSC important to safety with
5 a different result.

6 So we think, you know, if the language in
7 Reg Guide 1.187 can be made to clearly look at just
8 Criterion 6, that will light up much better with the
9 intent of the guidance. And, in fact, even as NEI
10 96-07 Appendix D already states, there's no unique
11 guidance in several of the sections on other
12 evaluation criteria, in particular Criterion 8, so we
13 can stick with what's in 4.3.6 to address Criterion 6.

14 MEMBER BLEY: You left me a little
15 confused. This is Dennis Bley.

16 MS. AUSTGEN: Yes.

17 MEMBER BLEY: Is NEI still objecting to
18 the language in the guide, or are you good with it?

19 MS. AUSTGEN: So we recognize it's not
20 gone through the full NRC concurrence process yet. So
21 we understand that it is still open to some
22 adjustment. And so we'd say it's not perfect the way
23 it is today. But we can see a path to where it is
24 acceptable and it does appropriately clarify.

25 As Steve Geier mentioned, you know, in the

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1 end we've just got to make sure that everything fits
2 together and doesn't leave people wondering where
3 they're at.

4 MEMBER BLEY: I'm trying to pin you down.
5 It sounds as though you still disagree with it, and
6 you figure it's going to get fixed somewhere along the
7 line. The line's pretty short.

8 MS. AUSTGEN: Ha, ha, ha. Yes, I agree,
9 the line is pretty short. So some of the language
10 that had been inserted into the clarifications with
11 Reg Guide 1.187 called out things like method of
12 evaluation. That is a very specific term in 50.59,
13 method of evaluation is something you'd look at in
14 Criterion 8.

15 It is not the subject of Criterion 6. So
16 to the extent that the staff currently has language
17 like that in their clarification on Criterion 6, we
18 don't think that clarifies anything at all. But we
19 believe that the staff understands that and is
20 prepared to adjust that so that it no longer has that
21 appearance of mixing guidance for the different
22 criteria.

23 MEMBER BLEY: Would someone from the staff
24 be willing to step forward and say they either agree
25 with what was just said or they don't?

1 MR. MCKENNA: So between myself, Mike, and
2 Eric, who would like to answer that question?

3 MR. BENNER: This is Eric. I'll do an
4 answer. We are, like, listening to all this feedback
5 and will consider it as we're in the concurrence
6 process. So we acknowledge that, you know, we want
7 this guidance to be clear.

8 So, I mean, I'll just say we just need to
9 digest some of what we're hearing in the discussion
10 today and see whether we can put the additional
11 clarity into the guidance.

12 So there is an acknowledgment that some of
13 the language was inartful. I think I can easily agree
14 that we need to look at some of that language. We
15 talk about that, yes, there are probably better places
16 for different pieces to be evaluated. So it might be
17 better to just have pointers to other criteria for any
18 sensitivities about those guidance results.

19 So we on the staff just haven't completely
20 thought through what we're hearing now. I mean, we
21 saw the slides yesterday as they were provided. So
22 we're still digesting that information and looking to
23 see what changes we would think are appropriate.

24 MEMBER BLEY: Okay, thanks. It seems to
25 me we're really splitting hairs at this point. It

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1 seems like there's been a great deal of progress. But
2 I certainly hope that when you come into full
3 committee you won't still have these objections.

4 MR. BENNER: I agree with you, Member
5 Bley. And we are working hard to do these last
6 refinements. Because I do believe we are truly at
7 this point in just a final clarification stage.

8 MEMBER BLEY: Thanks.

9 CHAIR BROWN: This is Charlie again. That
10 was Phil talking. Or that was Eric, or is that Phil?

11 MR. BENNER: This is Eric.

12 CHAIR BROWN: It was Eric, okay, excuse
13 me. And I'm talking to Kati as well here. I've
14 looked at Criterion 8. And it says methods of
15 evaluation, as you stated. And I was looking at the
16 new 4.3.6 changes and clarifications. I saw the words
17 existing methods of analysis. Is that the type of
18 terminology you're talking about, Kati?

19 MS. AUSTGEN: This is Kati. So I would
20 say that comes close but is not, I'll say, the most
21 offensive or the most egregious of ---

22 (Simultaneous speaking.)

23 MS. AUSTGEN: A paragraph or two later it
24 actually says method of evaluation.

25 CHAIR BROWN: Can you tell me where in the

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1 Reg Guide it says that?

2 MS. AUSTGEN: Yes, one moment.

3 MR. GEIER: It's on Page 9, the third full
4 paragraph.

5 MEMBER BLEY: First sentence?

6 CHAIR BROWN: Yes, I see it now. Okay.
7 Actually, I didn't read it the way NEI did. I thought
8 it was straight forward. I didn't connect to eight.
9 Sorry about that.

10 MS. AUSTGEN: Well, like I said, it is a
11 term of art in 50.59. And so when those who are
12 trained to be 50.59, and who are reading the 50.59
13 guidance, we're going to look at that and say, oh,
14 method of evaluation, that's a defined term. That
15 means something.

16 CHAIR BROWN: Yes, I understand your
17 point.

18 MEMBER KIRCHNER: And Kati, this is Walt
19 Kirchner. In your mind, this means an acceptable
20 method that's been approved by the NRC?

21 MS. AUSTGEN: So let's --

22 MEMBER KIRCHNER: Say, through a topical
23 report or some other means?

24 MS. AUSTGEN: Yes. So at its most basic
25 level, a method of evaluation is a calculational

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1 framework. It is defined specifically in NEI 96-07,
2 Rev 1. Section 3 is where you'll find the definition.
3 And 3.10 is methods of evaluation.

4 MEMBER KIRCHNER: So my question is that
5 implies that it's a method that's been accepted by the
6 NRC for purposes of the safety analysis submittal?

7 MS. AUSTGEN: Yes, for an intended purpose
8 and that the NRC has found it to be acceptable. Yes.

9 MEMBER KIRCHNER: Thank you.

10 MR. GEIER: This is Steve Geier. If I can
11 just articulate our position on this clarification.
12 We understand the staff is trying to clarify the basic
13 assumption and how that is used with the acceptance
14 criteria. So we're fine with that. You know, we
15 understand some of the need there.

16 But we just want to make sure that we
17 compartmentalize Criterion 6 to the terminology and
18 the process that's in six, but we don't bring in any
19 others.

20 I just wanted to, you know, mention that
21 when an engineer at a station is performing a 50.59,
22 they do look at each of the criteria, you know, by
23 themselves. And so it's really important to keep it
24 compartmentalized.

25 We don't overlap, because it's not a

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1 sequential process that you go from two, to three, to
2 four. It's each one of them is looked at
3 independently. And in any mod, whether it's digital
4 or otherwise, there's usually a one, or two, or three
5 that are brought in by that particular mod, naturally
6 to focus your efforts. And likewise with digital,
7 Criterion 6 will likely be, you know, one of those
8 that will be focused on for a more intensive
9 evaluation.

10 So by being very clear, precise in
11 keeping, you know, what's in the Reg Guide aligned
12 with what's in Appendix D is really important to
13 provide that clear and concise value for somebody
14 actually using it as practical guidance.

15 CHAIR BROWN: Okay, thank you, Steve. Are
16 there any other questions, any more amplification, any
17 more clarification?

18 I take it, Eric, and Phil, and Mike, that
19 they've kind of put this on the plate that you're all
20 dealing with in the next few weeks?

21 MR. BENNER: Yes. I mean, we see these
22 slides, and particularly with, you know, the
23 clarification just given, I think there was, I think
24 just as we went through our work, we were just looking
25 at these steps as sequential with some of what we're

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1 hearing as to how this guidance is used.

2 We do want to go back and take a fresh
3 look to, you know, acknowledging that the way it may
4 be used, if not sequentially, to go through the
5 criteria, that is something I think we want to take a
6 fresh look at to make sure, okay, we are not creating
7 linkages that maybe don't need to exist.

8 And that could be as simple as, even if
9 there's a sensitivity we want to point out, we could
10 point to where, you know, which criteria that
11 sensitivity would be addressed under.

12 So like I said, we're just digesting this
13 now and, you know, putting our folks together to
14 figure out, given the sort of change in understanding
15 of how the document is used, does it change how we
16 would verbalize any of our clarification.

17 CHAIR BROWN: So you put this on the table
18 to address at the full committee meeting?

19 MR. BENNER: Yes. Oh, yes. I mean, what
20 we'll, you know, anything we've heard. Because we see
21 this meeting, like, we're in the concurrence process.
22 We're having this meeting. We're hearing things today
23 as a result of this meeting that we're all going to
24 digest and determine whether we think there are
25 appropriate changes to make as part of the concurrence

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1 process.

2 MEMBER BLEY: Charlie?

3 CHAIR BROWN: Yes?

4 MEMBER BLEY: This is Dennis. I'd like to
5 ask Kati a related question. I just went back like
6 you did and looked at Criterion 8 which talks about is
7 there a departure from the method of evaluation. And
8 in the first guidance they're saying you're looking at
9 basic assumptions, or he refers to the assumption
10 delineating the scope of the method of evaluation.

11 It seems like eight's looking for changes
12 in method where the staff's words are pointing to
13 assumptions that come out of those very same methods
14 of evaluations. And I'm confused as to why NEI sees
15 a problem with that. That is where the assumptions
16 are laid out, are they not, Kati?

17 MS. AUSTGEN: This is Kati. Yes, so
18 certainly assumptions are laid out in those methods of
19 evaluation. Or if we want to not specifically be
20 talking about the calculational framework, and
21 implying that that itself should be changed, we would
22 just say the safety analyses, you know, input
23 parameters go into safety analyses. And then there
24 would be actual structure of the calculation.

25 So we think we see what the NRC is trying

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1 to get at with this clarification. We just don't
2 think that the way it's worded right now is quite
3 right.

4 And we also acknowledge that, again, the
5 professional staff who work for licensees, who do
6 safety analyses every day, are well familiar with the
7 processes, and the controls that are in place, how to
8 remain within the confines of a particular safety
9 analysis, so we question how much clarity the
10 clarification is actually adding for those who do this
11 work.

12 MEMBER BLEY: Well, I'll tell you what,
13 this is still Dennis. If all the staff has to go on
14 are your slides, and this little side discussion we've
15 had, I don't know quite how they deal with you. I
16 think you guys ought to send them a note today, or
17 very soon, and lay out what you, the real details of
18 what you're objecting to and what they might change.
19 Because I don't think -- that's the statement in a
20 nutshell ---

21 (Simultaneous speaking.)

22 MS. AUSTGEN: Certainly.

23 MR. GEIER: Yes, this is Steve Geier.
24 Yes, we actually have a mark-up we've been working on.
25 And we will give them, you know, this whole timeframe

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1 was pretty condensed leading up to this meeting. And
2 so, you know, and unfortunately we weren't able to
3 share the details.

4 But we do plan to give them a markup with
5 our specific comments on this and put it on the
6 docket, you know, for public view following this
7 meeting. So, yes, we will do that, give them the
8 specifics rather than a generic, you know, kind of a
9 high-level bullet. Absolutely.

10 CHAIR BROWN: Yes. This is Charlie this
11 time. While Dennis was commenting there, I went off
12 an key worded method of evaluation in the Reg Guide.
13 And other than in a very median part, which doesn't
14 apply to this, it's the last clarification that you're
15 dealing with in 4.3.6, the one that takes about a page
16 to go through.

17 And it generally says scope of
18 evaluations, or beyond the scope, or use of the method
19 outside the range of applicability. So it doesn't say
20 change the method or anything like that. But if
21 you're -- I'm trying to see how that would impact your
22 thought processes. So I do understand the terminology
23 issue. It's the terms of art, as you say, means
24 something, yes. So ---

25 MEMBER BLEY: Go ahead, Charlie.

1 CHAIR BROWN: You made that comment in
2 your first comment, Dennis, about how it read with the
3 scope and didn't really, if I read your bullet, it
4 needs some amplification for the staff to know what
5 you may desire. That's all.

6 And I think it's key for you to, it would
7 be difficult for me to figure that out if I looked at
8 the existing words in there. Because we're not
9 changing the methods, whereas it's not a departure
10 from the methods. If you're outside the scope, okay.
11 Criteria 8 is a departure from the method. It
12 doesn't, being outside the scope is not a departure.
13 Essentially, you just can't --

14 MS. AUSTGEN: This is Kati. If I can
15 interrupt just for a minute.

16 CHAIR BROWN: Oh, go ahead.

17 MS. AUSTGEN: I would say that utilizing
18 the method in a way that it was not intended to be
19 used would be considered a departure.

20 So again, this is why we say if we, you
21 know, think about our 50.59 guidance, you can't get
22 cute and start using methods of evaluation in ways
23 they were not intended to be used. And you certainly
24 can't do that as part of Criterion 6. You're going to
25 get yourself in trouble under Criterion 8.

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1 CHAIR BROWN: You got that. Okay. That's
2 all I had. I'm just amplifying Dennis' comment. I
3 think it needs some interactive discussion. Go ahead,
4 Kati.

5 MS. AUSTGEN: Okay. So then our other
6 bullets here on this slide, we recognize, again as was
7 noted by the staff, the pace really accelerated over
8 the last month and a half for two months. And so, you
9 know, not exactly sure what the staff had in hand when
10 they provided this update to Reg Guide 1.187. But in
11 a few areas it seems to not acknowledge some of the
12 language that finally made it into Appendix D, Section
13 4.3.6.

14 And so, again, we'll provide the staff
15 with some specific feedback on, say, because we added
16 this into Appendix D to reiterate information from
17 96-07 Rev 1, this particular clarification may no
18 longer be necessary.

19 And then finally, the staff mentioned
20 their clarification under 2(c) on the RIS 2002-22
21 supplement.

22 And while we agree that that supplement
23 currently provides the only guidance the NRC has
24 reviewed and endorsed for an acceptable technical
25 basis to determine the likelihood if software CCF is

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1 sufficiently low, the current phraseology is saying
2 that it should be used makes it sound like it must be
3 used, and not only that it must be used, but that
4 would then imply that it must be used for a broader
5 population of activities than what Supplement 1 itself
6 says it is intended for.

7 MEMBER BLEY: Kati, Dennis Bley again.

8 MS. AUSTGEN: Yes.

9 MEMBER BLEY: A question about this,
10 because I had raised a similar issue to myself, but
11 eventually, listening to the staff, I decided not to
12 talk about it when the staff was up. But would it
13 deal with what you're suggesting if it said it should
14 be used in conjunction with Appendix D, Rev 1, for
15 qualitative screening of common cause? Does that take
16 care of your concern?

17 I'm not trying to write it for them, but
18 I thought they kind of covered it when I read the rest
19 of the sentence. But it did sound like you had to use
20 it all the time. You're going to send them a detailed
21 suggestion, so you don't have to respond anyway.

22 MS. AUSTGEN: Okay. I will say that I
23 think there are a couple of different ways they could
24 handle it. And really, the point is, just to be
25 clear, that it doesn't have to be used for every

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1 single activity and that it is one option that can be
2 used, you know, because it's what the staff has
3 reviewed today. But just like any Reg Guide, there
4 may be other acceptable ways to do something.

5 CHAIR BROWN: Any other comments on this
6 slide?

7 There's an echo on this. I hope that's
8 not bothering anybody.

9 MS. AUSTGEN: I do not hear the echo.

10 CHAIR BROWN: Okay.

11 MS. AUSTGEN: Okay. If there are no other
12 questions on this slide, I think we can go to the last
13 slide, Slide 5.

14 So in conclusion, the feedback, both from
15 the ACRS last year and the ongoing interactions with
16 the NRC staff, has improved the guidance. I do
17 believe that a common understanding of the guidance in
18 Appendix D will provide much-needed confidence when
19 implementing digitalized remodifications under 50.59.

20 And again, I'll reemphasize that that
21 common understanding is key, not only in what does
22 Appendix D itself say, but what does the Reg Guide
23 endorsing it say so that we don't accidentally undo
24 any understanding.

25 We do believe that Appendix D, along with

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1 the RIS 2002-22 Supplement 1 provides solid regulatory
2 guidance for licensees implementing digital I&C
3 activities under 50.59.

4 And once all the documents are squared
5 away and we've got our endorsement with Reg Guide
6 1.187 being final, the industry will turn our efforts
7 to training to ensure consistent and effective
8 application of Appendix D to those digital activities.

9 MEMBER BLEY: Kati, one minor
10 clarification again for me. Because as somebody else
11 said the main body of 96-07 is still Rev 1. That's
12 correct, isn't it?

13 MS. AUSTGEN: Yes, that is correct.

14 MEMBER BLEY: Thanks.

15 CHAIR BROWN: Any more comments on the
16 last slide?

17 Okay, thank you, NEI. You don't have to
18 eliminate your thing there. I now have two things to
19 go to. I can't remember whether I do public comments
20 first. I guess I roundtable the members first. So
21 we'll do that first here before I go to public
22 comment.

23 Do I have to go through you name by name,
24 or do people want to speak out? I can go through one
25 at a time, or give me a choice here. I can't remember

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1 what we just ---

2 MEMBER REMPE: Charles, just so we're on
3 the same track, I thought the purpose of this meeting
4 was to not only hear about their progress but also to
5 decide, or to make suggestions or recommendations,
6 each member that's participating, on whether a letter
7 should be provided at the full committee meeting so
8 you understood whether you should work to come up with
9 a draft, right?

10 CHAIR BROWN: Based on your comments in the last
11 meeting, at that last discussion we had, I thought we
12 had kind of, we already scheduled a full committee
13 meeting. And I was going to prepare a straw man, and
14 then we could decide what we wanted to do once we were
15 in full committee meeting and could get everybody on
16 board or, you know, whatever they wanted to do.
17 That's how ---

18 MEMBER REMPE: So you're planning to go
19 ahead and prepare a draft letter without any sort of
20 input from us.

21 CHAIR BROWN: Yes.

22 MEMBER REMPE: Okay. I had not heard
23 that.

24 CHAIR BROWN: Well, I kind of came to that
25 conclusion based on reviewing all the documents over

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1 the last week.

2 MEMBER REMPE: Well, if you're going
3 around the table and asked for input, I would say yes,
4 I think it would be good to have a letter. I think it
5 could be short, since it's on this one issue. It
6 doesn't have to repeat what was in the other letter.
7 But yes, I think it would be good.

8 CHAIR BROWN: It would give us something
9 to focus on as opposed to generic, just throwing stuff
10 out. So I was going to go ahead and prepare a draft
11 letter. It will be simple, I hope, short. By the
12 time the committee finishes with it, I'm not so sure
13 what it will look like. But that's the committee's
14 choice.

15 And I'll present that, and we will have a
16 presentation at the full committee meeting. Since
17 everybody's here, it should be fairly crisp
18 presentation. And then we can decide what we want to
19 do with the letter I provide. Is that acceptable to
20 the committee?

21 MEMBER BLEY: Yes.

22 CHAIR BROWN: Okay.

23 MEMBER MARCH-LEUBA: Charlie, I would like
24 to propose for what you submit, that we follow what
25 we've been doing lately for full committee.

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1 If all the members were in this
2 subcommittee and this was a public meeting to start
3 with, I would make a short presentation by the staff
4 summarizing the major changes. And then we want to
5 put it in writing instead of having another two-hour
6 presentation.

7 CHAIR BROWN: I intend to, I've forgotten
8 how much time. Christina, are you there?

9 MS. ANTONESCU: Yes, I'm here, Charlie,
10 for an hour and a half.

11 CHAIR BROWN: Okay. It's going to be an
12 short presentation.

13 MEMBER MARCH-LEUBA: Right. So the idea
14 is that the public deserves a summary of what the
15 changes are.

16 CHAIR BROWN: Yes.

17 MEMBER MARCH-LEUBA: And short, concise,
18 and to the point. We don't have to see all the slides
19 again. We're all here.

20 CHAIR BROWN: I think they can --

21 MEMBER MARCH-LEUBA: -- for the public.

22 CHAIR BROWN: I think they can compress
23 this a bit. Hopefully, NEI will be, we will have
24 resolved those issues by the time we get there. So if
25 that's a consensus, that would go on there. Does

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1 anybody, any of the members have any other comments
2 before I move on to public comment?

3 Okay, hearing none, Christina, is the
4 public line open?

5 MS. ANTONESCU: Yes, it is.

6 CHAIR BROWN: Okay. If there's anybody on
7 the public line who would like to make a comment,
8 could somebody at least say something that we know the
9 line is open and somebody is there? Is somebody going
10 to say anything? I don't hear anything.

11 PARTICIPANT: Hello.

12 CHAIR BROWN: So you're there. Does
13 anybody on the line have any comments that they would
14 like to provide?

15 Hearing none, we will pass on through
16 public comments. You can close the line now.

17 I don't have any additional comments other
18 than what we've gone through. We will have a full
19 committee meeting. I would encourage the staff to
20 make it, it was a pretty crisp presentation.

21 We probably should, since everybody's
22 here, I don't anticipate a lot of add-ons. But it
23 would really be trying to address the points that came
24 up as well as the NEI staff interaction on their issue
25 to Criteria 8. I think that looked like the primary

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1 --- how you deal with their perspective and the new
2 clarification issues they had. Is that acceptable to
3 the staff?

4 MR. BENNER: Yes, Member Brown. Like I
5 was saying, you know, we take this whole discussion
6 today as an input into our concurrence process. We've
7 definitely heard some things today that we wish to
8 evaluate. And certainly, for the full committee
9 meeting, we will have an articulation of how we ended
10 up on the Reg Guide regarding any of the things we
11 heard here today.

12 CHAIR BROWN: Okay All right, thank you.
13 My closing comments other than that --

14 MS. ANTONESCU: Charlie, I'm sorry, I need
15 to interrupt. Also NEI was going to be part of the
16 briefing at the full committee meeting.

17 CHAIR BROWN: Oh, okay. Sorry, I forgot
18 about that. Not a problem. They were crisp, they had
19 their points well pointed out.

20 I would like to thank the staff for their
21 presentations. They addressed exactly, I think, what
22 we needed to hear and focused on the main issue, same
23 with NEI. I thought you did a good job of presenting
24 your stuff crisply. And we will be able to address
25 those when we go to the full committee meeting.

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1 If there's no, one more time, if there's
2 any other comment that anybody wants to make, I'll
3 wait five seconds.

4 MR. BENNER: Member Brown, this is Eric
5 Benner. I just again wanted to thank you for, you
6 know, your willingness to work with us on schedule.
7 And clearly the committees have clearly read
8 everything we've provided even though it was in a
9 compressed timeframe.

10 So we tried to be crisp, but we really
11 feel like you gave us good feedback. It's
12 interesting, because given the last point that NEI
13 made about how we referenced the RIS, I go back to
14 actually I think you gave the best characterization of
15 where the RIS fits in all of this. So I actually was
16 taking notes when you were saying that for our
17 consideration in our concurrence.

18 So I think we've heard some good things
19 here today. I want to thank the committee. I really
20 want to thank all of the staff, including all the
21 different views that have been raised. Because I
22 think it has resulted in a product that, you know,
23 we're just about ready to provide, which should
24 provide the clarity needed to better allow licensees
25 to make these upgrades under 50.59. So I think it's

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1 a good accomplishment.

2 CHAIR BROWN: Well, thank you, Eric. I
3 would make one observation with NEI's input. When I
4 went back and put 4.3.6 side by side with the one we
5 reviewed back in April of, in the subcommittee meeting
6 in April, as well as in the full committee meeting, I
7 thought that the additions and the adjustments they
8 made, particularly when they got into the Step 2,
9 1(a), 1(b), 2(a), 2(b), and the 3, really helped
10 provide amplification. And then the subsequent
11 discussion became much more clear.

12 So I thought there's been a good
13 accommodation back and forth and some good language
14 proposed. So I think it came out, this is a difficult
15 subject, needless to say, we'd really like to try to
16 provide some more flexibility. And this is a good
17 attempt. So I wanted to thank both the staff and NEI
18 for their cooperation. With that, I will adjourn the
19 meeting and we will see you at the full committee
20 meeting. Thank you.

21 (Whereupon, the above-entitled matter went
22 off the record at 12:08 p.m.)

23

24

25



NEI 96-07 Appendix D and RG 1.187 Revision 2

Eric Benner, NRR/DEX Director
Michael Waters, NRR/DEX/EICB
Philip McKenna, NRR/DIRS/IRGB

Advisory Committee on Reactor Safeguards Digital I&C Subcommittee
Meeting
May 20, 2020

Purpose

- **Brief ACRS Digital I&C Subcommittee on:**
 - The Final Versions of NEI 96-07 Appendix D and RG 1.187 Revision 2 (Recommendation 4)
 - How the exception in the draft RG on section 4.3.6 in NEI 96-07 Appendix D was resolved (Recommendation 3)

* Recommendations are from ACRS letter dated June 20, 2019, “Review of Nuclear Energy Institute (NEI) 96-07, Appendix D, “Supplemental Guidance for Application of 10 CFR 50.59 to Digital Modifications,” dated November 2018, and the NRC’s Associated Draft Revision 2 to Regulatory Guide 1.187, “Guidance for Implementation of 10 CFR 50.59 Changes, Tests and Experiments” (ML19171A323)

NEI 96-07 Appendix D and RG 1.187 Revision 2

**NEI 96-07 Appendix D, Rev. 1
“Supplemental Guidance for
Application of 10 CFR 50.59 to
Digital Modifications”**

NEI 96-07, Appendix D

Timeline Through ACRS Full Committee Meeting:

- In July 2018, NEI provided an update to NEI 96-07, Appendix D
- In August 2018, the NRC staff provided a set of comprehensive comments (85 total) to NEI, and began a disciplined process for cataloging and tracking comments for resolution
- Public meetings were held with industry on 8/30/18, 9/11/18, 10/11/18, and 11/14/18 to resolve these comments. Over 90% of the comments were resolved using this process
- NEI submitted its final revision of NEI 96-07, Appendix D to the NRC on 11/30/18. Letter requesting endorsement submitted 1/08/19
- ACRS Digital I&C Subcommittee meeting on 4/16/19
- Draft RG 1.187 Rev. 2 was issued for public comment on 5/30/19
- ACRS Full committee meeting on 6/5/19

NEI 96-07, Appendix D

Timeline After ACRS Full Committee Meeting:

- 06/25/19: Public meeting to conduct table-top exercises of digital I&C upgrades on applying Appendix D, Section 4.3.6 guidance (45-day RG 1.187 Public Comment period still open)
- 09/18/19: Public meeting on the comments received on RG 1.187, Revision 2. In addition, NRC offered draft wording to resolve the section 4.3.6 exception
- On 10/15/19 NEI provided revised section 4.3.6 wording
- From November 2019 to April 2020: Staff discussion on section 4.3.6 wording.
- On 4/22/20 NEI submitted final version of section 4.3.6 wording
- On 4/27/20 there was a public meeting to discuss NRC comments and suggestions on section 4.3.6 examples
- On 5/13/20 NEI submitted by letter the final version of Appendix D and requesting endorsement

50.59 Evaluation Criteria

- Result in more than a minimal increase in the frequency of occurrence of an accident previously evaluated in the FSAR (50.59(c)(2)(i))
- Result in more than a minimal increase the likelihood of occurrence of malfunction of a structure, system, and component (SSC) important to safety previously evaluated in the FSAR (50.59(c)(2)(ii))
- Result in more than a minimal increase in the consequences of an accident previously evaluated in the FSAR (50.59(c)(2)(iii))
- Result in more than a minimal increase in the consequences of a malfunction of an SSC important to safety accident previously evaluated in the FSAR (50.59(c)(2)(iv))
- Create the possibility of an accident of a different type than any previously evaluated in the FSAR (50.59(c)(2)(v))
- **Create the possibility for a malfunction of an SSC with a different result than any previously evaluated in the FSAR (50.59(c)(2)(vi))**
- Result in a design basis limit for a fission product barrier as described in the FSAR being exceeded or altered (50.59(c)(2)(vii))
- Result in a departure from a method of evaluation described in the FSAR used in evaluating the design basis or in the safety analysis (50.59(c)(2)(viii))

NEI 96-07, Appendix D (Rev. 0) Draft RG Exception

e. **Section 4.3.6 of NEI 96-07, Appendix D**

The NRC staff takes exception to the application of the term “safety analysis” to the criterion in section 10 CFR 50.59(c)(2)(vi) in lieu of the term “FSAR (as updated)” throughout NEI 96-07, Appendix D, Section 4.3.6. This exception includes the Introduction to Section 4.3.6 of NEI 96-07, Appendix D, which does not itself provide guidance on the application of 10 CFR 50.59(c)(2)(vi) to a DI&C modification. Nonetheless, the NRC staff takes exception to the rationale set forth in the Introduction for

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limiting the matters considered under that criterion to safety analyses. In particular, the NRC staff takes exception to steps 5 and 6 in “Determination of Safety Analysis Result Impact,” Section 4.3.6 of NEI 96-07, Appendix D, because the determination of the safety analysis result impact is only made against the safety analysis sections of the FSAR (as updated) and not against the entire FSAR (as updated). The NRC staff’s position is that where the criteria in 10 CFR 50.59 uses the term “previously evaluated in the final safety analysis report,” it means the whole FSAR (as updated). Therefore, when applying the guidance in Appendix D, licenses should not limit their examination of the FSAR (as updated) to particular sections. For example, Section 4.3.6 of Appendix D instructs the licensee to consider malfunctions previously evaluated in the safety analysis in their FSAR (as updated). Licensees should instead consider malfunctions previously evaluated in any section of their FSAR (as updated).

The text in Section 4.3.6 of NEI 96-07, Appendix D, allows the user to answer the question: “Does the Activity Create a Possibility for a Malfunction of an SSC Important to Safety with a Different Result?” However, contrary to NRC staff’s interpretation of the guidance in NEI 96-07 and of 10 CFR 50.59, Section 4.3.6 of NEI 96-07, Appendix D, generally focuses on the impact of a malfunction on the results of the safety analysis rather than the impact on the results of the FSAR (as updated).

The NRC staff’s position is that Section 4.3.6 of NEI 96-07, Appendix D, should determine whether the impact of the “SSC malfunction” has a different result than any previously evaluated in the FSAR (as updated), instead of a different result than previously evaluated in the “safety analysis” (Appendix D expresses the latter concept as “safety analysis results impact.”). Therefore, Step 5 in Section 4.3.6 should be used to identify malfunctions previously evaluated in the FSAR (as updated) and the results of these malfunctions. Step 6 in Section 4.3.6 should be used to compare the projected/postulated results with the previously evaluated results to determine whether the effects are bounded by the results in the FSAR (as updated).

Examples 4-17 through 4-23 of NEI 96-07, Appendix D, use the term “safety analysis” based on the explanation in the introduction of NEI 96-07, Appendix D, Section 4.3.6, rather than using the UFSAR. This can result in an incorrect 10 CFR 50.59 evaluation. For instance, in example 4-19, which discusses an upgrade of area radiation monitors, the NRC staff takes exception to the text: “There are no safety analyses that directly or indirectly credit this design basis function. Namely, there are no considerations of malfunctions of single or multiple radiation monitors, or expected responses of the radiation monitors, in any safety analysis.” The NRC staff’s position on example 4-19 is that the user should identify area radiation monitor malfunctions previously evaluated in the FSAR (as updated) and the results of these malfunctions. The results should be compared with previously evaluated results to determine whether the effects are bounded by the results in the FSAR (as updated), and not solely the results in the safety analysis. Stating that there cannot be a different result when comparing to a preexisting safety analysis because none exists is not adequate to meet 10 CFR 50.59.

NEI 96-07, Appendix D Path to Resolution

Public Meeting Conducted on 6/25/19:

Purpose was to conduct a table-top exercises of digital I&C upgrades in which applying NEI 96-07, Appendix D, Criterion 6 guidance was met.

Public Meeting Conducted on 9/18/19:

Purpose was to discuss the public comments received on the Draft RG

NEI 96-07, Appendix D

Section 4.3.6 (Rev 1)

- Six Step Process in Section 4.3.6 **Revised Wording**
 1. Identify the functions directly or indirectly related to the proposed modification
 2. Identify which of the functions from Step 1 are Design Functions and/or Design Basis Functions
 3. Determine if a new Failure Modes and Analysis (FMEA) needs to be generated
 4. Determine if each design bases function continues to be performed/satisfied
 5. **Identify all ~~safety analyses~~ involved malfunctions of an SSC important to safety previously evaluated in the UFSAR**
 6. **For each ~~safety analyses~~ involved malfunction of an SSC important to safety, compare the projected/postulated results with the previously evaluated results**

NEI 96-07, Appendix D, Section 4.3.6 (Rev 1)

Acceptance Criteria Language in Step 6 Changed:

- For those design functions placed into any other category or combination of categories, if any of the previous evaluations of involved malfunctions of an SSC important to safety have become invalid due to their basic assumptions no longer being valid (e.g., single failure assumption is not maintained), or if any **existing** safety analysis is no longer **bounding** (e.g., the **revised** safety analysis **no longer satisfies the acceptance criteria identified in the associated safety analysis**), then the proposed activity creates the possibility for a malfunction of an SSC important to safety with a different result. **If the acceptance criteria are still satisfied and the basic assumptions remain valid, there is no different result even if the malfunction of an SSC important to safety would otherwise cause changes to input parameters described in the USFAR.**

RG 1.187 Revision 2, “Guidance for Implementation of 10 CFR 50.59, “Changes, Test and Experiments”

Clarifications

RG 1.187 Rev. 2 endorses NEI 96-07 Appendix D with clarifications

Relationship to NEI 01-01: the NRC continues to find NEI 01-01 acceptable for use by NRC licensees. Licensees have the option to use the 10 CFR 50.59 guidance provided in either NEI 01-01 or in NEI 96-07, Appendix D, Revision 1. However, NEI 96-07, Appendix D, Revision 1 does not describe, and this revision to RG 1.187 (Revision 2) does not endorse, applying select portions from both NEI 96-07, Appendix D, Revision 1 and 10 CFR 50.59 guidance of NEI 01-01. In addition, NEI 96-07, Appendix D, Revision 1 is applicable to digital modifications only and is not generically applicable to the 10 CFR 50.59 process. **(Reworded slightly from the draft RG)**

Clarifications

Human-System Interface:

- In NEI 96-07, Revision 1 changes to HSI automatically screened in.
- NRC has endorsed contradicting guidance in NEI 01-01, which states, “not all changes to the human-system interface fundamentally alter the means of performing or controlling design functions,” and therefore NEI 01-01 advises that not all changes to HSI should automatically screen in.
- NEI included similar guidance on screening for HSI in Appendix D.
- The NRC staff acknowledges that Appendix D is thus not a change from existing guidance on digital interfaces, but notes that it is a change from the guidance in NEI 96-07, Revision 1. The NRC staff agrees that changes to HSI may be screened as described in NEI 96-07, Appendix D, Revision 1. (**Reworded from the draft RG**)

Clarifications

Software Failure

- RIS 2002-22 Supplement 1, should be used in conjunction with NEI 96-07, Appendix D, Revision 1 to provide an acceptable technical basis to determine that the likelihood of software CCF is sufficiently low for the purpose of 10 CFR 50.59 evaluations.

(Reworded from the Draft RG)

Clarifications

Use of Acceptance Criteria as Evaluation Results:

- NEI 96-07, Rev. 1, Section 4.3.6, in contrast to Appendix D, does not refer to “acceptance criteria”
- NEI 96-07, Rev. 1, provided that licensees should consider changes to SSCs at the same level at which malfunctions of the affected SSCs were previously evaluated in the FSAR (i.e., component- or system-level).
- The NRC has now determined that, in addition to consideration of component- and system-level effects, licensees may consider whether satisfaction of all applicable acceptance criteria are maintained after a proposed change to demonstrate that no possibility for a malfunction with a different result has been created. (**New Clarification**)

Clarifications

Step 6: Basic Assumptions and Acceptance Criteria

“For those design functions placed into [categories 1.b, 2.b, or 3 in Step 2], if any of the previous evaluations of involved malfunctions of an SSC important to safety have become invalid due to their basic assumptions no longer being valid (e.g., single failure assumption is not maintained), or if any existing safety analysis is no longer bounding (e.g., the revised safety analysis no longer satisfies the acceptance criteria identified in the associated safety analysis), then the proposed activity creates the possibility for a malfunction of an SSC important to safety with a different result. [Emphasis added.] “

(New Clarification)

Next Steps

- RG 1.187 Rev. 2 is currently in the NRC concurrence process
- RG 1.187 Rev. 2 will be ready for issuance in June 2020

Questions ?

Back-Up Slides

NEI 96-07, Appendix D Path to Resolution

Example of Acceptance Criteria: (Example 4-18)

- Previously, only one of four feedwater flow control valves was assumed to fail open as part of the initiation of the Excess Feedwater event. Now, as a result of this change, all four feedwater flow control valves could simultaneously fail open following a software CCF.
- Step 6: The severity of the initiating failure has increased due to four valves supplying flow as compared to one valve prior to the change.
- The minimum acceptable departure from nucleate boiling ratio (DNBR), i.e., the **acceptance criteria identified in the associated** safety analysis, is 1.30. The current safety analysis **documents** a minimum DNBR value equal to 1.42. After using the increased value for the new feedwater flow (to represent the increase in feedwater flow caused by the opening of the four feedwater flow control valves) in a revision to the Excess Feedwater accident analysis, the new safety analysis **documents** a minimum DNBR value equal to 1.33.
- Conclusion: Although the software CCF likelihood was determined to be **not sufficiently low** and the severity of the initiating failure has increased, a comparison of the minimum DNBR values shows that the **safety analysis** remains bounded **by the associated acceptance criteria**. Therefore, the proposed activity does NOT create the possibility for a malfunction of an SSC important to safety with a different result.

NEI 96-07, Appendix D

- RIS 2002-22, Supplement 1 gives guidance on the technical aspect of digital I&C modifications, not the 50.59 process
- Appendix D gives digital I&C modification screening and evaluation guidance
- The format of Appendix D is aligned with NEI 96-07, Rev. 1 text for ease of use
- Some of the guidance in Appendix D is not digital specific
- NEI 96-07, Appendix D does incorporate some RIS 2002-22, Supplement 1 guidance on qualitative assessments

RIS 2002-22, Supplement 1

- NRC issues RIS 2002-22, Supplement 1 in May 2018 to clarify RIS 2002-22
- NRC continues to endorse NEI 01-01
- RIS 2002-22, Supplement 1, clarifies guidance for preparing and documenting “Qualitative Assessments”
- Not for Replacement of:
 - Reactor Protection System (wholesale)
 - Engineered Safety Features Actuation System (wholesale)
 - Modification/Replacement of the Internal Logic Portions of These Systems
- Licensees can currently performed digital modifications using RIS 2002-22, Supplement 1 guidance (without an NRC endorsed NEI 96-07, Appendix D)

NEI 96-07, Appendix D

Screening Section

- Scope of digital modifications:
 - Software-related activities
 - Hardware-related activities
 - Human-System Interface-related activities
- To reach screen conclusion of non-adverse:
 - Physical characteristics of the digital modification
 - Change has limited scope
 - Relatively simple digital architecture
 - Limited functionality
 - Can be comprehensively tested
 - Engineering Evaluation Assessments
 - Quality of the design process
 - Single failures encompassed by existing failures of the analog device
 - Has extensive operating history

NEI 96-07, Appendix D

Screening Section

- Combination of Components/Systems and/or Functions
 - Mere act of combining does not make the screen adverse
 - If it causes an adverse act on the design function, then adverse
 - Reductions in the redundancy, diversity, separation, or independence of a UFSAR design function screen adverse
- Human Factors Engineering Evaluation
 - NEI worked closely with NRC human factors personnel on this section
 - Two steps:
 - Identify generic primary tasks involved
 - For all primary tasks, assess if the mod negatively impacts the primary task

NEI 96-07, Appendix D Evaluation Section

- Guidance in sections 4.3 aligns with main body of NEI 96-07 and there is a caution that Appendix D is intended to supplement guidance in main body of NEI 96-07
- Sections 4.3.1, 4.3.2, 4.3.5, and 4.3.6 (which align with the Criterion in the evaluation paragraph of 10 CFR 50.59) (50.59(c)(2)) discuss the use of the qualitative assessment outcome (sufficiently low or not sufficiently low) to answer the evaluation questions
- Sections 4.3.3 and 4.3.4 state that they provide no new guidance for digital modifications
 - More than a minimal increase in the consequences of an accident
 - More than a minimal increase in the consequences of a malfunction

NEI 96-07, Appendix D

Evaluation Section

- Guidance in section 4.3.6 (Does the Activity Create a Possibility for a Malfunction of an SSC Important to Safety with a Different Result):
 - Discussion on design basis functions
 - Connection between design basis functions and safety analysis result

NEI Perspective: Revisions to NEI 96-07, Appendix D and RG 1.187

ACRS DI&C Subcommittee
Meeting

May 20th, 2020



NEI 96-07, App. D Summary of Changes



- Based on feedback provided at the ACRS meetings in 2019 and from NRC Staff, NEI revised Section 4.3.6 of draft NEI 96-07, Appendix D:
 - Included additional guidance on identification of malfunction results applicable to SSCs solely required to comply with regulations and license conditions (i.e., not credited in any safety analyses)
 - Clarified that activities which either invalidate basic assumptions in the safety analyses (e.g., single failure criterion) or do not meet acceptance criteria stated in the safety analyses create a different malfunction result.

Summary of Changes to Examples

- Based on the changes to Section 4.3.6, NEI made corresponding changes to the examples in the draft NEI 96-07, Appendix D:
 - Improved example wording to map better with associated Appendix D guidance
 - Revised examples to clearly state objectives and application of guidance
 - Clearly explained how to compare results of malfunctions to the associated safety analysis acceptance criteria

Perspective on RG 1.187, Rev. 2 Update

- Many of NEI's comments on the last draft have been addressed
- New clarifications added following the effort to align on Section 4.3.6
 - Appears to unnecessarily insert the purpose of Criterion 8 in the consideration of Criterion 6.
 - May not fully account for revised Section 4.3.6 guidance
 - May imply that RIS 2002-22, Supplement 1 must be used in a broader population of DI&C activities than intended

Closing Remarks...

- The detailed feedback provided by the ACRS and NRC staff has improved the guidance in NEI 96-07, Appendix D
- A common understanding of the guidance in Appendix D will provide much needed confidence when implementing DI&C modifications under 10 CFR 50.59
- Appendix D, along with RIS 2002-22 Supplement 1, provide solid regulatory guidance for licensees implementing DI&C activities under 10 CFR 50.59
- Once endorsed by RG 1.187, NEI will focus efforts on industry training to ensure consistent and effective application of Appendix D

Conversation (56 Participants)

56 Participants

Request Control Actual Size

1:29:34

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NEI 96-07, Appendix D (Rev. 0) Draft RG Exception

Section 4.3.6 of NEI 96-07, Appendix D

The NRC staff takes exception to the application of the term "safety analysis" to the criterion in section 10 CFR 50.59(c)(2)(v) in the term "FSAR (as updated)" throughout NEI 96-07, Appendix D, Section 4.3.6. This exception includes the Introduction to Section 4.3.6 of NEI 96-07, Appendix D, which does not itself provide guidance on the application of 10 CFR 50.59(c)(2)(v) to a DREG modification. Nevertheless, the NRC staff takes exception to the rationale set forth in the Introduction for modification. Nonetheless, the NRC staff takes exception to the rationale set forth in the Introduction for modification. Nevertheless, the NRC staff takes exception to the rationale set forth in the Introduction for modification.

DO-1356, Page 8

Limiting the matters considered under that criterion to safety analysis. In particular, the NRC staff takes exception to steps 2 and 4 in "Determination of Safety Analysis Result Impact," Section 4.3.6 of NEI 96-07, Appendix D, because the determination of the safety analysis result impact is only made against the safety analysis section of the FSAR (as updated) and not against the entire FSAR (as updated). The NRC staff's position is that where the criteria in 10 CFR 50.59 uses the term "previously evaluated in the final safety analysis report," it means the whole FSAR (as updated). Therefore, when applying the guidance in Appendix D, licensees should not limit their examination of the FSAR (as updated) to particular sections. For example, Section 4.3.6 of Appendix D instructs the licensee to consider modifications previously evaluated in the safety analysis in their FSAR (as updated). Licensees should instead consider modifications previously evaluated in any section of their FSAR (as updated).

The text in Section 4.3.6 of NEI 96-07, Appendix D, allows the user to answer the question: "Does the Activity Create a Possibility for a Malfunction of an SSC Important to Safety with a Different Result?" However, contrary to NRC staff's interpretation of the guidance in NEI 96-07 and of 10 CFR 50.59, Section 4.3.6 of NEI 96-07, Appendix D, generally focuses on the impact of a malfunction on the results of the safety analysis rather than the impact on the result of the FSAR (as updated).

The NRC staff's position is that Section 4.3.6 of NEI 96-07, Appendix D, should determine whether the impact of the "SSC malfunction" has a different result than any previously evaluated in the FSAR (as updated), instead of a different result than previously evaluated in the "safety analysis" (Appendix D expresses the latter concept as "safety analysis result impact"). Therefore, Step 5 in Section 4.3.6 should be used to identify modifications previously evaluated in the FSAR (as updated) and the results of these modifications. Step 6 in Section 4.3.6 should be used to compare the projected/pointed results with the previously evaluated results to determine whether the effects are bounded by the results in the FSAR (as updated).

Examples 4.17 through 4.23 of NEI 96-07, Appendix D, use the term "safety analysis" based on the application in the introduction of NEI 96-07, Appendix D, Section 4.3.6, rather than using the term "FSAR." This can result in an incorrect 10 CFR 50.59 evaluation. For instance, in example 4.19, which discusses an upgrade of a new reduction system, the NRC staff takes exception to the text: "There are no safety analyses that directly or indirectly credit this design basis function. Namely, there are no reduction analyses, in any safety analysis." The NRC staff's position on example 4.19 is that the user should identify area reduction analyses previously evaluated in the FSAR (as updated) and the results of these modifications. Step 6 in Section 4.3.6 should be used to compare the projected/pointed results with the previously evaluated results to determine whether the effects are bounded by the results in the FSAR (as updated), and not solely the results in the safety analysis. Stating that there cannot be a different result when comparing to a preceding safety analysis because none exists is not adequate to meet 10 CFR 50.59.

McKenna, Philip

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9:49 AM
05/20/2020

Conversation (56 Participants)

56 Participants

Request Control Actual Size

1:30:16

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NEI 96-07, Appendix D (Rev. 0) Draft RG Exception

Section 4.3.6 of NEI 96-07, Appendix D

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DO-1356, Page 8

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McKenna, Philip

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05/20/2020

Conversation (56 Participants)

56 Participants

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NEI 96-07, Appendix D Path to Resolution

Public Meeting Conducted on 6/25/19:
Purpose was to conduct a table-top exercises of digital I&C upgrades in which applying NEI 96-07, Appendix D, Criterion 6 guidance was met.

Public Meeting Conducted on 9/18/19:
Purpose was to discuss the public comments received on the Draft RG

McKenna, Philip

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Participants List:

- Mike Waters - NRC Guest
- Miller, Chris
- Montgomery, Shandeth
- Moore, Scott
- MORRISON CHARLS Guest
- Morton, Wendell
- MYRON HECHT Guest
- NUCLEAR ENERGY Guest
- Peter LeBlond Guest
- Rempe, Joy
- Riccardell... - Structural Integri...
- RNT G Guest
- Ron Ballinger Guest
- Scully, Derek
- Segarnick, Maxine
- Skov, Tammy
- Sunseri, Matthew
- Taneja, Dinesh
- Venkataraman, Booma
- Vesna Dimi Guest
- Warren Odess-Gillett Guest
- WASHINGTON DC Guest
- Weisman, Robert
- Widmayer, Derek

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