

Official Transcript of Proceedings
NUCLEAR REGULATORY COMMISSION

Title: Public Meeting to Discuss the Scope and Related Costs and Benefits Associated with the Reactor Vessel Material Surveillance Program Requirements Proposed Rulemaking

Docket Number: N/A

Location: Rockville, Maryland

Date: June 1, 2017

Work Order No.: NRC-3109

Pages 1-89

NEAL R. GROSS AND CO., INC.
Court Reporters and Transcribers
1323 Rhode Island Avenue, N.W.
Washington, D.C. 20005
(202) 234-4433

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

+ + + + +

PUBLIC MEETING TO DISCUSS THE SCOPE AND RELATED
COSTS AND BENEFITS ASSOCIATED WITH THE REACTOR
VESSEL MATERIAL SURVEILLANCE PROGRAM REQUIREMENTS

PROPOSED RULEMAKING

+ + + + +

THURSDAY,

JUNE 1, 2017

+ + + + +

ROCKVILLE, MARYLAND

+ + + + +

The Public Meeting was convened in Room
02-B3 at the Nuclear Regulatory Commission, Two White
Flint North, 11555 Rockville Pike, at 8:00 a.m.,
Stewart Schneider, Senior Project Manager,
facilitating.

NRC STAFF PRESENT:

- STEWART SCHNEIDER, NRR, Project Manager
- THERESA BARCZY, OGC
- DAN DOYLE, NRR*
- CAROLYN FAIRBANKS, NRR/DE
- CHRIS HOVANEC, NRR/DE

1 JOEL JENKINS, NRR/DE

2 MARK KIRK, RES

3 SCOTT KREPEL, NRR

4 MATT MITCHELL, NRO, Materials & Chemical Engineering

5 DAVE RUDLAND, NRR, Vessels & Internals Integrity

6 FRED SCHOFFER, NRR

7 DAN WIDREVITZ, NRO

8 ON YEE, NRR/DE

9

10 ALSO PRESENT:

11 JANA BERGMAN, Curtiss-Wright Scientech

12 SCOTT BOGGS, Florida Power & Light*

13 BOB CARTER, EPRI*

14 MATT DeVAN, AREVA

15 CORY FLENSBURG, FirstEnergy*

16 STEVE GEIER, NEI*

17 BRIAN HALL, Westinghouse*

18 TIM HARDIN, EPRI

19 ELLIOT LONG, EPRI*

20 NATHAN PALM, EPRI

21 DAN SOLITZ*

22 CRAIG STEWART, American Nuclear Insurers*

23 CHUCK TOMES, Dominion*

24

25 * via telephone

C O N T E N T S

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

Page

Welcome.. 4

Introductions.. 5

Logistics and Agenda and Meeting Purpose. 6

Appendix H Rulemaking Background. 10

Appendix H Rulemaking Schedule. 12

NRC Staff Overview. 15

Public Questions/Discussion.. 71

P R O C E E D I N G S

8:00 a.m.

1
2
3 MR. SCHNEIDER: Well, good morning. I
4 would like to thank all of you for your interest in
5 today's public meeting.

6 My name is Stewart Schneider. And I'm the
7 Project Manager for the Part 50 Appendix H Reactor
8 Vessel Material Surveillance Program Rulemaking. It
9 should be noted that this rulemaking is also commonly
10 known as the Appendix H rulemaking.

11 I'll also be acting as your facilitator
12 for today's public meeting. My role today is to make
13 this meeting as productive for everyone as possible.

14 At today's meeting the NRC staff will
15 discuss the various options and recommendations that
16 are being considered with regard to the scope of this
17 proposed rulemaking.

18 Further, this meeting will provide an
19 opportunity for the NRC staff to address questions and
20 solicit feedback on the proposed scope as well as the
21 related costs and benefits associated with this
22 rulemaking action.

23 This feedback will support the NRC's
24 development of the draft regulatory basis, as well as
25 the preliminary draft regulatory analysis documents,

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 which are associated with this proposed rule.

2 I'd like to start by having everyone at
3 the table introduce themselves. Please say your name
4 and your affiliation.

5 MR. SCHOFFER: Fred Schoffer, NRR, Reg
6 Analysis Team Lead.

7 MR. WIDREVITZ: Dan Widrevitz, NRO.

8 MR. HOVANEK: Chris Hovanec, NRR DE.

9 MR. KREPEL: Scott Krepel from NRC's NRR.

10 MR. LOOMIS: Jeff Loomis, NRR Cost
11 Analyst.

12 MS. FAIRBANKS: Carolyn Fairbanks, NRR,
13 DE.

14 MR. HARDIN: Tim Hardin, Electric Power
15 Research Institute.

16 MR. PALM: Nathan Palm, Electric Power
17 Research Institute.

18 MR. DeVAN: Matt DeVan, AREVA.

19 MR. YEE: On Yee, NRR DE.

20 MR. KIRK: Mark Kirk, NRC Research.

21 MR. MITCHELL: Matthew Mitchell, NRO's
22 Materials and Chemical Engineering Branch.

23 MR. RUDLAND: Dave Rudland, NRR, Vessels
24 and Internals Integrity Branch.

25 MR. SCHNEIDER: Okay. Now that we've had

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 our introductions, will discuss about the agenda --
2 oh, I'm sorry. You want to come up to the mic here
3 and introduce yourselves.

4 MS. BARCZY: Theresa Barczy, Office of the
5 General Counsel.

6 MS. BERGMAN: Jana Bergman, Curtiss-Wright
7 Scientech.

8 MR. SCHNEIDER: Okay. Thank you. So,
9 before we begin, I'd like to cover the meeting agenda
10 and logistics.

11 The meeting is scheduled to last from 8:00
12 a.m. to noon today. And once I've completed the
13 introductions, logistics, meeting purpose and overview
14 of the rulemaking discussions, I'll turn the meeting
15 over to Mr. David Rudland.

16 He's the Chief of the Vessels and Internal
17 Integrity Branch in the Office of Nuclear Reactor
18 Regulation. Mr. Rudland will then discuss the
19 rulemaking's background, current status and
20 outstanding technical and cost issues.

21 We will then take a half hour break. And
22 then open the meeting to the public to ask questions
23 and provide comments on the proposed rulemaking.

24 Today's meeting is a Category 3 public
25 meeting. Public participation is actively sought at

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 this type of meeting.

2 And the public may comment and ask
3 questions throughout the meeting. Thus, during the
4 technical presentation, the public will be afforded
5 the opportunity to ask questions and provide comments,
6 in addition to the hour set aside after the break.

7 For those attending in person, please sign
8 the attendance list before you leave today. This list
9 is on the table in the back of the room. And the list
10 of attendees and phone and webinar participants will
11 become part of the meeting summary that will be
12 prepared for today's meeting, and will be made public.

13 Before we go further, can the Operator
14 please let us know who is on the line so they can
15 identify themselves, as well as their affiliation?

16 (No response)

17 MR. SCHNEIDER: Is the Operator still on
18 the line?

19 OPERATOR: Yes. I am unable to see any
20 names. However, the line is open if they would like
21 to state their name.

22 MR. SCHNEIDER: Yes. If you could do
23 that.

24 OPERATOR: Okay.

25 MR. HALL: Brian Hall with Westinghouse.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 MR. BOGGS: Scott Boggs, Florida Power and
2 Light.

3 MR. CARTER: Yes. This is Bob Carter,
4 EPRI.

5 MR. LONG: Elliot Long, EPRI.

6 MR. TOMES: Chuck Tomes, Dominion.

7 MR. GEIER: Steve Geier, NEI.

8 MS. BEEP: Lataylor Beep (phonetic), Duke
9 Energy.

10 MR. DOYLE: This is Dan Doyle, NRC.

11 MR. JENKINS: This is Joel Jenkins, NRC.

12 MR. FLENSBURG: Cory Flensburg, First
13 Energy.

14 MR. CAMPBELL: Tyson Campbell, NRC.

15 MR. STEWART: You've got Craig Stewart
16 from American Nuclear Insurers.

17 MR. SOLITZ: Dan Solitz, Eugene, Oregon,
18 private citizen.

19 MR. SCHNEIDER: Okay. Thank you. This
20 list of attendees and the phone and webinars
21 participants will, I just want to let you know, become
22 part of the meeting summary that will be prepared
23 after the meeting. And this document will be made
24 public.

25 Our meeting today is to be transcribed.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 Therefore, please first state your name and
2 affiliation before stating your question or comment.

3 Also, it is very important that only one
4 person speaks at a time so that the reporter can get
5 an accurate transcript. The transcript also will be
6 posted on the NRC website.

7 We have folks participating in today's
8 meeting by phone as you know. So it's important to
9 ensure that everyone can hear and follow the meeting.

10 For that reason, I ask that those in the
11 room today use the standing microphones when asking
12 questions or providing comments. If you're
13 participating via the phone, please send an email to
14 me at Stewart.schneider@nrc.gov to confirm your
15 attendance.

16 Please note that public participation in
17 today's meeting is also being made available via the
18 webinar. I'll try to ensure that everyone can follow
19 the discussion as well as having time to speak and ask
20 questions.

21 When questions and comments are raised, we
22 will first address those from the public present in
23 the room. Followed by those on the phone, and finally
24 those on the webinar.

25 I ask also that for those of you in the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 room participating in today's meeting, please turn off
2 or silence your electronic devices.

3 And also, I'd like to remind visitors in
4 the room that you must be escorted at all times above
5 the first floor of this building. If you need to
6 leave for any reason, please leave by the rear door.

7 Finally, public meeting feedback forms are
8 located on the table at the back of the room. And
9 please be sure to fill one out. You can leave it with
10 one of the NRC participants here or drop it in the
11 mail, the postage is free.

12 Your opinion on how this meeting went will
13 help us improve our future meetings. For those on the
14 phone, meeting feedback forms are also available on
15 the NRC public website. Simply log on and locate the
16 meeting under the public meeting schedule, and there
17 you will find the feedback form.

18 So, the purpose of today's meeting is to
19 discuss the draft regulatory basis and its associated
20 preliminary draft regulatory analysis, which are now
21 being developed to support the Appendix H rulemaking.

22 Before we begin the meeting, I want to
23 clarify an issue concerning the initial public
24 announcement that was provided to the public. In that
25 notice, the Docket Number provided for the Appendix H

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 rulemaking, was incorrect.

2 When the initial public meeting notice was
3 posted, it provided NRC-2008-0582 as the NRC Docket
4 Number for the Appendix H rulemaking. However, this
5 Docket Number was used to identify previously the
6 Appendix G and H rulemaking activity when they were
7 combined.

8 In SRM SECY-16-0009, the Commission
9 approved the NRC staff's recommendation to stop the
10 development of the technical basis for the potential
11 change to the Appendix G regulations. Thus, this
12 meeting will only focus on the Appendix H rulemaking.

13 And it should be noted that the NRC is in
14 the process of issuing a new Docket Number for the
15 Appendix H rulemaking activity. Finally, the petition
16 for rulemaking, PRM 50-69, submitted by Westinghouse
17 Electric Company pertaining to Appendix G, will be
18 resolved separately.

19 During the meeting, the NRC will solicit
20 public feedback on the rulemaking scope. Including
21 the options for recommendations being considered.

22 The NRC will also solicit feedback on the
23 costs and benefits associated with this rulemaking.
24 Topics other than those supporting the content of this
25 rulemaking activity will not be discussed.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 The meeting is not designed, nor is it
2 intended to solicit or receive formal comments on the
3 draft regulatory basis and preliminary draft
4 regulatory analysis. And no regulatory decisions will
5 be made during this meeting.

6 The NRC will consider to the extent
7 possible, feedback from today's meeting in developing
8 the regulatory basis and regulatory analysis
9 documents. So next, let's talk about the rulemaking
10 process that's scheduled.

11 The process for the conduct of the
12 Appendix H rulemaking involves three steps. There's
13 the regulatory basis, proposed rule and final rule
14 stage.

15 The regulatory basis stage includes the
16 development of the draft regulatory basis and the
17 preliminary draft reg analysis. These draft documents
18 are scheduled to be issued for a 45-day public comment
19 period in early 2018.

20 And during that period, the staff will
21 hold another public meeting. The final regulatory
22 basis and companion regulatory analysis, are then
23 scheduled to be issued in September 2018.

24 Regarding the next stage, the proposed
25 rule stage, the NRC staff is scheduled to provide the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 proposed rule to the commission in September 2019.
2 The proposed rule will then be issued for public
3 comment during 2020.

4 And this again, will provide another
5 opportunity for the public to provide comment during
6 another public comment period at this time.

7 During the final stage, the NRC will hold
8 another public meeting to address the cumulative
9 effects of regulation. It should be noted that the
10 NRC staff is scheduled to provide the final rule to
11 the commission in September 2020.

12 So now let's discuss the purpose of the
13 regulatory basis. As I previously stated, the purpose
14 of today's meeting is to solicit the public's feedback
15 to support the NRC's staff's development of the draft
16 regulatory basis and preliminary draft regulatory
17 analysis.

18 The first one needs to know the type of
19 information that is captured in the reg basis
20 document. Which is then used to support the
21 rulemaking activity.

22 As you see on the slide, a regulatory
23 basis often includes details about the following:
24 these are the major high points of what the document
25 will contain. Why a current regulator or policy needs

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 to be changed.

2 Why alternatives to the rulemaking will
3 not work. Different approaches to resolve the issue.
4 Supporting scientific, policy, legal, and technical
5 issues.

6 Stakeholder interactions, which is the
7 result of public interaction and comments we receive.
8 And developing the technical portion of the reg basis
9 and stakeholder views.

10 Any back fitting considerations. And
11 finally, any limitations on the scope and quality of
12 the regulatory basis.

13 As I stated, in addition to the regulatory
14 basis, there's also the supporting regulatory
15 analysis. This companion analysis follows a
16 systematic and disciplined process of considering the
17 cost and benefits associated with all the approaches
18 to resolving the regulatory issue.

19 It should be noted that a separate
20 regulatory analysis is preferred. Because it allows
21 the financial analysis staff to set up the document
22 and financial model to support future regulatory
23 analysis revisions as the project proceeds through the
24 rulemaking.

25 It should also be recognized that as part

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 of the cumulative effects of regulation, the NRC staff
2 now provides cost beneficial information at the
3 regulatory basis stage. Thus, the key thing to
4 remember is that all together, the regulatory basis
5 and the regulatory analysis provide a more complete
6 analysis of the proposed alternatives to support the
7 rulemaking activity.

8 So now that we've completed the
9 introductions, the logistics and the purpose of the
10 meeting and scheduling what this document is about,
11 I'm going to turn the meeting over to David Rudland.
12 And he's going to talk about the specifics of the
13 rulemaking action.

14 MR. RUDLAND: Thanks, Stewart. Again, my
15 name is Dave Rudland. And I'm the Chief of the
16 Vessels and Internals Integrity Branch in the Office
17 of Nuclear Reactor Regulations.

18 And I'm going to go over the status and
19 the proposed options for the current rulemaking
20 activity. I think the way that the meeting is
21 scheduled, is that there is a formal question and
22 answer session at the end, after going through all of
23 these slides.

24 However, I'd like to try to make this a
25 little bit more open if at all possible. So as we go

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 through it here, if you have comments or questions,
2 I'll stop several times throughout the presentation to
3 ask for that.

4 But if you do, please speak up. And so
5 that we can have an ongoing dialog as I go through
6 this. I'm not sure how exactly how we deal with that
7 on the phone. But I think the Operator can handle it
8 if one of the participants on the phone has a
9 question.

10 MR. SCHNEIDER: Yes. You have to ask.
11 Because what I understand is they will not directly be
12 talking to the operator. The operator has to
13 personally issue.

14 MR. RUDLAND: Okay. All right. So for
15 those on the phone, I guess you might need to hold
16 your questions until I ask for questions.

17 And I'll stop, like I said, several times
18 throughout the presentation to do that. Can I have
19 the next slide?

20 All right, so I'm going to be going over,
21 like I said, the regulatory basis and some of the
22 preliminary regulatory analysis for the options that
23 we're considering for this rulemaking effort.

24 I'll go through some background. I will
25 talk about each of the options. And then I will talk

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 about what the recommendation of the staff is at this
2 point moving forward.

3 And again, we need -- we need the
4 participant's responses and comments and thoughts on
5 these options. We're also -- we're going to need some
6 thoughts and comments on the preliminary cost that
7 you'll see in each one of these options.

8 So, please be as open as you can as we go
9 through these.

10 MR. PALM: See, Dave. I hate to
11 interrupt. This is Nathan Palm with EPRI. I'm
12 getting --

13 MR. SCHNEIDER: Put your speaker on.

14 MR. PALM: It is on. I got a message
15 that, from the public actually. I've gotten a couple
16 of messages that out on the public line nobody can
17 hear because someone is not on mute.

18 And it's disrupting the call. So nobody
19 can hear what's going on.

20 MR. RUDLAND: All right. So if the
21 Operator can make sure that -- or those that are on
22 the call, please mute your phones so that any of the
23 background noise does not interfere with the
24 presentation. Thanks Nate. Okay. Next slide,
25 please.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 So what is Appendix H? I think most in
2 this room are familiar. But Appendix H, which is the
3 reactor vessel material surveillance program
4 requirements, establishes the requirements for what
5 vessel materials need to be in the surveillance
6 program.

7 What must be included. What must be
8 tested. It incorporates an ASTM consensus code and
9 standard E185 for design and testing of surveillance
10 program of materials.

11 It incorporates the '73, '79, and '82
12 revisions of that particular standard. It also
13 provides requirements on integrated surveillance
14 programs. And provides reporting requirements and
15 some other things.

16 The data from Appendix H is used in
17 fracture toughness regulations. As well as the PTS
18 regulations. Next slide.

19 So how did we get where we are? So, there
20 has been, as Stew pointed out earlier, there have been
21 some iterations of starting and stopping the
22 rulemaking efforts for both Appendix H and Appendix G.

23 And at one time the two were together in
24 a particular rulemaking package. There was a request
25 in 2014 to the commission to bifurcate those

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 rulemaking efforts, to focus on Appendix H, which
2 would be a cost reduction -- cost burden reduction
3 rulemaking effort.

4 And that particular request listed several
5 items in which could be incorporated to help reduce
6 costs. And you can see some of those here. Including
7 eliminating the testing for heat affected zone
8 specimens, adjusting the withdrawal schedules,
9 extending reporting periods, and updating to the most
10 recent standards.

11 Later in that year, the commission did
12 approve that bifurcation. And instructed the staff to
13 begin and move forward with the Appendix H rulemaking.
14 Next, sorry.

15 However, in early 2016, because of
16 budgetary constraints, the rulemaking effort was
17 actually put on hold. So there was no work done at
18 all through the 2016 time frame due to budget
19 reductions.

20 This particular rulemaking effort at the
21 time was considered a medium priority rulemaking
22 effort. So when it came time around budgets, this
23 effort was put on hold. Next slide, please.

24 So then in 2017, our budget was approved
25 for continuing Appendix H. So we started back up.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 Since that time there had been many changes to the
2 rulemaking process. Including the amount of
3 information that was required at the draft rule stage.

4 So instead of just having a draft reg
5 basis, it needed to include this draft reg analysis
6 and draft rule language. And the package was a lot
7 more complete and robust than was originally.

8 So, we kicked up a much stronger effort in
9 March to begin that rulemaking effort. We put
10 together a working group.

11 And that working group includes most
12 everybody in this room that are NRC staff, from NRR,
13 NRC, Research, and OGC. And we were tasked with
14 putting this package together.

15 The main thought of this particular
16 rulemaking, like I mentioned before, was that this is
17 going to be a burden reduction rulemaking. It wasn't
18 a safety related rulemaking.

19 There were not going to be any changes
20 that were safety related. It was mainly to reduce the
21 costs of both industry as well as to the NRC. So we
22 began developing options in March. Next slide,
23 please.

24 The ASTM standard. I mentioned earlier
25 that ASTM E185 versions -- several versions up to a

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 1982 version, is incorporated by reference in the
2 current version of Appendix H.

3 E185-82 contained both the design and
4 testing requirements for the surveillance capsule
5 materials. As time went on and the codes and
6 standards evolved, the ASTM committee separated those
7 standards into two separate standards, E185 and E2215.

8 E185 is the designer programs. E2215 is
9 the testing programs. In addition, there was years of
10 additional development and guidance added to the
11 standard as it went from the '82 version to the '16
12 version. Next slide.

13 All right. Well, after that little
14 background, I wanted to ask if there's any questions
15 before we move on?

16 MR. PALM: David, I'm getting indications
17 that there's still a lot of noise --

18 MR. SCHNEIDER: Could you identify
19 yourself?

20 MR. PALM: Nathan Palm, EPRI. I'm getting
21 indications there's still a lot of background noise on
22 the phone, so.

23 MR. RUDLAND: All right. I don't know if
24 the Operator can do anything about or not?

25 OPERATOR: Yes. This is the Operator. It

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 seems to be coming from your main line. It sounds
2 like there maybe a TV on somewhere in the background.

3 MR. RUDLAND: Not in this room. It's very
4 quite in this room.

5 OPERATOR: Okay.

6 MR. RUDLAND: I apologize for the
7 difficulties we're having on the line.

8 OPERATOR: It actually sounds much better
9 now.

10 MR. RUDLAND: I'm looking to see if maybe
11 some of the microphones are on that maybe causing some
12 feedback.

13 OPERATOR: It sounds much better now. I
14 can't hear any background noise.

15 MR. RUDLAND: Okay. All right. So are
16 there any questions? Or any questions on -- from
17 those on the bridge line?

18 OPERATOR: There aren't any questions yet.
19 However, again if you would like to ask a question
20 over the phone, please press star one, and record your
21 name. Thank you.

22 MR. RUDLAND: Okay. So, moving on. I'm
23 going to talk about the options. And again, we choose
24 -- the working group choose several options to try to
25 demonstrate the wide variety of different things that

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 were possible on this rulemaking.

2 We wanted to look at budget, maximizing
3 cost reductions. As well as fully incorporating the
4 new codes and standards. So next slide, please.

5 So we have three options currently. The
6 first option is Option A. It's the status quo. It's
7 not revising Appendix H.

8 And as I move forward, I'm going to be
9 talking about the comparison of costs and burden. And
10 it's going to be comparable to this particular option,
11 to Option A, the status quo.

12 Option B is to retain the incorporation by
13 reference of the E185-82. And make revisions to
14 Appendix H to help maximize the burden reductions.

15 Some of the burden reduction features I
16 talked about earlier that were in the request to the
17 commission, will be included. As well as additional
18 burden reduction features that we took from the most
19 recent codes and standards.

20 Option C. Option C is to incorporate the
21 2016 version of ASTM E185 and E2215. However, we
22 would need to revise the explanation to include those
23 burden reduction features I just talked about.

24 As well as condition the cogent standards
25 in order to offset increases and requirements in

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 burden. And to align the cogent standards with our
2 requirements.

3 So, over the next several slides, I'm
4 going to talk about Option B. I'm going to separate
5 this out. We'll talk about Option B.

6 We'll go through each of the conditions
7 and such that will go into Option B. And then at the
8 end of that, I'll ask for questions.

9 If people in the room have questions as we
10 are going through here, please stop me if I'm not
11 clear on something. Okay.

12 So, Option B again, as a reminder is to
13 retain the incorporation by reference of E185-82. But
14 revise Appendix H to try to maximize the burden
15 reduction. And what are those things?

16 The first is to eliminate the requirements
17 for testing of the heat affected zone specimens for
18 existing and reconstituted capsules. Eliminate
19 requirements for testing temperature monitors for
20 existing and reconstituted capsules.

21 And to extend the reporting period to 18
22 months for the ISP capsule reports. I'm sorry for the
23 capsule reports, not for the ISP capsule reports.

24 And also to help slightly change the
25 requirements into an integrated surveillance program

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 to align better with the upcoming new reactors.
2 Similarly, we'll look at some conditions on E185-82 to
3 do the same kind of things for new capsules.

4 For instance, the inclusion of HAZ
5 specimens. And the inclusion and testing of
6 temperature monitors. I'll talk about each of these
7 in detail in the next few slides.

8 All right, heat-affected zone, I'll refer
9 to that as HAZ probably throughout the remainder of
10 the presentation. The revision to Appendix H for this
11 particular condition would be to eliminate the
12 requirements for testing of these HAZ specimens, for
13 both existing and reconstituted capsules.

14 And to do the same for new capsules.
15 Except, don't include those. So, new capsules will be
16 the inclusion and testing. Existing programs would be
17 just the testing of HAZ.

18 And the basis, the technical basis for
19 this is that it, the data that comes from HAZ hasn't
20 been useful in the past. And so, it doesn't seem to
21 be a necessary requirement.

22 And of course it will help financially and
23 in radiation exposure to eliminate this particular
24 requirement. The estimated -- and these costs, I'll
25 make this comment now about the cost.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 The cost that we have here, we have -- had
2 some conversations with folks from the industry. But
3 these are NRC rough order of magnitude costs.

4 And so I guess what I'm looking for today
5 is if anybody sees numbers that are out of -- the
6 order of magnitude incorrect, please let us know.
7 We're looking kind of for right now just for order of
8 magnitude kind of numbers. To make sure we're in the
9 right ballpark.

10 So we estimate between about five and ten
11 thousand dollar decrease per capsule to eliminate this
12 particular requirement. Okay. Next slide, please.

13 Temperature monitors. Again, this is a
14 requirement in the current version, to test these
15 temperature monitors. Or to look at the temperature
16 monitors within the capsules.

17 And so this will make a revision to
18 Appendix H to eliminate the requirement for testing
19 that in existing and reconstituted. And the same for
20 new capsules, except it would include the inclusion.

21 So no inclusion, no testing in new
22 capsules. And no testing in existing and
23 reconstituted capsules.

24 Again, the basis for this is that these
25 melt wires only give us kind of a feel for what the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 maximum temperature is. And it's better, more
2 appropriate to be measuring the reactor coolant
3 temperature to get a better long term average of the
4 temperature.

5 So, there is no real technical need for
6 this particular requirement. And again, the staff
7 estimates that the cost is about one thousand dollars
8 per capsule.

9 Reporting requirements. Right now the
10 current Appendix H requires that capsule reports are
11 submitted to the NRC within 12 months. This will
12 extend it to 18.

13 It was originally 12 months due to the
14 limited amount of embrittlement data that was
15 available. And wanting to get that data as soon as
16 possible. It's not necessary anymore now that we have
17 an awful lot of data available.

18 So, -- and typically the industry requests
19 longer than 12 months anyway. So, this is an
20 appropriate thing. I think 18 months is appropriate
21 to reduce that burden and the need.

22 We don't have a need for the amount of
23 material, or amount of information at this time. And
24 again, the numbers are, we suspect, about 20 thousand
25 dollars per extension request.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 Integrated surveillance programs. I'll be
2 talking about -- and when I talk about this from now
3 on, I'll be calling this ISP.

4 The revision to this is to streamline the
5 requirements in Appendix H. The requirements were put
6 into Appendix H to try to mimic the existing ISP
7 programs that were in place.

8 And it might be restrictive for some of
9 the new reactors. So some of the wording will change
10 to help make it more convenient for the small modular
11 reactors or some of the other new reactor designs.

12 There's some potential savings here. And
13 it could be significant for SMRs. I think we've
14 estimated it to be about 150 thousand dollars.

15 All right. So, those are the major cost
16 burden reduction features in Option B. Are there any
17 questions about those?

18 MR. PALM: Dave. This is Nathan Palm at
19 EPRI. Has the staff considered eliminating or
20 reducing the current requirements to test tensile
21 specimens?

22 And we're kind of sitting here thinking
23 of, you know, is there any use of that data currently
24 within an industry? The only thing we could think of,
25 is with respect to fracture toughness, testing, but

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 not charging data.

2 MR. RUDLAND: Right.

3 MR. PALM: And you know, obviously the
4 regulations that you cite as using the results of this
5 data don't use the tensile life information in any
6 way. So, it seems like it -- testing of tensiles
7 could be something that would be entirely optional
8 without impacting the use of the data.

9 MR. RUDLAND: Yes the -- yes, thank you
10 for that. The working group did talk about that. You
11 know, and I see that Mark Kirk put on his speaker. So
12 he wants to say something --

13 MR. KIRK: No, you first.

14 MR. RUDLAND: I could tell. So, you know,
15 personally for me, you know, you test Charpys, you can
16 glean additional information off a tensile test that
17 you can't necessarily off a Charpy test.

18 Right? So, if you see changes in the
19 strength or changes in the yield strength, it can help
20 you understand a little bit more about the true
21 fracture toughness.

22 And again, it's not an impar -- we talked
23 about it. And debated it internally. And it's
24 something I think we'd be open to consider.

25 I don't know if you have anything else to

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 add, Mark?

2 MR. KIRK: Yes. I would agree with what
3 Dave said. The thing that just occurred to me is to
4 a place where one might actually need it.

5 Not just as a need to have rather than a
6 nice to have, is if you were doing an ASME Section 11
7 Appendix K analysis. A J-R curve analysis. You would
8 need to know the tensile properties.

9 You know, so obviously you don't
10 necessarily expect to or want to get in that bin. But
11 if you are in that category, you would need to either
12 have or estimate tensile information.

13 But, you know, I certainly agree, it's not
14 a usual thing. And so I would agree with Dave that I
15 think we'd be receptive to -- or receptive to any
16 comments. But, you know, comments on that. Because
17 we had those discussions among ourselves.

18 MR. PALM: This is Nathan Palm, EPRI
19 again. Yes, I mean but the -- I mean, the example you
20 cite, Appendix K would require you to have, you know,
21 J-integral data also.

22 Which, you're not getting from your Charpy
23 program. So --

24 MR. KIRK: Right. And so it's a, you know
25 as we're -- it's always a dynamic between nice to have

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 and need to have.

2 And as you know, as I think many people
3 are aware, when you're in an independent stay
4 analysis, you know, you can get your J-R data from a
5 direct measurement. Or you can use an estimation
6 scheme.

7 Obviously, the advantage, you know, I'm
8 looking at it from the industry side, it would be, I
9 think, more advantageous to have in virtually any
10 case, a direct measurement. Because then you're less
11 susceptible to margins that need to be added for
12 uncertainties by your friendly neighborhood regulator.

13 So, that might be something that the
14 industry would elect to continue to do even if the NRC
15 were to not require it.

16 I think, you know, from my perspective, I
17 think we're all in agreement that the critical
18 information that comes for the capsules, not speaking
19 of the dosimetry, but the critical mechanical property
20 information, right now comes from the Charpys.
21 Because that's how all the regulations are construed.

22 Would you like to have fracture toughness
23 as additional information? Maybe so in some
24 circumstances. Would you like to have J-R curve?
25 Maybe so in some circumstances. Tensiles too.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 So, anyway, I should shut up.

2 MR. RUDLAND: And I think I'm going to
3 write down that the still will take an action to
4 reconsider the tensile testing in our discussions.

5 MR. PALM: This is Nathan Palm again. I
6 was going to say, maybe a suitable compromise would be
7 that the specimens, the tensile specimens need to be
8 retained.

9 So, maybe not necessarily required to be
10 tested when the capsule is pulled. But you do need to
11 retain them, you know, for use if the need arises
12 later.

13 MR. RUDLAND: Thank you.

14 MR. DeVAN: Dave, this is Matt DeVan at
15 AREVA. With the integrated surveillance program, you
16 talk about simplifying and streamlining the ISP
17 requirements.

18 Is there -- can you relay anything on how
19 this might affect the existing programs? Because
20 there are two programs in existence right now, both
21 for the BW plants and also for the BWRs.

22 MR. RUDLAND: Yes. I think the plan is
23 for it to not impact any existing programs. Most of
24 the design of programs are going to be referred back
25 to their code of record and how they're designed.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 So these requirement changes would be for
2 new.

3 MR. DeVAN: Thank you.

4 MR. PALM: This is Nathan Palm, EPRI.
5 Also, with regard to integrated surveillance program,
6 I mean, if you're planning to modify Appendix H (c)
7 too, which says no reduction requirements for a number
8 of materials to be irradiated specimen types or
9 numbers, specimens per reactor.

10 You know, if you're envisioning that each
11 individual SMR would not have to have a full
12 surveillance program, I would think that your cost
13 savings are going to be far in excess of 150 thousand
14 dollars per SMR.

15 MR. RUDLAND: Okay.

16 MR. PALM: You could always put a factor
17 of five to ten on that, I would think.

18 MR. KIRK: There's a comment from Brian
19 Hall on this that says -- Brian Hall from
20 Westinghouse.

21 Tensile test temperatures are prescriptive
22 and not the best choice in the current. I assume he
23 means in the current version of the standard.

24 It also says, relaxation on the number of
25 tensile tests would be beneficial.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 MR. RUDLAND: Maybe Brian can -- if
2 Brian's on the line, can he expand on that comment?

3 MR. HALL: It means you can't hear me.

4 OPERATOR: Brian, your line is open.

5 MR. HALL: Okay. Can you hear me now?

6 MR. RUDLAND: Yes.

7 MR. HALL: Brian Hall with Westinghouse.
8 Yes, it specifies testing, three tensile tests in the
9 E185-82 version. And generally the temperatures are
10 specified at the lower transition, mid transition, and
11 upper shelf.

12 There's very little difference in tensile
13 properties at those temperatures. And you've then
14 used up all your tensile specimens generally.

15 And if you were in the future to do a
16 massive curve test, you don't have any tensiles left
17 to measure your tensile properties at your master
18 curve test temperature. Which is important for that
19 type of test.

20 So, my suggestion is to reduce the number
21 of required tensiles to one or two. And such that we
22 can hold the other one or two in reserve for potential
23 future test temperatures of interest.

24 MR. RUDLAND: Okay. Thank you for that
25 comment.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 MR. HISER: This is Allen Hiser of NRC.
2 Maybe we want to see if any cost savings for that, if
3 they were to hold a couple. Since we don't have -- we
4 don't even have our ballpark estimates.

5 MR. RUDLAND: For the tensile tests you
6 mean.

7 MR. HISER: Right.

8 MR. RUDLAND: Yes. Yes, so okay. I can
9 make an educated guess that testing of tensile
10 specimens is not very expensive. You know, so I'm
11 thinking it would probably be in the same order of
12 magnitude as what we put down for the testing of the
13 HAZ specimens.

14 I'm assuming that's probably relatively
15 reasonable. I think we had down like a thousand
16 dollars or some number like that.

17 Oh, we had -- no. We had like five
18 thousand dollars. So, does that sound in the right
19 order of magnitude?

20 MR. KIRK: Shrugging doesn't get on the
21 record.

22 MR. RUDLAND: It's difficult. I don't
23 mean to put anybody on the spot. So, you know, we'll
24 make an estimate the best that we can.

25 Oh, Brian Hall says yes. Five K for

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 tensiles. Okay. Great. Thanks. Thanks, Brian.

2 Were there any other comments online
3 before I want to go back to an ISP question. Were
4 there any other questions on the line?

5 OPERATOR: Yes. There is one in the queue
6 from Dan Solitz. Your line is now open.

7 MR. SOLITZ: Good morning. This is highly
8 technical. I'm just a regular member of the public.
9 I'm wondering if you could go into some detail as to
10 what composes the capsules? Where they're placed?
11 How many of them there are?

12 And just some general background on this,
13 please.

14 MR. RUDLAND: Oh. I'm going to let Mark
15 Kirk talk.

16 MR. KIRK: Okay. So, in -- oh, I'm sorry.
17 Mark Kirk, NRC Research. So, we -- I'm just going to
18 speak -- I want to try to speak generally so I don't
19 get caught up in what's required or different designs
20 used by different manufacturers.

21 But, a surveillance capsule, at least one
22 design you can think of as having sort of the cross
23 section of a pack of cigarettes. And it's as maybe as
24 tall as a person.

25 And that's filled with small metal samples

1 that are then subsequently tested in a laboratory to
2 get mechanical properties like Charpy V-notch energy.
3 Which is a measure of the material's resistance to
4 breaking.

5 Or tensile specimens that we were just
6 talking about. It's a measurement of the material's
7 strength. And also in the capsules are temperature
8 monitors to monitor the maximum temperature that the
9 capsule sees.

10 And that's achieved by a -- well, the
11 techno-babble word is a low melting point eutectic
12 alloy. Or you could think of it as solder.

13 So they melt at specific temperatures and
14 tell us what maximum temperature the capsule is
15 seeing. And the capsule also contains dosimeters to
16 measure the amount of radiation that the capsule is
17 seeing.

18 So, generally speaking, these are put in
19 at the time the reactor vessel is delivered to the
20 plant site. And then they're removed from time to
21 time throughout the reactor's life.

22 They can be attached to a number of
23 places. But the easiest place to think about is that
24 they are bolted or otherwise affixed to the inner
25 diameter of the capsule wall.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 So they're a little bit closer to the
2 nuclear core than the reactor vessel itself. That
3 means they pick up a radiation dose, and therefore
4 radiation damage at a somewhat faster rate than the
5 reactor vessel.

6 And that's desirable. Because that means
7 say a capsule has been in the reactor for ten years,
8 it might have an irradiation equivalent, and a
9 radiation exposure equivalent to that which the
10 reactor vessel, which is, of course, what we care
11 about from the safety viewpoint, would see after 30
12 years.

13 So those capsules are removed during
14 outages. And then they are shipped to laboratories
15 called hot cells. That are capable of dealing with
16 irradiated materials.

17 The container is then broken open. And
18 the specimens inside are tested in a mechanical
19 testing laboratory.

20 Did that help?

21 MR. SOLITZ: Yes. Thank you.

22 MR. RUDLAND: Yes. The only thing I would
23 add is that these specimens, as Mark pointed out, are
24 relatively small. Charpy specimens are about ten
25 millimeters by ten millimeters by just over two inches

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 long.

2 And tensile specimens again, are a couple
3 of inches long. And could have a diameter that's
4 around a quarter of an inch, or something like that.

5 So that's the size of the specimens that
6 he's talking about. And he talks about the placement
7 of these surveillance capsules, and that they are
8 closer to the core than the actual vessel wall.

9 And so when we talk about -- in the next
10 session, we'll talk about lead factor. And that's
11 what he was talking about, is that's how much more
12 fluence the capsule is getting, relative the vessel
13 wall.

14 All right. Are there any other questions
15 online? I wanted to ask Dan Widrevitz a question
16 before he walks away.

17 OPERATOR: I'm showing no further
18 questions in the queue at this time.

19 MR. RUDLAND: Okay. Thank you. I wanted
20 too just quickly touch on the ISP issues that was
21 brought up in terms of the better estimate in the cost
22 savings for small modular reactors.

23 And I wanted to ask Dan if he thought
24 Nathan's characterization was proper for what we were
25 thinking for the change in that sense?

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 MR. WIDREVITZ: So, my original cost
2 estimate was what you said. And then everyone told me
3 it was too much.

4 MR. RUDLAND: Okay. So yes is the answer.

5 MR. WIDREVITZ: Yes.

6 MR. RUDLAND: Okay. Thanks.

7 MR. PALM: Oh, okay. Well, I mean my
8 thought was so you mean you're going to have, you
9 know, a fabrication cost for the capsules. Which that
10 alone is going to be in excess of 150 thousand
11 dollars.

12 And then, you know, I mean people can
13 chime in what they think. But I mean, you know,
14 ballpark cost of testing and doing effluence
15 evaluation and evaluation of results through a
16 surveillance capsule, it could run anywhere between
17 three to six hundred thousand, depending.

18 MR. RUDLAND: Right. But we need to
19 remember that this is -- the costs are the delta
20 between what's in the standard now and what we've
21 planned for things to change.

22 MR. PALM: Right. But I mean, so what I'm
23 saying though is, if you're thinking of reducing the
24 number of capsules, because what your slide says,
25 you're thinking about changing H-Charlie-2.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 MR. RUDLAND: Right.

2 MR. PALM: Which is no reduction in the
3 requirements for number of materials. So, I mean, so
4 if you reduce one capsule, let's just say one capsule,
5 you've got the fabrication cost of that capsule.

6 Which I can't really comment on. But,
7 it's not cheap by any means. Like I said, well in
8 excess of 150 thousand dollars.

9 MR. RUDLAND: Okay.

10 MR. PALM: Okay. Well --

11 MR. RUDLAND: You know, why don't we hold
12 that. Because in about five minutes we're going to
13 talk about what it costs to make a capsule.

14 MR. PALM: Okay. But then -- so you're
15 going to have the fabrication costs and the testing
16 costs.

17 MR. RUDLAND: Okay.

18 MR. PALM: So, I mean it's, just for one
19 capsule. And then if you have multiple capsules and
20 multiple reactors.

21 MR. RUDLAND: I understand. Okay. Thank
22 you. Thank you for that. Okay.

23 All right, let's move onto the next slide.
24 I'm going to move on now and talk about Option C. As
25 a reminder, Option C is the option to incorporate by

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 reference the 2016 versions of E185 and E2215.

2 The plan for this Option is that the
3 revisions to Appendix H will be the same as what we
4 just talked about in Option B. So all of the costs
5 burden reduction features of Option B will be in
6 Option C also.

7 But since we're going to be incorporating
8 now the new version, we're going to have to have some
9 conditions. Which we're estimating to be about 13.

10 That will help us align with our
11 requirements as well as reduce some possibly
12 unintended burden that comes with incorporating the
13 new standard. And we'll talk about each one of those
14 in detail.

15 There maybe further gaps and further
16 conditions that may come out as we go through the more
17 detailed analysis. But our initial analysis, we came
18 up to 13. So, next slide, please.

19 All right. The first one is data
20 reporting. And in ASTM E2215, I should make a comment
21 that most of these are -- most of these changes that
22 we're going to be talking about, are changing should's
23 to shall's or shall's to should's, depending on where
24 we think the requirements need to be.

25 There are some cases in the standard that

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 gave conflicting wording, compared to requirements.
2 That's what we tried to clear those up. This
3 particular one is a change from a should to a shall.

4 So, E2215 was a -- not a requirement to
5 describe the perfect procedures and justify data
6 exclusion for the Charpy data. And the staff feels
7 that these should be requirements.

8 This will -- you know, anytime you exclude
9 data the -- it could have significant impact. So, I
10 want to make sure that the justifications are well
11 suited.

12 This will be a slight cost burden, because
13 it's going to be an additional requirement that wasn't
14 specifically called out in E185-82. And we estimate
15 that will be about five to 15 thousand dollars per
16 submittal.

17 And again, this isn't -- sorry, this is
18 not necessarily any more testing or anything like
19 that. It's just making sure that the reporting is
20 done properly. Okay. Sorry, next slide.

21 Secondary references. E2215 includes a
22 lot of secondary references. Typically, when we
23 incorporate by reference, those secondary references
24 are not requirements.

25 However, and this is something that we're

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 still unsure about, and OGC is helping us along with
2 this. In some cases here, the wording in E2215 uses
3 the word shall along with the secondary references.
4 Which indicates that it maybe a requirement.

5 So this condition then permits the
6 optional use of those things. And it makes the
7 secondary references not a requirement.

8 There's some additional wording on E900
9 and some of the fluence that are in the next slide.
10 You can use these secondary references.

11 But again, they're an option and you can
12 use them, except for E900 and the fluence ones without
13 NRC review and approval. There's no cost impact to
14 this condition. Next slide, please.

15 For E900 and the fluence references, we're
16 going to put a separate condition on, on these.
17 Because they're optional, but if they're going to be
18 used, they need to have review and approval in order
19 to use it.

20 And the basis for that is that some of the
21 methods in there are inconsistent with the NRC
22 guidance. And that is E900 and E853.

23 E900 is the embrittlement trend standard.
24 And E853 is neutron fluence standard. And again,
25 there will be no cost impact compared to the current

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 Appendix H. Which is Option A.

2 All right. The next one is about beltline
3 materials. The new ASTM E185-16 defines a geometric
4 beltline. Which is that portion of the reactor vessel
5 that is directly adjacent to the core.

6 And it requires that you find your
7 limiting material. And if your limiting material is
8 outside of this geometric beltline that you include
9 both the limiting material and your geometric beltline
10 material in the surveillance capsule.

11 And so that's a little bit inconsistent
12 with how the NRC regulates on beltline. Which is a
13 fluence driven determination. And so this condition
14 will try to align this with the NRC requirements.

15 It will reduce the material just to allow
16 just a weld and a base metal of the limiting material.
17 And not require limiting material and geometric
18 beltline materials.

19 So it will get rid of the inclusion and
20 testing of two materials. Which is a cost diversion.
21 So, if you look at it, if we were to incorporate this
22 by reference, it would be a cost burden.

23 We're getting rid of this, so it's
24 actually a cost diversion. But there's no cost impact
25 if you compare it to Option A. Because Option A only

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 requires the limiting materials.

2 I hope that's clear. That maybe a little
3 bit confusing. But let me point that out again. Is
4 that without this condition, it would be a cost
5 increase. With the condition, there's no cost impact.

6 The next several slides are going to talk
7 about withdraw schedule. And the number of capsules.

8 E185-82 basis the withdrawal schedule on
9 end of life. Which is set at 40 years, 32 EFPY. At
10 a minimum, the 82 version says three capsules must be
11 fabricated and inserted. Two must be tested within 40
12 years of operation.

13 Sixteen is a little different. It doesn't
14 base the withdrawal schedule on end of life. It bases
15 on this maximum design fluence or MDF. And it's not
16 specific on what the definition of MDF is in terms of
17 the number of years.

18 Currently for those new reactors that are
19 -- that have been reviewed, the design certifications
20 that have been approved, are designed 60 years. So
21 MDF is 60 years for those.

22 But the standard itself is not specific on
23 what MDF could be. It could be 40 years. It could be
24 60 years. It could be 80 years. Whatever the
25 designer of the program chooses as part of their

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 design.

2 The 16 version requires four capsules and
3 one standby capsule. So five capsules to be produced.
4 And four to be tested at one quarter, half, three
5 quarter, and one MDF. As well as three capsules
6 tested within 40 years of operation.

7 So it's different. A different way of
8 thinking about how the withdrawal schedule is put
9 together based on how it was thought about back in the
10 1982 version. Okay. Let's go to the next slide.

11 So the first condition we're going to put
12 on E186-16 is to help clarify and correlate this MDF
13 to EOL. And it's basically just to try to make sure
14 that we're aligned with the way that we regulate.
15 Which is through license periods. And not to some
16 maximum design fluence.

17 As we talked about earlier, you know,
18 three capsules are required to be tested within 40
19 years. And so we're going to be correlating one to
20 two MDF to be about one to two of the end of life. Or
21 a license renewal extension.

22 And again, there's no cost impact on this.
23 This is just a correlating the schedules from 16 to
24 what is -- how we currently regulate.

25 All right. So now we'll go into the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 number of capsules. Again, as I mentioned, ASTM E185-
2 16 requires four capsules to be manufactured and
3 inserted into the vessel.

4 That is, as I mentioned in the 82 was
5 three. For the low-shift materials, 81 -- E185-82
6 requires three. And so we're going to -- this
7 condition is going to condition out the fourth
8 capsule.

9 So that we will have three capsules that
10 will be required. And I think we say that if we
11 don't, that would be a seven hundred thousand dollar
12 increase compared to the current Appendix H.

13 Testing. E185-16 requires the withdrawal
14 of three and testing of three within the first 40
15 years. I'm sorry, it does not say with testing. It
16 just says the withdrawal of three capsules in E185-16.

17 So this particular condition clarifies
18 that if you withdraw the capsule, you have to do the
19 testing also for those three within 40 years. I think
20 it was inferred, but not specifically stated.

21 And so this condition will specifically
22 state that testing has to be done. Now this is one
23 additional capsule to be tested as compared to the 82.

24 As you remember the 82 version said,
25 insert three, test two. Now we're going to be

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 inserting three and testing three. So this is going
2 to actually be an increase of about six hundred
3 thousand dollars as compared to the current Appendix
4 H.

5 Next is standby capsules. ASTM E185-16
6 requires one standby capsule. And this requirement is
7 to remove -- I mean, this condition is to remove that
8 requirement and make a standby capsule optional, but
9 recommended.

10 And again, this is going to be about a
11 seven hundred thousand dollar cost diversion. But no
12 impact compared to Option A.

13 Which is the current Appendix H, because
14 there is -- it's not a requirement in the current
15 version. So we're making this consistent with the 82
16 version.

17 Specimen testing, E2215-16 makes a comment
18 that all materials should be tested. And again, this
19 is a clarification from should to shall to make it
20 clear that it is a requirement that you do the
21 testing.

22 And that it's not an option to do all of
23 the testing. And there's no cost impact to the
24 current Appendix H.

25 Chemical analysis. E185-16 talks about

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 chemical analysis from base metal and weld metal. But
2 it does not require that. So this condition is
3 actually converting back to the requirements of E185-
4 82 to test three specimens, randomly test three
5 specimens.

6 This will be about a three thousand dollar
7 increase compared to the current version -- but no.
8 A three thousand dollar increase compared to the ASTM
9 standard. But no cost increase compared to Option H.
10 Because It's consistent with what's in E185-82 right
11 now.

12 We talked about temperature monitors. In
13 Option B this is a similar requirement to that.
14 E2215-16 says that you shall test these melt wires.
15 You shall examine them, not really test.

16 You shall examine the melt wires. And
17 this just eliminates that requirement. We talked
18 about the basis for that earlier. We cost this at
19 about a thousand dollars cost averted.

20 Lead factor. Again, the lead factor is
21 the amount of increased in fluence that the capsule
22 sees relative to the wall of the vessel.

23 E185-16 again, for design of new capsules
24 shows -- says that it should be greater then 1.5 and
25 less then 5. And this condition changes the should to

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 the shall.

2 Now it -- and the basis is that it
3 protects against having a lag factor or a factor less
4 then one. And it provides against if there's any --
5 happens to be any flux capacity for very high fluence.

6 This is a zero cost impact change.
7 However, it is a technical change from what's in 82.
8 E185-82 says that the lead factor should be between 1
9 and 3 I believe. So this is a technical change. But
10 no cost impact.

11 Correlation monitoring material or
12 reference material it's also called. It says here in
13 E2215-16 that these specimens, these reference
14 materials shall be tested and evaluated.

15 And again this is a change from shall to
16 should. Because we don't believe it's a -- it should
17 be a requirement to test the reference or correlation
18 monitoring material.

19 I think it's recommended if they're there.
20 And it can be used for whatever they need to be used
21 for. But it's not a requirement in testing.

22 And this would be five thousand to ten
23 thousand increase if it was not conditioned. But no
24 cost impact as compared to the current version of
25 Appendix H.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 Fracture toughness specimens. We talked
2 about fracture toughness earlier. ASTM E185-16 for
3 new programs requires eight fracture toughness
4 specimens to be included in the capsule.

5 And since there's no current regulations
6 that use fracture toughness, we're going to be
7 changing this to should. Making it an optional.

8 And it's about again, no cost impact
9 compared to the current Appendix H. Because there is
10 no requirement in the 82 version for fracture
11 toughness specimens.

12 In addition to those which were the bigger
13 ticket items, there is a series of other items, as
14 shown in this slide, of other additional
15 considerations that maybe small increases or
16 decreases. Tensile specimens is there. So that we
17 are looking at, at least making the 82 and 16 versions
18 consistent.

19 Archive material, number of Charpy
20 specimens, also try to make the 16 version consistent
21 with the 82. There potentially maybe some more gaps
22 based on further review.

23 These things that are on this slide, we
24 have determined to be a small cost impact. And
25 probably will not be included in the details of the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 regulatory cost analysis.

2 Okay. Before I go onto Option what should
3 I choose, I talked for a long time about all these
4 different -- and I went through it relatively quickly.
5 Let's take a break here and talk about if there's any
6 questions or concerns about the conditions that we
7 have suggested for Option C.

8 MR. HARDIN: This is Tim Hardin of EPRI.
9 I think I know the answer, but it's very important,
10 and I think it's worth reiterating and revisiting.

11 On the lead factor reign, you're going to
12 condition -- you would on Option C, condition E185-16
13 to require that the lead factor be greater than 1.5
14 and less than 5.

15 And as you know, there are a lot of
16 capsules out there, you know, operating today that are
17 less than one. And so I want to verify that there is
18 no -- that condition would not have any retroactive
19 impact on existing data sources.

20 MR. RUDLAND: That's right. And again, I
21 think I stated this once, but I'll say it again. Is
22 that existing programs refer to their code of record.

23 And so however they were desig -- whatever
24 the code was at the time that they were designed, is
25 what they'll stick to. You're not going to have to

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 change the design of our programs based on this.

2 So, E185-16 will be for new programs.

3 MR. MITCHELL: But I'd add, Tim -- this is
4 Matt Mitchell with NRO. I think our awareness of that
5 fact of life existence with the current operating plea
6 was one of the drivers for why we felt it would be
7 potentially appropriate to condition as from a should
8 to a shall, to ensure that there is a lower likelihood
9 of ending up with future plants being built with
10 capsules that have lead factors at one or lower, as it
11 turns out.

12 MR. RUDLAND: Any other questions from the
13 people that are here in the room?

14 (No response)

15 MR. RUDLAND: Okay. Let's go to the phone
16 and see if there are any questions on the phone?

17 OPERATOR: Yes. There is one in the queue
18 from Dan Solitz. Your line is now open.

19 MR. SOLITZ: Yes. Can you go into some
20 details of lead factor? What is it -- what does that
21 mean? What does that comprise?

22 MR. RUDLAND: Yes. Again, a lead factor
23 is a factor that describes the amount of fluence that
24 the capsule is seeing relative to the reactor vessel
25 wall. So if a lead factor is one, then the capsule

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 and the vessel wall are seeing the same amount of
2 radiation.

3 And as Mark Kirk talked about earlier, in
4 the design of these, in some cases they placed the
5 capsule closer to the core than the vessel wall. And
6 each vessel that's in the plant may not be at the same
7 distance away from the core.

8 So they may have a multiple different lead
9 factors for the different capsules in one particular
10 plant. But it's basically a measure of how close the
11 capsule is to the core, but it's a factor that relates
12 the fluence in the vessel -- or in the capsule
13 relative to the vessel wall.

14 MR. SOLITZ: And this is determined by
15 calculations? Or you've done actual testing on the
16 vessel wall and the capsules at the same exposure?

17 MR. RUDLAND: Right. These are all done
18 by calculation. But they're the calculations of --
19 the calculations of --

20 MR. SOLITZ: So no one performed an
21 autopsy on an old reactor vessel?

22 MR. RUDLAND: I'm sorry, could you repeat?
23 I didn't hear what you said.

24 MR. SOLITZ: So nobody's actually taken a
25 piece of an old reactor vessel and compared it to what

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 the history of the specimens are?

2 MR. RUDLAND: Well, the calculations of
3 fluence have been validated. Maybe I could have my
4 fluence expert expand a little bit.

5 MR. KREPEL: Well, I can't provide much
6 information about it at this time. But I can answer
7 your question.

8 There is a lot of validation that is
9 provided for the current method. They just have to
10 demonstrate their method and show that it is supported
11 by validation through measurement.

12 MR. RUDLAND: And we have a regulatory
13 guide that describes the process for doing the
14 calculations that is approved by the NRC.

15 MR. SOLITZ: Okay. But you do have
16 dosimeters at the vessel wall also?

17 MR. KIRK: Dosimeters at the wall, yes.
18 This is Mark Kirk, NRC Research. Just one thing to
19 add.

20 A form of indirect validation is available
21 in some research programs that have been conducted
22 internationally over the years where retired vessels,
23 once they're taken out of service, mechanical samples
24 are removed from the vessel. And tests are done.

25 The Charpy V-notch test that we've been

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 talking about. And the results of those tests are
2 compared with the expectation of what the value should
3 be that were based on the surveillance capsules.
4 Which is the subject of this meeting.

5 That was done for the Chooz A Reactor in
6 France and the Gundremmingen Reactor in Germany. And
7 also Greifswald, which is a former East German
8 reactor.

9 And in all cases the measurements done on
10 the vessel were within the range of the prediction
11 accuracy from the surveillance capsules. Obviously
12 that's not something that's feasible to require on an
13 operating reactor.

14 Because you don't want to go carving hunks
15 out of the vessel wall. That would be bad for
16 integrity.

17 But, in cases of retired reactors, there
18 are research studies that show that the predictions or
19 the expectations that we're getting out of these
20 surveillance programs, are consistent with the
21 mechanical properties measured post-service.

22 MR. SOLITZ: Okay. This is kind of a --
23 it doesn't really matter what the alloy of the reactor
24 vessel is? It's pretty much the same across the range
25 of alloys?

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 MR. KIRK: The reactor vessel, the steel
2 that's used in the reactor vessels, at least in the
3 United States, is all quite similar grade. There are
4 not large differences in steel grade among the U.S.
5 operator reactor fleet.

6 MR. RUDLAND: And again, the material
7 that's inside the capsules is the limiting material
8 for that vessel or program that it's involved in.

9 MR. SOLITZ: What do you mean by limiting?

10 MR. KIRK: Limiting meaning, so the steel
11 grade is consistent throughout the U.S. operating
12 fleet. However, different proportions of tramp
13 elements like copper and ally and elements like
14 nickle, change the sensitivity of the steel to
15 irradiation damage.

16 So, in a given reactor beltline, you might
17 have six or seven different steel plates that are
18 welded together by eight or nine welds. And each one
19 of those can have a distinct chemical composition.

20 So, when designing in a surveillance
21 program, the manufacturer will look at the chemical
22 composition of each of the individual plates or
23 forgings or welds that make up the reactor beltline.
24 And that's the area closest to the core.

25 And based on our knowledge of the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 irradiation sensitivity of those materials, pick the
2 materials for surveillance that are the most prone to
3 irradiation damage. And that's a very long winded
4 explanation of why we use the very short word,
5 limiting.

6 Because those are the materials that are
7 most prone to embrittlement. And therefore most limit
8 the reactor's safe operating lifetime.

9 MR. SOLITZ: Okay. Thanks. And going
10 back 30 years or more, the Navel reactors, now there's
11 something, if I remember right, it's called a
12 biological shield. It was a piece of metal that was
13 supposed to protect the reactor vessel.

14 Do commercial reactor vessels have that?

15 MR. MITCHELL: This is Matt Mitchell with
16 NRO. I think there are some designs that had a
17 biological shield incorporated.

18 But it was essentially for personnel
19 protection outside of the reactor vessel. To try to
20 limit the amount of radiation that would escape from
21 the area of the reactor vessel and potentially impact
22 personnel operating in the area -- or working in the
23 area.

24 So it was a personnel dose reduction
25 feature. Not to limit the radiation to the vessel

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 itself.

2 MR. RUDLAND: All right. Are there any
3 other questions from those online?

4 OPERATOR: I'm showing no further
5 questions at this time.

6 MR. RUDLAND: Okay. And so let's talk a
7 little bit about the options and some of the pros and
8 cons. And again, if everybody, if people in the
9 audience here, or on the phone think there are other
10 things that are pros and cons for these Options,
11 please, this is a good time to have an open
12 discussion.

13 I think we, the staff, feel that both
14 Option B and C are technically adequate. Option B was
15 designed to maximize the burden reduction.

16 And we say that because Option C required
17 us to, in some cases, take a burden increase. Which
18 would limit that overall burden reduction.

19 Option C though, on the other hand, allows
20 us to keep pace with the ASTM standards. Keep a pace
21 with the most recent consensus codes and standards.

22 And it is a more thorough standard with
23 additional guidance that's not included in the 82
24 version. So the things that are pro for Option C of
25 course, are cons for Option B.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 That we're not keeping pace. That it is
2 less thorough. And sometimes not as clear as the 16
3 version.

4 For Option C, you know, we do have the 13
5 conditions. And the burden reduction is just not as
6 great as it would be for Option B.

7 Any time you incorporate a new standard or
8 an updated standard, there is a possibility for
9 unforeseen consequences. Things that were missed, or
10 issues in terms of requirements that were not
11 expected. So there's always that.

12 And, you know, from the NRC point of view,
13 the scheduled time for putting the rule making in
14 place, it's going to be longer for Option C. And cost
15 more than Option B.

16 So that's what the staff thought of as
17 pros and cons. I don't know if anybody in the room or
18 online has any thoughts about one Option versus the
19 other.

20 (No response)

21 MR. RUDLAND: Anybody online?

22 MR. HARDIN: Dave?

23 MR. RUDLAND: Oh, I'm sorry, Tim. I
24 didn't see you.

25 MR. HARDIN: That's all right. Yes, thank

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 you. I just wanted to provide some feedback. This is
2 Tim Hardin from EPRI.

3 After your presentation, initial
4 presentation of this last week at the Industry
5 Materials and Technical Exchange, I mean, we had a
6 call with our member in the materials for liability
7 program. And went over your slides and discussed the
8 various options with the utility members.

9 And the feedback we received from those
10 individuals was that they are supportive of Option B.

11 MR. RUDLAND: Okay. Thank you. May I ask
12 why? Is it because of the cost?

13 MR. HARDIN: Tim Hardin again. It's
14 because of the option, because of the cost. Because
15 of the relative simplicity.

16 And it achieves many of the primary -- it
17 addresses most of the concerns that the members,
18 utility members have in terms of the data reporting
19 and the -- no longer having to test specimens like HAZ
20 specimens, for which there is negligible benefit.

21 MR. RUDLAND: Okay. Great. Thank you.

22 MR. SCHNEIDER: This is Stewart Schneider.
23 So just for the record, that's your industry groups'
24 position. Not your personal position?

25 MR. HARDIN: Correct.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 MR. SCHNEIDER: Okay.

2 MR. RUDLAND: And can you explain one more
3 time what the industry group is that you're referring
4 to?

5 MR. HARDIN: This is Tim Hardin again.
6 The industry group is the Materials and Reliability
7 Program. Which is administered by the Electric Power
8 Research Institute.

9 MR. RUDLAND: Thank you.

10 MR. HARDIN: And that's for PWRs. That
11 group is constituted of members from the Pressurized
12 Water Reactors. And I don't know if the Boiling Water
13 Reactors have had a similar input.

14 MR. PALM: Nathan Palm, EPRI. We didn't
15 have an opportunity to solicit input from the Boiling
16 Water Reactors.

17 MR. RUDLAND: Okay. Thank you. All
18 right, is there anybody else in the room have a
19 comment?

20 (No response)

21 MR. RUDLAND: Anybody online have a
22 comment about pros and cons or opinions?

23 OPERATOR: Yes. There is a question or
24 comment in the queue from Dan Solitz. Your line is
25 now open.

1 MR. SOLITZ: Yes. I don't really have any
2 comments on the cost. I'm not really knowledgeable
3 enough to make those comments. But I am curious as,
4 is it the cost per unit? Or is this the cost for the
5 whole fleet? Or the proposed fleet?

6 MR. RUDLAND: At this -- this is Dave
7 Rudland again. At this point, the costs were based on
8 either a per capsule or per vessel cost.

9 When we do the regulatory -- when we go
10 through the process in coming up with the draft
11 regulatory analysis, I'm not going to speak for the
12 regulatory analysis guys, but I believe it's going to
13 be for the entire fleet.

14 MR. SOLITZ: So have you caused allocated
15 as part of the regulatory requirements? And as part
16 of the fee structure? Or are they passed onto the
17 rate payer after they've been paid to the NRC for
18 these costs?

19 MR. RUDLAND: Yes. Unfortunately I'm not
20 in a position to answer that question. Whether or not
21 the costs are -- the costs from this kind of program
22 are passed to the rate payers or not.

23 And I'm not in a position to answer that
24 question.

25 MR. SCHOFFER: This is Fred Schoffer, the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 Reg Analysis Team Lead. When we do the regulatory
2 analysis, it will calculate the costs associated with
3 implementing these alternatives for the entire fleet.

4 We will be looking at it in terms of when
5 the cost would be incurred. And then do a net or
6 discounting analysis to calculate a net present value.

7 With regard to when we do a cost -- or a
8 regulatory analysis, we're not looking at, you know,
9 how the cost would be, you know, passed onto the
10 public. That's a transfer cost.

11 What we're looking at is the incremental
12 cost associated with the delta between two
13 alternatives. One being status quo versus the
14 alternative under consideration.

15 MR. RUDLAND: Thank you. Are there any
16 other comments or concerns from the phone?

17 We lost sound on the phone. Are those on
18 the phone, are they able to hear? Please put a
19 comment or a question on if you're able to hear.

20 Can the op --

21 MR. SCHNEIDER: Dave, you want to take a
22 break?

23 MR. RUDLAND: Yes. Can the operator hear
24 me?

25 (No response)

1 MR. SCHNEIDER: It's on.

2 MR. RUDLAND: Okay. I suggest that we
3 take a break now. And then we can come back and talk
4 about path forward and stuff.

5 MR. SCHNEIDER: Yes.

6 MR. RUDLAND: So, what did we decide?
7 Like a 15 minute break or a 20 minute break?

8 MR. SCHNEIDER: We had an hour break
9 originally.

10 MR. RUDLAND: Not an hour. An hour break?

11 MR. SCHNEIDER: Hold it. I'm sorry. It
12 was 20 minutes.

13 MR. RUDLAND: Okay. Let's take a 20
14 minute break. So that will put us back at quarter til
15 10:00.

16 (Whereupon, the above-entitled matter
17 went off the record at 9:22 a.m. and
18 resumed at 9:49 a.m.)

19 MR. SCHNEIDER: We're going to start the
20 meeting again. This is Stewart Schneider. I just
21 want to go back to the phone line. Apparently there
22 was an issue with the phone line being cut for a
23 while.

24 I just want to make sure that Mr. Solitz'
25 questions or comment was addressed properly. So, if

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 we can just hear from Mr. Solitz to make sure that he
2 did get a response.

3 MR. SOLITZ: Yes. I did. Thank you. I
4 have an additional question if there's time.

5 I was just wondering how the costs are
6 allocated? Where does the money come from? Where
7 does it go?

8 MR. RUDLAND: I'm sorry. You're talking
9 about the costs for conducting a -- for conducting a
10 surveillance program?

11 MR. SOLITZ: Well, yes. In terms for
12 conducting a surveillance program and taking the data,
13 reviewing the data.

14 MR. RUDLAND: Well, the licensee's costs
15 come from the licensee, from their budgets. And the
16 cost for review and approval is borne on the NRC
17 staff.

18 MR. SOLITZ: Does the cost for the NRC
19 staff come out of the fees too? Go to the fees to the
20 operator?

21 MR. RUDLAND: Yes.

22 MR. SOLITZ: Okay. So the entire cost is
23 borne by the rate payers?

24 MR. RUDLAND: That is correct.

25 MR. SOLITZ: Okay. Thank you.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 MR. RUDLAND: Well, just to point out
2 again, you know, the purpose of this rulemaking is to
3 reduce that burden. So we realize that there are
4 certain things in the basis for this rulemaking that
5 in past history has shown not to be useful.

6 So, we're doing this rulemaking to reduce
7 that burden and eliminate those requirements.

8 MR. SOLITZ: Other operating history of
9 existing reactors?

10 MR. RUDLAND: Pardon me? Can you repeat
11 that?

12 MR. SOLITZ: I say this is based on the
13 entire operating history of existing reactors?

14 MR. RUDLAND: Yes. For the current
15 reactors in service. That's what we're talking about
16 when I talk about the history.

17 MR. SOLITZ: Okay. Thank you. Yes.
18 Thank you.

19 MR. RUDLAND: Okay. So, I think before
20 the break, we got to this point of pros and cons. And
21 we heard from the MRP, Material and Reliability
22 Program, that they -- that feedback was that Option B
23 was the most attractive to them.

24 I just wanted to make it clear that if
25 there folks here that in the next short amount of time

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 do have an opinion, please either speak up now. Or
2 you can send an email to Steward or myself,
3 David.rudland@nrc.gov, with your opinions on these
4 options. If we can go to the next slide.

5 The NRC, going through what we discussed,
6 going through costs to the NRC and schedule for the
7 rulemaking, has recommended to proceed with Option B.
8 Aligned with what the MRP also suggested.

9 And we did that mainly for a couple of
10 reasons. The maximum burden reduction as Tim Hardin
11 pointed out. But also cost and schedule at the
12 rulemaking effort.

13 Option C would be a bit more costly and
14 timely to get that rulemaking effort in place. We
15 feel that they're both -- both options are technically
16 adequate.

17 And for the schedule that we're under now,
18 the NRC is recommending to go through -- go with
19 Option B. And again, from this point forward, our
20 plan then, unless we have strong opinions otherwise,
21 is to move forward with the development of the reg
22 basis and the draft regulatory analysis and the
23 proposed rule language based on Option B.

24 In fact, when we send the draft basis to
25 the Commission, there will probably be only two

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 options. And one option is Option A, which is do
2 nothing. And the option that's chosen through our
3 recommendation here, which will be Option B.

4 Yes?

5 MR. SCHNEIDER: Just to make it clear,
6 this is Stewart Schneider. That when the draft
7 regulatory basis is put out for public comment, it
8 will include the draft preliminary proposed rule
9 language.

10 MR. RUDLAND: Yes. And I made a comment
11 that when we send it to the Commission, but of course,
12 when we send it out for public comment prior to that,
13 it will also have those two options only.

14 And so, I'm again going to plea -- send a
15 plea out for feedback from stakeholders on this
16 decision that was made.

17 It seems that the MRP is okay with that.
18 But I would like other feedback from stakeholders on
19 our recommendation to proceed with Option B.

20 As we move through the summer months, our
21 schedule is such that we the tech staff need to have
22 these draft documents complete in the fall. So that
23 they can go through the approvals to be able to be
24 released for public comment at the first part of 2018.

25 So the sooner we can get stakeholder

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 feedback on this, the better. In addition, if there
2 are opinions or issues with the cost that we've seen
3 here as we develop a more complete regulatory
4 analysis, it would be good to get feedback on the
5 costs.

6 Some of the feedback maybe like Nathan had
7 given us, in terms of the impacts on ISP. To make
8 sure that we can do a relatively appropriate
9 regulatory analysis for the fall also.

10 The slide says, provided in a timely
11 manner. And again, I'll just impress on everyone that
12 our schedule is such that by October we need to have
13 these documents relatively complete so they can begin
14 the concurrence process.

15 So, any feedback needs to come within the
16 next month or so as we are developing that basis. If
17 there's any comments on what we're doing. And to be
18 clear, Option C moving forward will not be included
19 then in the draft basis or draft analysis that will go
20 out for public comment.

21 All right. So now's a good time. Is
22 there any feedback now? Any comments now? I think we
23 can enter the formal question and answer period also.

24 MR. SCHNEIDER: Yes.

25 MR. RUDLAND: So now is the time to enter

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 into formal question and answer session. As Stewart
2 mentioned earlier, I want to limit discussion to what
3 we talked about today in terms of the Appendix H
4 rulemaking effort.

5 We're not going to be talking about any
6 plant specific issues, any plant specific surveillance
7 programs, or anything related to license renewal or
8 subsequent license renewal.

9 So, I will open up the floor to any
10 discussion.

11 (No response)

12 MR. RUDLAND: Don't everybody talk at
13 once. If there are no -- if there's no discussion,
14 that's wonderful. I want to go to the phone also to
15 see if there's any comments, questions, discuss from
16 those on the phone.

17 OPERATOR: Yes. There is a question or
18 comment in the queue from Dan Solitz. Your line is
19 now open.

20 MR. RUDLAND: Okay.

21 MR. SOLITZ: Thank you. Could you
22 elaborate a bit more on Option C, the unintended
23 consequences? If there's any speculation around that?

24 MR. RUDLAND: No. I think that was in the
25 con section. Because whenever we incorporate a new

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 consensus codes and standards, it's a -- there's a
2 possibility for a requirement that's missed in the
3 codes and standards.

4 Or one that it -- that, you know, -- or a
5 recommendation that we didn't expect. The staff is
6 very diligent in making sure those things are not --
7 that does not occur.

8 But, there has been some past history
9 where there has been some unintended consequences in
10 terms of requirements being imposed that were not
11 expected. At this point though, looking through the
12 standards that we have, we don't feel that there's
13 going to be anything like this.

14 But, we needed to include that on our con
15 section. Because there's always that possibility.

16 MR. SOLITZ: Okay. Thank you.

17 MR. SCHNEIDER: To further -- this is
18 Stewart Schneider. To further provide some
19 information on unintended consequences, what we do as
20 rulemakers when we do a new rule, is we look for the
21 nexus and cross-cutting issues that may pertain to
22 other related regulations to make sure there's no
23 impacts there.

24 So that is also part of the process.

25 MR. RUDLAND: Are there any other comments

1 from those on the phone before I bring up the next
2 quick topic I want to discuss?

3 OPERATOR: I'm showing no further comments
4 at this time.

5 MR. RUDLAND: Okay. The only other
6 comment I wanted to make was that the staff is
7 considering a regulatory guide to be associated with
8 this rule.

9 If we go -- as we go down this Option B
10 path, the regulatory guide will be developed to try to
11 take advantage of the -- some of the recommendations
12 that are in the current standard. And include those
13 in a regulatory guide.

14 So, there are -- like I mentioned earlier,
15 the new standard has a lot of good thoughts and
16 recommendations that it's difficult for in rulemaking
17 space for us to include in the rule.

18 And so a regulatory guide would be an
19 appropriate place to do that. Realize that we don't
20 currently have a regulatory guide right now for this
21 rule.

22 It would be a new guide to help us clarify
23 as well as include those recommendations we think are
24 very beneficial. Does anybody have thoughts on that?

25 MR. DeVAN: This is Matt DeVan, AREVA. Do

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 you have a schedule for that reg guide?

2 MR. RUDLAND: Yes. I believe it's in the
3 rulemaking schedule. I'd have to ask Stewart about
4 that.

5 MR. SCHNEIDER: So this is Stewart
6 Schneider again. The way the regulatory guidance
7 works is, at the regulatory basis stage, we don't in
8 this case where there is none, it would not be part of
9 the regulatory basis package.

10 There will be a section which does
11 indicate that guidance documents will be provided, or
12 they will not. It let's the Commission know.

13 However, as part of the schedule, there is
14 a guidance document as part of the schedule, just in
15 case. Now our requirement as part of the process is
16 that the draft guidance be published on the day that
17 the proposed Rule is published, as well as when the
18 final guidance is available, it must also be published
19 with the final Rule.

20 But the regulatory basis will provide that
21 information whether or not there will be a guidance
22 document.

23 MR. RUDLAND: So we'll make that to align
24 with the schedule. We'll make that decision on
25 whether we're going to have a regulatory guide by the

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 time we go out for public comment in January.

2 MR. DeVAN: Thank you.

3 MR. MITCHELL: Dave, can I have a --

4 MR. RUDLAND: Yes.

5 MR. MITCHELL: I'd like to ask a question
6 of our industry colleagues. Would it be a fair
7 understanding that with regard to some additional
8 clarification and recommendations that have developed
9 in the ASTM standard since '82 and are seen in the
10 2016 version, that where those types of
11 recommendations do not conflict or provide additional
12 clarity for '82, for what's written in the '82
13 standard, that it's become essentially standard
14 industry practice when testing these capsules?

15 To do those types of activities that are
16 -- that show up as recommendations in the 2016 version
17 standard? Has standard practice sort of tracked with
18 at least those types of recommendations and reflected
19 in the ASTM standard?

20 So if we put out a reg guide that said,
21 these things that are should's in the 2016 standard
22 that seem to be good practice, and we said, yes, we
23 think you should do this. That that really wouldn't
24 represent a change over what's already currently being
25 done by the industry?

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 MR. HARDIN: This is Tim Hardin. I think
2 it's a case by case basis. And in many cases it would
3 be an increase in burden if you were to recommend it.

4 You should do something that was in a
5 later version. Because I think most of the vendors
6 now, they are attuned to complying with E185-82. And
7 not necessarily implementing a subsequent
8 recommendations.

9 MR. RUDLAND: Well, I think, and Stewart
10 can correct me if I'm wrong. But I think it seems
11 appropriate to as we develop what we want to put into
12 the regulatory guide that we have another public
13 meeting to discuss actually what we don't want.

14 We don't want to increase burden. Right?
15 I mean, from a rulemaking, it should cost nothing.
16 But, I understand the sensitivity that sometimes when
17 a reg guide says should, it --

18 MR. PALM: Yes. This is Nathan Palm,
19 EPRI. I mean, I think, you know, as you look through
20 E2215, you know, there are some things that yes, and
21 industry's certainly doing.

22 And then there's others that, like Tim
23 said, case by case basis. Like thoughts on fracture
24 toughness specimen and things like that. You know,
25 so, you'd have to be careful I guess.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 MR. MITCHELL: And this is Matt Mitchell
2 again from NRO. Yes, and I was thinking some more
3 along the lines of some of the discussion and
4 recommendations like on data and data handling and
5 curve fitting and those types of things which seem to
6 have been refined in E2215 over the years.

7 Versus '82 being in many cases largely
8 silent and just sort of leaving it up to the
9 practitioner, whether those types of refinements have
10 been integrated into the way normal industry practice
11 had developed over the year.

12 MR. PALM: Yes. This is Nathan Palm
13 again. Yes. I think that what you're saying makes
14 sense.

15 MR. RUDLAND: All right. Is there any
16 other discussion on the reg guide? Or is there any
17 other topics that anybody wants to bring to our
18 attention or to talk about at this time?

19 (No response)

20 MR. RUDLAND: Anything on the phone lines?

21 OPERATOR: Yes. There is a question or
22 comment in the queue from Brian Hall. Your line is
23 now open.

24 MR. HALL: Yes, this is Brian Hall with
25 Westinghouse. I would caution on the reg guide.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 Because reg guides can become de facto expectation.
2 And may increase burden.

3 I would also recognize that the labs that
4 do the testing and organizations that build the
5 surveillance programs, are active in the committees.
6 And do know what the current -- most current
7 scientific understanding and best practices are, and
8 try and follow those.

9 And so, for example, new plant
10 surveillance programs include fracture toughness
11 specimens, which is not required. So we are using
12 best practices to the extent possible in both design
13 and testing.

14 MR. RUDLAND: Thank you for that comment.
15 So, just to be clear, if a reg guide says that
16 licensees -- it's recommended that licensees include
17 fracture toughness specimens in their capsules. You
18 would consider that a cost burden?

19 MR. HALL: I understand that a reg guide
20 -- for a guide recommendation is not a requirement.
21 But, changes from those expectations can sometimes
22 require a justification. Which may cost money.

23 MR. RUDLAND: Okay. Thank you. I think
24 we understand. All right. Is there any other
25 comments?

1 (No response)

2 MR. RUDLAND: Okay. Great. Oh, Tim has
3 something, yes?

4 MR. HARDIN: I do have a question. And
5 I'm not sure how to ask it or phrase it. Because it
6 was relayed to me by our members. And you said you
7 don't want to discuss subsequent license renewal.

8 But the concern has been expressed that
9 the rulemaking may create a burden on folks going into
10 subsequent license renewal. And I have not had it
11 explained well to me.

12 But, is there any -- are we able to say at
13 this point if this would increase the burden of this?

14 MR. RUDLAND: The staff are -- yes, the
15 staff has tried really hard to keep those things
16 separate. To make sure that the things that are in
17 the GALL and are -- will be in the SLR-GALL and
18 Appendix H are separate.

19 And that we're not imposing anything in
20 the Appendix H that will impact anything in the future
21 for those. Now, and Al Hiser can correct me if I'm
22 wrong, but I believe the GALLs refer back to Appendix
23 H.

24 So we have to at least make sure that
25 things are consistent. But we're striving to make

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 sure that there's no additional burden from this
2 rulemaking on subsequent license renewals.

3 I think Al has a comment.

4 MR. HISER: Yes. This is Alan Hiser of
5 the NRC. The Appendix H would essentially stay as a
6 40-year surveillance program.

7 Then the GALL and GALL-SLR would be the
8 guidance. Or the recommendations would be used for
9 license renewal and subsequent license renewal.

10 The one area that would be impacted would
11 be the HAZ testing, correlation monitor material
12 testing, things like that. So, the burden reductions
13 would still be introduced and would still apply for
14 GALL or for 60 year and 80 years of operation.

15 But there would be no additional burden on
16 plants. The lead factors and things like that would
17 not be relevant for existing programs.

18 MR. WIDREVITZ: Allen, I just wondered,
19 could you address reconstitution as well? Or did I
20 just do it?

21 MR. HISER: I'm not sure what perspective.

22 MR. WIDREVITZ: So, I want to add to what
23 Allen -- I'm sorry, this is Dan Widrevitz. I wanted
24 to add to Allen's comment.

25 One aspect that might be of particular

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 interest for license renewal conditions is, if you
2 find yourself in a situation where you have to
3 reconstitute a capsule. According to Appendix H, you
4 might say that it implicitly covers this.

5 We would like to explicitly cover it in a
6 manner that does not conflict with GALL in any way.
7 That supports users so that they have an explicit
8 guidance on how to go about reconstitution.

9 Because right now, it's open to
10 interpretation. And we don't want to make that
11 difficulty. That was not something the original
12 Appendix H addressed at all really.

13 So we wanted to make sure that that was
14 clear as to well, what do you do when you've got to
15 reconstitute? Where do you go? Do you -- you know,
16 what is your code of record? And what has to be in
17 there? And how does that all work?

18 So we wanted to be a little -- one of our
19 -- something that if you go through this slide V, we
20 sometimes were very careful about saying things like
21 existing and reconstituted.

22 That's why we want to make sure that that
23 becomes explicit and not merely implicit in Appendix
24 H. What to do when you have to reconstitute a
25 capsule.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 MR. PALM: This is Nathan Palm, EPRI. So,
2 if I understand correctly, you're saying that an
3 additional change to Appendix H that you're
4 considering is to have explicit requirements for
5 reconstitution of capsules?

6 And I ask, I mean, I -- so and that wasn't
7 something that was discussed in the presentation.
8 When might we see some details about what you're
9 thinking?

10 MR. RUDLAND: So this is Dave Rudland
11 again. I think what Dan is mentioning is what, you
12 know, what needs to be in a reconstituted capsule.

13 So, if you go back to the slides where we
14 talk about Option B, which are 16 and 17, 18, 19, all
15 the way up to 20, you'll see were -- you'll see that
16 it says, for instance so if you reconstitute a
17 capsule, you don't need to include HAZ.

18 So, even though your original code of
19 record may say you have to have the HAZ in there, if
20 you reconstitute, you don't have to put it in. Right?
21 You don't have to test specimens that are --

22 MR. HISER: This is Allen --

23 MR. RUDLAND: That are in existing
24 capsules.

25 MR. HISER: Sorry. Sorry to interrupt. T

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 his is Allen Hiser of the NRC. One of the questions
2 we posed to our -- or to OGC, to our lawyers was, if
3 a plant wanted to re -- build a new capsule with
4 reconstituted specimens, what were the rules?

5 And what we were told was, whatever the
6 standard of record for the plant was. So if they were
7 an '82 plant, then they would have to construct their
8 capsule consistent with '82.

9 So including HAZ, correlation monitoring
10 material, other things that were included in the '82
11 standard. And this is intended to provide a little
12 bit more flexibility than HAZ, the things that we
13 think are no longer necessary, can be excluded.

14 So, it wouldn't require an exemption or
15 any other kind of approval by the NRC, is the goal
16 that we were shooting at.

17 MR. RUDLAND: Right. But I don't think
18 they meant to have requirements on how to reconstitute
19 specimens and things like that. It was more about
20 inclusion of certain specimens in.

21 MR. PALM: Yes. Nathan Palm again. Yes,
22 it sounds -- so, it's more a matter of making the
23 language more clear and specific.

24 MR. RUDLAND: Especially for those
25 particular capsules. Because it's not explicitly

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 talked about in '82.

2 MR. HISER: And I think it's to fill a gap
3 right now. Because it really doesn't address it. And
4 so we're left with legal interpretations.

5 And this way we make it explicit so that
6 the staff knows, the public knows, and the utilities
7 know as well.

8 MR. PALM: All right. Thank you.

9 MR. RUDLAND: Okay. One last call for
10 comments. I've got a couple of action items I want to
11 go over near the end. I have one last call for
12 comments in the room?

13 (No response)

14 MR. RUDLAND: On the line? On the phone
15 line?

16 OPERATOR: I'm not showing any comments at
17 this time.

18 MR. SCHNEIDER: And the webinar.

19 MR. RUDLAND: And the webinar. Okay. All
20 right, so I think you have concluding remarks?

21 MR. SCHNEIDER: Yes.

22 MR. RUDLAND: Okay. But let me go over
23 the action items. I had two things that I need to
24 make sure that I and the staff follow up on.

25 One is to revisit the elimination of

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 tensile testing as part of the Option B -- part of
2 Option B. So, I'll take it upon the staff to relook
3 at that as we move forward.

4 The other was costs for ISP. And so we'll
5 take the action again, maybe, to touch base outside of
6 this forum to talk about cost incurred for ISP.

7 Those are the only two actions that I had.
8 Again, I just want to put out a call for if there are
9 comments that you want to send to me or to Stewart on
10 either the basis or the cost, please do so in a timely
11 manner.

12 And that's all that I have.

13 MR. SCHNEIDER: Okay. So now we'll wrap
14 it up. Just a few things if we go to the slide, were
15 to find information.

16 So there's a government-wide website
17 called regulations.gov. Which tracks all rulemaking
18 products. We at the NRC use docket numbers.

19 Unfortunately we don't have a docket
20 number right now for this activity. That number will
21 be provided in the meeting summary, which will be
22 issued no later than 30 days after today's meeting.

23 Just a little bit about regs.gov, it will
24 contain all the documents that are publically
25 available with respect to this rulemaking activity.

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 And -- such as the meeting transcript, the meeting --
2 summary of this meeting, and any supporting documents,
3 SECY papers, whatever.

4 And eventually it will have the reg basis,
5 the Federal Register Notice announcing the issuance of
6 the regulatory basis as well as public comments will
7 be stored here.

8 So, one other important thing is you can
9 sign up for automatic email alerts. Every time we
10 load a new document up there, you'll receive an email
11 alert.

12 And to do so, to keep up to date on the
13 rulemaking related activity, you just sign up for the
14 email alert. You open the docket folder once you have
15 the docket number, and click the link to sign up for
16 email alerts.

17 The meeting summary will also be available
18 on our public website. So, what I will do, is if you
19 leave your email address, I can send out an email
20 blast once we have the docket number. This way there
21 wouldn't be any confusion, where is the meeting
22 summary or whatever.

23 Additionally, as I mentioned earlier, we
24 have the feedback forms in the back. If you would
25 fill one out, we'd appreciate that so we would know

NEAL R. GROSS

COURT REPORTERS AND TRANSCRIBERS
1323 RHODE ISLAND AVE., N.W.
WASHINGTON, D.C. 20005-3701

1 how to improve our process.

2 We apologies for the issues with the phone
3 line this morning. But we hope everyone was -- all
4 your comments and issues were answered.

5 We do have a QR code. So, if you know how
6 to use it, if you take a picture of this, it will
7 directly link you to the meeting feedback form. And
8 that feedback form should be available after today.

9 So, it was not available prior to today.
10 You didn't see it up on the meeting site. It should
11 be there next, within the next day.

12 And finally, on the last slide, I provided
13 my contact, phone number and email. As well as David
14 Rudland's phone number and contact email.

15 If you have a regulatory issue you'd like
16 to discuss, rulemaking process or how we develop the
17 documents, you can contact me. With respect to
18 technical issues, you can contact David Rudland.

19 So, is there any other questions someone
20 may have as far as the process or finding information?

21 (No response)

22 MR. SCHNEIDER: Anyone on the line?

23 OPERATOR: I'm not showing any questions
24 at this time.

25 MR. SCHNEIDER: Okay. One final thing.

1 If you haven't yet, please sign the attendance sheet
2 in the back. And thank you for attending today's
3 meeting. And have a great day. This concludes our
4 meeting.

5 (Whereupon, the above-entitled matter went
6 off the record at 10:18 a.m.)

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25