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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

(ACRS)

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RELIABILITY AND PRA SUBCOMMITTEE

+ + + + +

WEDNESDAY

SEPTEMBER 4, 2013

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ROCKVILLE, MARYLAND

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The Subcommittee met at the Nuclear
Regulatory Commission, Two White Flint North, Room T2B3,
11545 Rockville Pike, at 1:00 p.m., John W. Stetkar,
Chairman, presiding.

SUBCOMMITTEE MEMBERS:

JOHN W. STETKAR, Chairman

J. SAM ARMIJO, Member

RON BALLINGER, Member

DENNIS C. BLEY, Member

CHARLES H. BROWN, JR. Member

MICHAEL CORRADINI, Member

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1 HAROLD B. RAY, Member
2 JOY REMPE, Member
3 PETER RICCARDELLA, Member
4 MICHAEL T. RYAN, Member
5 STEPHEN P. SCHULTZ, Member
6 GORDON R. SKILLMAN, Member

7

8 NRC STAFF PRESENT:

9 JOHN LAI, Designated Federal Official
10 BOBY ABU-EID, FSME/DWMEP
11 JOHN ADAMS, NRR/DPR
12 MICHEL CALL, NMSS/DSFST
13 MARK CARUSO, NRO/DSRA/SPRA
14 GARY DEMOSS, RES/DRA/PRB
15 MARY DROUIN, RES/DRA/PRB
16 RICHARD DUDLEY, NRR/DPR/PRB
17 STEVEN LAUR, NRR/DRA/APLA*
18 JOSEPH RIVERS, NSIR/DSP

19

20 *Participating via telephone

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

3 1:15 p.m.

4 CHAIRMAN STETKAR: Meeting will now come
5 to order. This is a meeting of the Reliability and PRA
6 Subcommittee. I'm John Stetkar, Chairman of the
7 subcommittee meeting.

8 ACRS members in attendance are Ron Ballinger,
9 Dick Skillman, Steve Schultz, Dennis Bley. I don't know
10 whether -- I think we'll be joined by Harold Ray.

11 MEMBER ARMIJO: Yes, he'll be here shortly.

12 CHAIRMAN STETKAR: Sam Armijo, Mike Ryan,
13 Pete Riccardella. Don't know -- probably Charlie Brown.
14 Not sure yet. Joy Rempe and Mike Corradini. John Lai,
15 of the ACRS staff, is the designated federal official
16 for this meeting.

17 The Subcommittee will hear the staff's plan
18 for issuing a policy statement regarding the
19 Risk Management Regulatory Framework.

20 There will be a phone bridge line. To
21 preclude interruption of the meeting the phone will be
22 placed in a listen-in mode during the presentations and
23 committee discussions.

24 We received no written comments or requests
25 for time to make oral statements from members of the

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1 public regarding today's meeting. The entire meeting
2 will be open to public attendance.

3 The Subcommittee will gather information,
4 analyze relevant issues and facts and formulate proposed
5 positions and actions as appropriate for deliberation
6 by the full committee.

7 Rules for participation at today's meeting
8 have been announced as part of the notice of this meeting
9 previously published in the *Federal Register*.

10 A transcript of the meeting is being kept
11 and will be made available as stated in the *Federal Register*
12 notice. Therefore, we request that participants in this
13 meeting use the microphones located throughout the meeting
14 room when addressing the Subcommittee. The participants
15 should first identify themselves and speak with sufficient
16 clarity and volume so they may be readily heard.

17 I'd by the way thank the staff for your
18 indulgence on delaying the start of the meeting. It's
19 one of those days where there are just too many things
20 going on at once. So I appreciate your patience with
21 us.

22 We'll now proceed with the meeting and ask
23 Gary Demoss, do you have anything you'd like to say?

24 MR. DEMOSS: Very briefly. Thank you, guys,
25 very much for hearing this issue. You don't see a lot

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1 of managers from the Office of Research because this
2 isn't an Office of Research project. This is a staff-wide
3 project. We are simply the facilitators and my branch
4 and my division of research are available to support
5 Mary Drouin's -- Mary Drouin led efforts on RMRF. So
6 thank you much.

7 CHAIRMAN STETKAR: Thanks. Mary, it's all
8 yours.

9 MS. DROUIN: Okay. Thank you. This is the
10 first meeting we've had with ACRS Subcommittee on this
11 effort, and we look forward to it and many more as we
12 move forward on this effort.

13 We gave you a list of acronyms, but -- oh,
14 I have the controls. I think I have the controls. There
15 we go. Okay. You know, we're here to review, you know,
16 on the status of our effort, where we're at and our plans
17 for soliciting public comments and to solicit your
18 feedback, specifically how do we want to go about doing
19 that.

20 Now, I'm on slide 5. In June 14th of 2012
21 Chairman Jaczko sent out a tasking memo that requested
22 the staff to review 2150, NUREG-2150 and to provide
23 recommendations, and that we should seek stakeholder
24 input.

25 As a result of this tasking memorandum a

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1 working group was formed of staff from each of the program
2 offices. From the Office of Research working with me
3 is Brian Wagner, Richard Dudley from NRR and John Adams
4 from NRR. He's back in the audience. You'll hear from
5 him today. Dennis Damon and Michel Call from NMSS, Joseph
6 Rivers and Randy Sullivan from NSIR, Mark Caruso and
7 William Reckley from NRO, Boby Abu-Eid from FSME and
8 Geary Mizuno from OCG. So as you can see from here we,
9 you know, have -- all the various offices are engaged
10 in this activity.

11 And we also have a steering committee that
12 we report to. It is not the JLD Steering Committee.
13 It was a steering committee put together specifically
14 for this effort and it is comprised of the deputy office
15 directors. And we've already had several briefings with
16 them.

17 Now in looking at, you know, NUREG-2150,
18 this document here, when you go through it there are
19 over 50 recommendations to the staff in this document.

20 And they're what I call -- they're kind of in a hierarchical
21 order in the sense that there is recommendations that
22 cut across the agency. And that one is to adopt a Risk
23 Management Regulatory Framework through a policy
24 statement. And they talk specifically to what they mean
25 by that policy statement.

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1 Then the document goes through each program
2 area and provides recommendations of how to implement
3 this policy statement via different rulemakings, guidance
4 developments, etcetera. So you will hear about today
5 both of these. So, you know, the document we sent you
6 was a work-in-progress; is the best way I know how to
7 capture it, of a policy statement, which is addressing,
8 you know, that first sub-bullet. But we're also going
9 to talk to you, you know, what our thoughts are for each
10 of the program areas for the recommendations, you know,
11 that were made for power reactors, operating reactors,
12 new reactors or transportation for high-level waste.
13 So we're going to go through all of that also today.

14 MEMBER RAY: Mary, is this a precedent for
15 a federal agency, do you know? Is there anybody else
16 doing anything like this in the Federal Government?

17 MS. DROUIN: We do talk a little bit about
18 this, about that there are other agencies that are doing
19 -- you know, they may use different words, but they do
20 use a lot of the concepts that are in 2150 regarding
21 risk management. We don't go into it a lot of detail.
22 2150 does talk about it. And I just sat in on a briefing.
23 NASA. I believe it was NASA who did the brief.

24 MR. DEMOSS: The FDA briefing.

25 MS. DROUIN: FDA. Who has gone out and done

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1 a survey among different agencies and what are they doing
2 in this area? And I sat in on that briefing and got
3 a lot of insights of what other agencies are doing.

4 MEMBER RAY: Okay. So you have that
5 awareness?

6 MS. DROUIN: Yes.

7 MEMBER RAY: And that's the basic --

8 MS. DROUIN: We're aware what other agencies
9 are doing and we have looked to see what's happening
10 on the international level.

11 So in initiating this effort, you know, we
12 had briefings with our steering committee and with the
13 deputy office directors. And the direction we had for
14 this effort is that we would not contain options, you
15 know, because our initial thought is that, you know,
16 option -- you know, the first option of course is, you
17 know, the status quo. And then here's option 2, pros
18 and cons. Here's option 3, etcetera.

19 They wanted us to be more forward thinking
20 and to actually develop a draft work-in-progress
21 conceptual policy statement so that -- you know, because
22 we are recommending that a policy statement be issued,
23 but we want to give them a draft so that they have an
24 idea when we're talking about it, you know, what is it
25 that we're talking about. And then we would receive

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1 approval from the Commission to move forward. And at
2 that point we would take that draft and start issuing
3 it for formal public review and comment.

4 The analogy I can give is like when we would
5 develop a Regulatory Guide. You know, we develop it,
6 we send it out informally for public review and comment,
7 and we have a lot of interaction with the public. And
8 then when we're happy with it, we then issue it as a
9 formal draft for formal public review and comment. So
10 we're in that pre-stage of developing and starting to
11 solicit stakeholder input, etcetera.

12 CHAIRMAN STETKAR: Mary, as you go through
13 the material this afternoon, just kind of a preliminary
14 thought -- you know, we had the meeting this morning
15 on NTF recommendations. And if there are areas as you
16 go through your presentation that would help us to a
17 little bit better understand where there's overlap or
18 where these activities intersect or -- I'm not quite
19 sure what the word is to use. The example that came
20 up this morning was issuance of a policy statement under
21 NTF Recommendation 1 regarding defense-in-depth, but
22 yet restricted only to power reactors where the -- my
23 understanding is the RMRF would span all of the regulated
24 activities.

25 MS. DROUIN: Yes.

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1 CHAIRMAN STETKAR: So if you can kind of
2 keep that in mind and --

3 MS. DROUIN: I will --

4 CHAIRMAN STETKAR: -- it will help us a little
5 bit through that, where those intersections are. I know
6 it would help me a little bit.

7 MS. DROUIN: Right. Just be aware that those
8 lines are still fuzzy.

9 CHAIRMAN STETKAR: That's probably why we're
10 fuzzy.

11 MS. DROUIN: Yes, and why we're fuzzy also.

12 CHAIRMAN STETKAR: Yes.

13 MS. DROUIN: So our SECY paper would contain
14 two products: It would contain this conceptual policy
15 statement, but it would also contain a high-level
16 discussion that would summarize, you know, our response
17 to all the individual program area recommendations.
18 And when I say "a high level," it would identify do we
19 agree with this recommendation and if we plan to pursue
20 it, you know, a high-level discussion of what that would
21 be, a high-level discussion on what the resources would
22 entail and how long it would take. Because we would
23 not take the time to develop a detailed plan until the
24 Commission said, okay, you know, NMSS, I want you to
25 pursue that.

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1 CHAIRMAN STETKAR: We have a lot of slides
2 here, but that's the other area that I wanted to understand
3 a little bit, because as I read through the draft material
4 that we received from you, in some areas it seemed to
5 be delving down to that next level of detail where you're
6 starting to flesh out high-level guidance. Maybe I'm
7 misinterpreting some of the stuff that was written there,
8 but I was trying to understand, you know, where are the
9 lines of demarcation, if there are, between what you're
10 issuing in terms of the policy statement and background
11 material versus, for lack of a better term, implementation
12 guidance or sort of a framework for supporting regulatory
13 guidance?

14 MS. DROUIN: Right. Okay. So our proposed
15 scope in responding to the RMRF. Again, the policy
16 statement would establish what we think should be the
17 Commission's expectations across the entire agency.
18 So it's not just focused on reactors and safety. It's
19 across the entire agency and it focuses on both safety
20 and security.

21 A major emphasis, a major element of the
22 policy statement would be defense-in-depth. And then
23 we would have a high-level -- for lack of a better word,
24 I still just use the word "plan," you know, that would
25 address each program area those recommendations that

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1 we think should be pursued.

2 The basis for those that we don't think should
3 be pursued, you know, we will discuss that in the SECY
4 paper. For example, we don't think recommendation X
5 should be pursued. We would state that in the SECY paper
6 with the basis for it.

7 The working group also will not address those
8 areas not included in 2150. So for example,
9 decommissioning, you know, we're not going to be looking
10 into. Areas not included in the plan, you know, we will
11 discuss that. You know, we will tell the commission
12 we're not pursuing these things.

13 Okay. Our proposed approach to the policy
14 statement. You know, some of this you have heard this
15 morning, because it's the same approach. You know, we're
16 using all that thinking that was done for NTTF. So,
17 you know, we are talking about that it would still be
18 developed in this hierarchical, you know, top-down way
19 starting at the very high level and, you know, what is
20 the mission and goal, etcetera? And the purpose of that
21 is to, you know, achieve some consistency across the
22 agency on the various program areas. So we would end
23 up developing a generic RMRF and a defense-in-depth policy
24 for the entire agency.

25 And this is just a visual. I think sometimes

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1 a picture is worth 1,000 words. So when we talk about
2 this proposed policy statement, this is what we're looking
3 at. So the policy statement would start at this high
4 level, you know, and talk about, you know, the mission,
5 the objective, the defense-in-depth part and the decision
6 making process. And that would lead down into, you know,
7 more detail in the policy statement where it would, you
8 know, provide what is the overall generic statement on
9 defense-in-depth, providing a definition, objectives
10 and principles, what should be the levels of defense,
11 and talk about decision criteria.

12 You know, at the same time it would give
13 the overall policy statements on the decision process.

14 And there were actually only six elements identified
15 in 2150 which was identify the issue, identify options,
16 analyze, deliberate, implement and monitor. We added
17 communication to that as one of the elements of the decision
18 making process. You know, it was buried in all of these,
19 but we thought it was important enough that it should
20 be highlighted as its own element, even though it does
21 interface, you know, throughout all the various elements.

22 MEMBER CORRADINI: So, a few slides before
23 you noted that what we heard this morning and what we're
24 hearing now there's a fuzzy linkage. So which one
25 encapsulates which one? Does this conceptual framework

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1 encapsulate the three activities you're proposing from
2 this morning? Are they examples? Are they practical
3 examples of this?

4 MS. DROUIN: There's an overlap in two of
5 the improvement activities on NTTF1, Improvement Activity
6 1, which gets into, you know, the design basis extension
7 category. There are recommendations in 2150 that talk
8 about developing, you know, a categorization process,
9 etcetera. That was examined by NTTF Working Groups and
10 that recommendation was decided not the way to go. So
11 in RMRF we are not going to come back and say NTTF was
12 wrong. So we are going to adopt, you know, the
13 recommendation from NTTF for that part of those
14 recommendations in RMRF.

15 I see a frown.

16 MEMBER CORRADINI: Can I say it back to you
17 to make sure I -- well, let me restate my question based
18 on what -- I guess I looked upon what we heard this morning
19 that Improvement Activity 1 and Improvement Activity
20 2 could be mapped into this as examples. And so that's
21 an observation. It's probably wrong. You'll tell me
22 it's wrong. But I would assume there ought to be a
23 connection and the connection ought to be there somehow.

24 MS. DROUIN: Okay. Let me try and answer
25 it this way: NTTF Recommendation 1 is recommending that

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1 something be pursued. Okay. So in Improvement Activity
2 1 that something to be pursued is this categorization.
3 I'm just going to call it categorization.

4 MEMBER CORRADINI: Yes, that's fine.

5 MS. DROUIN: Okay.

6 MEMBER CORRADINI: We'll call it binning
7 for want of a better --

8 MS. DROUIN: Or binning. Whichever we want
9 to call it. Okay. Now 2150 has a set of recommendations
10 for reactors that says you should go look at binning.

11 So as I said, we are going through each program area
12 and addressing those recommendations and whether or not
13 we think they ought to be pursued, and if they ought
14 to be pursued, a high-level discussion of what we would
15 do. So for those recommendations what we would do would
16 be what is coming out of NTTF.

17 So NTTF, you know, may be saying I need to
18 be doing binning activity. I'm going to bin by using
19 approach X. But RMRF said I want you to do binning,
20 you know, using approach Y. Well, we're going to say
21 we don't agree with approach Y, but we're going to do
22 the binning using approach X, as discussed.

23 MEMBER BALLINGER: But you are saying that
24 you're going to do binning.

25 MS. DROUIN: Yes.

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1 MEMBER BALLINGER: So shouldn't RMRF
2 circumscribe the NTTF process? In other words, they
3 shouldn't be inconsistent with one another.

4 MS. DROUIN: That's what I'm saying.

5 MEMBER BALLINGER: And the high-level one
6 should set the sort of overall goal and rules, but the
7 Near-Term Task Force Recommendations should fit within
8 that and not be inconsistent with that.

9 MS. DROUIN: That's exactly what's
10 happening.

11 CHAIRMAN STETKAR: Well, but let me give
12 you an example here, because it's what I've been concerned
13 about. If the Commission adopts the first
14 -- I always get the words wrong -- enhancement, whatever
15 you're calling it.

16 MEMBER BALLINGER: Improvement Activity.

17 CHAIRMAN STETKAR: Improvement Activity.
18 Thank you.

19 MS. DROUIN: Binning.

20 CHAIRMAN STETKAR: It's got its own --
21 (Laughter.)

22 CHAIRMAN STETKAR: Binning. But adopts it
23 in the sense that it's presented -- that we heard this
24 morning. In other words, it's an event-driven process.
25 If something happens, we now have a box to throw that

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1 event in and now we understand from a rulemaking regulatory
2 perspective how to deal with that event. That's a way
3 to populate that box. That way to populate the box,
4 at least in my understanding, is a different way from
5 populating the box, presuming we define the box the same
6 way, as is proposed in NUREG-2150.

7 MS. DROUIN: That is correct.

8 CHAIRMAN STETKAR: NUREG-2150 says use a
9 different process, let's say.

10 MS. DROUIN: Correct.

11 CHAIRMAN STETKAR: And what I hear you saying
12 is that if the Commission adopts the Improvement Activity
13 1 as it's written in NTTF -- that part of the organization,
14 that will subsume anything -- you then as the RMRF group
15 will say, okay, that's the way it's going to be done.

16 MS. DROUIN: That's correct.

17 CHAIRMAN STETKAR: So that sounds somewhat
18 backwards.

19 MS. DROUIN: Well, okay. But back up. The
20 Chairman's tasking memo said to NTTF to take into account
21 the recommendations in 2150. So when you read the
22 enclosures in NTTF Recommendation 1, there is a discussion
23 of why NTTF decided not to adopt what 2150 -- why we
24 disagreed with it.

25 CHAIRMAN STETKAR: And a lot of those

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1 arguments tend to be resource focused. Immediate
2 resource focused.

3 MS. DROUIN: Well, I mean you can, you know,
4 agree or disagree, but I'm just saying, you
5 know --

6 CHAIRMAN STETKAR: No, what I'm concerned
7 about is that the Commission pretty clearly understands
8 this, because it sounds like by accepting the first
9 off-the-block, the NTTF Recommendation 1 proposals, they
10 are foreclosing options that for later -- that wouldn't
11 be considered now under the RMRF. In other words, there
12 will be a box, but how one thinks about populating that
13 box is now off the table. And so I hope the Commission
14 understands that.

15 MEMBER SCHULTZ: Unless the NTTF pieces fall
16 into the lower two boxes, the defense-in-depth and the
17 decision process.

18 CHAIRMAN STETKAR: Right.

19 MEMBER CORRADINI: Yes, so if I could come
20 back --

21 MEMBER SCHULTZ: It has to match up
22 somewhere.

23 MEMBER CORRADINI: Yes, I guess if I come
24 back to my original question, this is all very -- you
25 say fuzzy. I'll call it mushy. This is all very hard

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1 to get my hands around, but it would seem to me a logical
2 way to do this, but your management may not like this,
3 is, okay, we'll declare partial -- I don't want to declare
4 victory, but we will declare a partial victory that your
5 Improvement Activity 1 and Improvement Activity 2 is
6 a first-round approach at this. It's not the nth round,
7 but it's a first-round approach at this and there's more
8 to come.

9 I guess I would agree with John that the
10 Improvement Activity 1 and 2, at least 1, seems reactive.

11 This looks proactive. So to the extent that what you
12 presented this morning is step 1 of a multi-step process,
13 I could buy into it. But it seems it's got to fit within
14 this somehow. Otherwise, if I were the outside world,
15 if I -- let me put it to you in the -- if I have to teach
16 my students what we do in the NRC about how we do
17 risk-informed regulatory framework, they'd be a tad
18 confused. Just a tad. Right? So and I would think the
19 utilities, the licensees would be the same way.

20 So it just seems to me this is an overarching
21 structure. What we saw this morning fits into it. It
22 may be step 1 because of resources, because of time,
23 because of whatever, but more might follow. At least
24 that's my interpretation of how I would put the pieces
25 together. Kind of like what Ron was asking.

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1 MS. DROUIN: Let me try and answer --

2 MEMBER BALLINGER: I don't see how it could
3 be any other way and not be internally inconsistent.

4 MS. DROUIN: Yes, well, let me try and answer
5 it. I mean all the questions you're asking are questions
6 we've raised. Now there are several questions you need
7 to ask. Is there and should there be a relationship
8 between the various program offices or can you do this
9 for each program office independent of each other? So
10 that's the first thing. Can you deal with
11 defense-in-depth for reactor separate from worrying about
12 for other program areas?

13 CHAIRMAN STETKAR: For the purpose of -- that
14 I view as a dodge. So let's get back to --

15 MS. DROUIN: Well --

16 CHAIRMAN STETKAR: Let's just think about
17 operating reactors. That issue does exist, but let's
18 just keep --

19 MS. DROUIN: Okay.

20 CHAIRMAN STETKAR: -- the current discussion
21 --

22 MS. DROUIN: Then that's --

23 CHAIRMAN STETKAR: -- in the context of
24 operating reactors.

25 MS. DROUIN: -- my next part.

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1 CHAIRMAN STETKAR: Okay.

2 MS. DROUIN: Then my next part is, okay,
3 let's just say we can go off and think about reactors
4 on its own. So then what NTTF is doing is saying, okay,
5 I've looked at all these various approaches that have
6 been proposed. There is an approach proposed in 2150.
7 You know, there's approach proposed in 1860. There's
8 other approaches. And we've evaluated all these various
9 approaches and we have decided for various reasons that
10 this approach is the way we want to go. So all that
11 thinking and evaluation has been done.

12 So what we are doing now in 2150, saying,
13 okay, you all have evaluated all of this. So now what
14 we're going to describe is how is that going to happen?

15 Because NTTF is not doing any of the work. They're
16 just saying, okay, we want you Commission to approve
17 this approach. Now, 2150 paper is going to come in and
18 say, okay, given, you know, that this approach is approved,
19 here's what it would entail. So, you know, there
20 is a link, a hard link between the two. All I'm saying
21 is that we are not going to reevaluate, you know, the
22 merits of those recommendations, because the merits of
23 that approach were evaluated under NTTF. You know, I
24 mean we're going to evaluate the merits of all the various
25 recommendations for all the program areas. You know,

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1 and as I said, there may be recommendations in 2150 and
2 other program areas. We don't agree with 2150. We don't
3 think it should be pursued or we think it should be purposed
4 a different way. This has just already been done for
5 us under NTTF Recommendation 1.

6 MEMBER BLEY: In all this discussion, when
7 you're talking NTTF, you're talking Recommendation 1,
8 right?

9 MS. DROUIN: Yes.

10 MEMBER BLEY: Okay.

11 MS. DROUIN: Yes. So and it's the same set
12 of people, you know, on both of them.

13 MEMBER CORRADINI: We got that impression.

14 (Laughter.)

15 MEMBER CORRADINI: You guys look awful
16 familiar to me.

17 MEMBER SCHULTZ: So, Mary, you started
18 talking about defense-in-depth, and I'm hoping that you
19 did because what we talked about this morning with regard
20 to defense-in-depth appears very nicely to fit in the
21 green box on this slide.

22 MS. DROUIN: Yes.

23 MEMBER SCHULTZ: Because the elements are
24 -- it's pretty much identical. Now in terms of like
25 the process side, on the decision process the connection

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1 between the other part of the discussion we had this
2 morning, it's not so clear that approval by the Commission
3 of the SECY document to be issued in December is going
4 to mesh nicely with this piece. I presume your intent
5 is that it will.

6 MS. DROUIN: Okay. We used to have another
7 figure here, and maybe I should have brought it to show
8 what our earlier thinking was. But this blue box used
9 to be expanded and there used to be a box that came from
10 the overall generic statement on defense-in-depth into
11 the various different program areas.

12 MEMBER SCHULTZ: Yes.

13 MS. DROUIN: And so part of the policy
14 statement would go to the next level and would include
15 -- would provide these things same things, the definition,
16 objective, principles, all of that specific for each
17 program area.

18 MEMBER SCHULTZ: Right, reactors being one.

19 MS. DROUIN: Reactors being one. Now what
20 has happened is that our scope of our work has been
21 shortened, or abbreviated, and that now the program
22 area-specific defense-in-depth parts will not be
23 developed at this point in time. And that they reactor
24 part is perhaps go on its own path. I mean it's
25 -- management has decided to decouple it.

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1 I don't know if you want to add something,
2 Gary?

3 MR. DEMOSS: No, I think that's simple in
4 a nutshell.

5 MS. DROUIN: And, you know, there's pros
6 and cons to it.

7 MEMBER BLEY: So the way you're headed now
8 is there would be area-specific defense-in-depth, but
9 a single policy on decision process?

10 MS. DROUIN: The way we're heading now there
11 -- well, and you all have a copy of the draft we proposed.
12 And when you read it, you know, there is a discussion
13 in there of these three boxes. You know, it talks at
14 a high level, you know, what is an overall policy statement
15 on risk management. And then it talks about, you know,
16 the overall generic policy. You know, it gives an overall
17 policy statement on the decision making process and it
18 talks about these seven things. And then it talks about
19 what is the role of defense-in-depth. And that is all
20 talked about across the entire agency. So that's the
21 proposal we have right now.

22 MEMBER BLEY: See, what I'm struggling with
23 -- and probably I'm just being dense or I don't understand
24 the words or something. I read through your document.
25 The document seemed to make a lot of sense.

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1 MS. DROUIN: I don't disagree.

2 (Laughter.)

3 MEMBER BLEY: That's the last, you know,
4 praise you'll hear from me.

5 (Laughter.)

6 MEMBER BLEY: No, it made a lot of sense
7 because it's -- I read it as applying to the entire agency
8 and everything that the agency does. And it seemed to
9 make sense. It says, you know, when we implement this
10 basic policy, this basic framework, whatever you want
11 to call it, yes, we might need to think about it a little
12 bit differently when we implement it for, you know, nuclear
13 medicine materials compared to operating reactors. Yes,
14 that makes sense.

15 But now I'm hearing, well, gee, we might
16 have 15 different policy statements because management
17 has decided that we're only going to focus today on only
18 defense-in-depth for only operating reactors. And if
19 that's the case, I don't know what we're doing.

20 So maybe I'm not understanding what I'm
21 hearing compared to what I'm reading, because what I
22 read sounded a lot more encompassing than what I'm hearing
23 today orally.

24 MR. DUDLEY: Well, you know, one approach
25 that we might be able to do with the power reactor

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1 defense-in-depth policy statement is to write it at a
2 high enough level and then that it could potentially
3 apply to other program offices, but then get the specifics
4 in subordinate documents such that the whole thing would
5 be called the power reactor defense-in-depth policy
6 statement, but yet the details which were specific to
7 power reactors might be a lot different than what you
8 would use if you applied that overall approach to the
9 other program areas. And so maybe, you know, that's
10 an approach that I think we'd consider.

11 CHAIRMAN STETKAR: See, that's the way I
12 read the document that we received, sort of from that
13 framework, from that perspective. I mentioned earlier,
14 parts of it I thought got into a little bit too much
15 detail from my perspective of what a policy statement
16 or a proposed policy statement and its supporting
17 information might need.

18 MS. DROUIN: Well, another option -- I don't
19 advocate it, but another option could be is that this
20 green box gets removed.

21 PARTICIPANT: No.

22 PARTICIPANT: No.

23 MS. DROUIN: You know, that's -- but I don't
24 advocate it.

25 CHAIRMAN STETKAR: I think you're hearing

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1 from us is that we're -- at least from me, is that we're
2 advocating for policy statements that are more global
3 and are not exclusionary or not focused down so small
4 that you need 15 different policy statements for 15
5 different applications in only defense-in-depth and then
6 a couple of different policy statements for how you
7 interpret risk management of design basis events or beyond
8 design basis events for 15 different applications.

9 MS. DROUIN: Well, I will tell you in -- where
10 we are with this policy statement, if I was now asked
11 to write a policy statement on defense-in-depth for
12 reactor safety, I'm not sure what I would do that's any
13 different from what's been written here. And I think
14 the real question that people are trying to answer it's
15 not a policy statement they're looking for in trying
16 to resolve their problems. It's the implementation
17 guidance.

18 CHAIRMAN STETKAR: Yes.

19 MS. DROUIN: Because a policy statement by
20 definition is a high-level statement.

21 CHAIRMAN STETKAR: Right.

22 MS. DROUIN: It says here's my expectations.
23 But how you want to achieve them is in the implementation
24 guidance. And, yes, I can see a very detailed, you know
25 -- and I don't know whether it would be, you know, a

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1 management directive, NUREGs, Reg Guides. It could be
2 a series of things. But, you know, of how you know write
3 the implementation part of achieving those expectations,
4 you know, with one of the big expectations being, you
5 know, how do I finally decide I have achieved adequate
6 defense-in-depth for reactors? You're not going to
7 -- that's not going to be in a policy statement.

8 CHAIRMAN STETKAR: Right.

9 MS. DROUIN: So anyway --

10 MEMBER SCHULTZ: In order to provide
11 meaningful result, I like the fact that this slide is
12 as it is and does not have the next layer and layer,
13 because this is where we really need to start and concept
14 for defense-in-depth and the decision process. We need
15 to have this upper level statement and all the bulleted
16 elements defined and they must be common for all of the
17 underlying applications. They must be. You
18 know, defense-in-depth should not vary across that line
19 of items, be it 3 or 15, that we're going to be applying
20 it to. And we really can't allow whoever is under reactor
21 safety to develop some other derivation of what
22 defense-in-depth is and have it different from a medical
23 application or other elements. At this level we need
24 to define and develop objectives and levels of defense
25 in decision criteria. The underlying 15, or 3, however

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1 many elements there are, is just -- that's application
2 of these fundamental principles.

3 MS. DROUIN: I don't disagree with you.

4 MEMBER SCHULTZ: Well, let's stick with it.

5 (Laughter.)

6 MS. DROUIN: That's not my decision to make.

7 MEMBER SCHULTZ: Well, we'll stick with it.

8 MEMBER BALLINGER: So the NTTF would be an
9 implementation --

10 CHAIRMAN STETKAR: No.

11 MEMBER BALLINGER: -- of those principles,
12 right?

13 CHAIRMAN STETKAR: I wish it were, but that's
14 not what I'm hearing.

15 MEMBER BALLINGER: Well, I can cash in stupid
16 chips here because I'm new.

17 (Laughter.)

18 MEMBER SCHULTZ: That's not what I'm
19 hearing, John, but I think --

20 MEMBER CORRADINI: Are you going to pass
21 them over to somebody on this side of the table?

22 (Laughter.)

23 CHAIRMAN STETKAR: That's right. I think
24 what I'm still hearing, a bit of my concern, if I can
25 feed it back again, is that the NTTF at least -- I don't

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1 see the -- except for this focus on reactors, the NTTF
2 is supposedly looking at operating reactors. So, okay.

3 That's a subset on defense-in-depth. But I don't see,
4 from what I've read anyway, any fundamental difference
5 in terms of philosophy, if you will, compared to what's
6 in this paper from RMRF on defense-in-depth policy at
7 a high level --

8 MS. DROUIN: No, because we --

9 CHAIRMAN STETKAR: -- compared to what I
10 read.

11 MS. DROUIN: -- took all that conceptual
12 thinking.

13 CHAIRMAN STETKAR: However, the difference
14 is if I go over to the Risk Management Regulatory Framework,
15 there's agreement on, yes, we ought to have a box called
16 "Beyond Design Basis Events for Which we Ought to Implement
17 Some Type of Oversight Process." I'll call it that.
18 But the NTTF recommendation is going one step further
19 in that area and saying here's how you ought to implement
20 it. Here's how you ought to populate the box.

21 So it's taking the next step in that
22 particular area down below this overarching policy
23 statement and saying we don't want to populate it this
24 way. We don't want to populate it this way. This is
25 the way we ought to populate it. And that seems to me

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1 a bit different than the other two boxes on this slide.

2 I don't know if I expressed myself very well because

3 I'm seeing blank stares, but it --

4 MS. DROUIN: I think the reason you're seeing
5 blank stares is because in populating the box; and, Dick,
6 jump in and help me here, you would use defense-in-depth
7 however, it's, you know, developed.

8 CHAIRMAN STETKAR: I know you like
9 defense-in-depth. I'm trying to think at a different
10 level. Defense-in-depth is part of the way we ensure
11 safety in class. We can never have so much
12 defense-in-depth that we can't mitigate the big meteorite.

13 And I keep using that. Everybody stares at me like
14 I'm an idiot, but it's a wonderful thing to keep in mind.

15 There's always something that you can never have enough
16 defense-in-depth --

17 MS. DROUIN: Well, absolutely.

18 CHAIRMAN STETKAR: -- and you can't --

19 MS. DROUIN: I don't disagree with that.

20 CHAIRMAN STETKAR: And our process ought
21 to acknowledge those things. So I'm not
22 -- defense-in-depth is one part of the problem. Managing
23 risk is the overarching part of the problem.
24 Defense-in-depth feeds into managing risk, managing
25 safety. So it's one part of the puzzle, but it's not

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1 the only part. It's the easier part of the puzzle, in
2 my sense.

3 MS. DROUIN: Well, I think that when you
4 come up with your decision process and your criteria
5 and determine whether or not you have adequate
6 defense-in-depth, you would have to deal with issues
7 like a meteorite.

8 CHAIRMAN STETKAR: You do. And that's one
9 -- as I mentioned this morning, metrics to determine
10 adequacy of defense-in-depth.

11 MS. DROUIN: Right.

12 CHAIRMAN STETKAR: You need to be able to
13 measure that at some point.

14 MS. DROUIN: Right.

15 CHAIRMAN STETKAR: But you also need to have
16 some process about determining do I even look at
17 meteorites? How I determine whether -- you know, suppose
18 the meteorite in Russia had whacked a commercial nuclear
19 power plant instead of the industrial facility? My God,
20 we'd be worrying about meteorites today, because we
21 haven't thought about them.

22 MEMBER CORRADINI: Instead of saying --

23 CHAIRMAN STETKAR: Because we haven't
24 thought about them. You know, there would be another
25 hue and cry about we haven't evaluated the likelihood

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1 of meteorites striking a nuclear power plant and what's
2 the risk from that?

3 MS. DROUIN: Well, I think that gets --

4 CHAIRMAN STETKAR: That we started
5 two-and-a-half years ago with seismic and floods.

6 MS. DROUIN: I think those issues get over
7 onto the right-hand side of the figure, which is your
8 whole decision process and what you go through.

9 CHAIRMAN STETKAR: And that's what I'm
10 saying is as I read -- what you've written in this Risk
11 Management Regulatory Framework policy statement does
12 seem to be appropriately high level, setting out a basic
13 framework and a thought process, goals and an initial
14 structure of decision criteria, not fleshing out the
15 details and not being specific to individual
16 hazards or individual regulated activities, recognizing
17 that there will be differences across the regulated
18 activities.

19 The only problem that I have is that if you're
20 saying that somehow this framework becomes subservient
21 to the NTTF 1 recommendations, I think it's important
22 for everyone to clearly understand that, because as this
23 is written this is the universe and a way of populating
24 the box, if you want to call it that, that NTTF
25 Recommendation 1 is part of the implementation of this.

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1 In other words, the decision has already been made.

2 MS. DROUIN: I think -- and I don't want
3 to speak for management, so I'm just guessing here, but
4 I think, you know, one way to perhaps look at this is
5 that you could write the implementation guidance without
6 ever having a policy statement.

7 CHAIRMAN STETKAR: Yes.

8 MS. DROUIN: Now is --

9 CHAIRMAN STETKAR: You could, but that's
10 why we're having these discussions, because people have
11 done that for 30 years, you know, focused on little bits
12 and pieces individually.

13 MS. DROUIN: And I think that's what 2150
14 is saying, quit doing that.

15 CHAIRMAN STETKAR: Right.

16 MS. DROUIN: But, you know, whether or not
17 management has agreed to that, to me, is still what's
18 under discussion.

19 MEMBER CORRADINI: That's a fair answer.

20 CHAIRMAN STETKAR: Okay.

21 MEMBER CORRADINI: That's a fair answer.

22 MR. DUDLEY: I mean at this point in time
23 I think we still believe we can pursue these activities
24 consistently and within the common framework. I mean
25 in the framework that it's described in the policy

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1 statement is the framework that will probably be applied
2 to reactors. Only then the reactor thing would be
3 developed in a lot more detail down to the specific levels.

4 So at this point I still believe we can maintain
5 consistency and coherency with these two activities.

6 The management decision, I believe, to pursue
7 the defense-in-depth policy statement, or whatever for
8 power reactors, independently of the schedule for
9 delivering the Risk Management Regulatory Framework
10 policy statement I think was just based on the thought
11 that maybe we can -- even though power reactors is harder,
12 maybe we can get that done more quickly than we can trying
13 to come up with some -- getting all these other program
14 offices to all agree that this is how we're going to
15 approach these things. So I believe that that
16 has a lot to do with management's decision to pursue
17 the power reactor thing on a different schedule than
18 the Risk Management Regulatory Framework for the other
19 program offices.

20 MR. CARUSO: Yes, this is Mark Caruso.
21 Originally the plan was to propose that the development
22 of the reactor policy statement be done as part of this
23 activity. So you would have this sequence where you
24 go to the Commission and say we want you to approve the
25 recommendation to have a reactor policy statement, but

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1 we won't start working on it really, you know, probably
2 in earnest until we start really putting together this.

3
4 Now we would be already working on this,
5 but it would be more on that schedule. And I think there
6 was a desire to say, well, we don't really know what's
7 going to happen with this. We don't want to wait six
8 or eight months after the SRM on N T T F to see if the Commission
9 says, yes, we agree you should have a policy statement
10 on reactors. The direction was we should start right
11 away and do that.

12 And I agree with Dick. That's what I was
13 trying to say. I think we can handle that wrench in
14 the monkey works still within this framework to do it
15 in a way that I think everybody agrees is the way it
16 should be done with the top level and it being consistent
17 with the top level. And I think our managers feel the
18 same way, that it should be done that way. But it's
19 going to be a little harder to do and there are some
20 risks involved.

21 MEMBER BLEY: Well, at least on the reactor
22 side, there have been a number of attempts in the past
23 that are documented of trying to lay out what
24 defense-in-depth is. And you've got probably a better
25 starting part there, I would guess.

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1 MR. DUDLEY: Right. I think that was the
2 management's thought, is that it's -- power reactors
3 is further developed. It's the higher risk activity.
4 So perhaps that means it needs it more or sooner. And
5 so I think that was part of the rationale behind the
6 decision to pursue it separately.

7 MR. CARUSO: And they're both coming from
8 the same tree. So --

9 (Laughter.)

10 MS. DROUIN: I've been called many things
11 in my life, but never a tree.

12 (Laughter.)

13 MR. CARUSO: Well, I was just using that
14 symbolically, Mary. The same --

15 MR. DUDLEY: Same source.

16 MR. CARUSO: The same magic --

17 MR. DUDLEY: Resource. Mary is the lead
18 for defense-in-depth on the Power Reactor Working Group,
19 as is she is the lead for the overall agency's
20 defense-in-depth with the RMRF.

21 MR. CARUSO: And what I meant was all the
22 thinking that's come in both arenas so far has come
23 primarily from Mary. So we're already partly there,
24 I think. So it would be hard for it to get completely
25 diverted because of the start that it's had.

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1 MS. DROUIN: Shall we move on? Okay. I'm
2 going to skip all the way to slide 15.

3 MEMBER CORRADINI: That's a good idea.

4 MS. DROUIN: And, you know, the first set
5 of recommendations which are recommendations 2.1, 2.2,
6 3, 4 basically say, you know, develop a policy statement
7 for a Risk Management Regulatory Framework. And you
8 have our first conceptual work-in-progress draft of that.

9 Now the way we set up that draft document
10 is the first section provides, you know, a background
11 discussion. It gives us some of the activities and
12 policies. Also touching a little bit on what's happened
13 in the international arena and what's going on with other
14 agency efforts. And we added a section that talks about
15 defense-in-depth and other key considerations that you
16 need to think about in this regulatory framework. Then
17 the second section provides a discussion of how the policy
18 statement was developed. And then the third section
19 actually provides the actual policy statement. And it
20 is divided up into four areas.

21 It gives the policy on the use of
22 risk-informed and performance-based decision making,
23 tools for obtaining risk insights, the role of
24 defense-in-depth, and program area-specific
25 considerations.

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1 And then the fourth section is something
2 we just added on. Probably that would not stay very
3 long and would be deleted, but we thought that some of
4 that -- you know, we didn't want to leave that information
5 --

6 CHAIRMAN STETKAR: Yes, that's the area
7 where I thought you're getting -- at least in the way
8 I was kind of interpreting the whole purpose here, is
9 where you're getting a lot closer to structure for what
10 I'd call implementation guidance that might not be
11 appropriate, you know --

12 MS. DROUIN: Right.

13 CHAIRMAN STETKAR: -- at this level.

14 MS. DROUIN: So that one we've already
15 recognized probably does not belong there, but should
16 get into more detail, but not in the policy statement.

17 CHAIRMAN STETKAR: It's the kind of thing
18 that you certainly -- you know, everybody working on
19 this certainly needs to think through, at least down
20 to some level of detail, because it helps you flesh out
21 --

22 MS. DROUIN: Right.

23 CHAIRMAN STETKAR: -- some of the
24 higher-level thinking, but --

25 MS. DROUIN: So we just haven't gone back

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1 and deleted that yet.

2 CHAIRMAN STETKAR: Yes.

3 MS. DROUIN: The reason I have this slide
4 here is because the tasking memo directed us to seek
5 stakeholder input. And for some reason, as we've gone
6 down this path, people have gotten confused with what
7 we have developed, everybody keeps thinking, is the actual
8 policy statement and that it's not a very early
9 work-in-progress draft. So, you know, our intent was
10 to issue works-in-progress throughout the entire process
11 to seek, you know, stakeholder input and to hold public
12 meetings; we've already held one public meeting, and
13 to develop questions to help focus stakeholder input.

14
15 So my question at this point is that we
16 certainly want to receive, you know, Subcommittee input.

17 And I don't know if like today we're going to really
18 be able to get a lot of views, you know, on the concepts,
19 you know, of this draft policy statement, because we
20 didn't want to get into arguing, you know, actual wording
21 of sentences. We aren't even there yet. You know, we'll
22 be at a time where we're going to really start, you know,
23 sharpening our pen for the actual, you know, sentence.

24 You know, right now we're still at the conceptual stage.

25 But even when you talk about the concepts, you have

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1 to read something.

2 So, you know, what I did for this
3 presentation; and maybe there's just some that we walk
4 through, is these are the questions we plan to publish
5 along with this work-in-progress to the public. And
6 maybe there are some here that, you know, you may want
7 to talk about now, or maybe you have some questions,
8 or -- I do have backup slides that have the actual words
9 from the draft if you want to, you know, look at those.

10 This first question we put in there because
11 for some reason in sharing this work-in-progress with
12 others people got very confused by this up-front material.

13 Now, I will tell you in looking at lots of policy statements
14 that have been written -- first of all, believe it or
15 not, this agency has no guidance to write a policy
16 statement. There's no management directive. There's
17 nothing that exists that says here's how to write a policy
18 statement, here's, you know, how it should be structured.

19 So when you look across all the policy statements, they're
20 all over the place.

21 So what we did is we looked at the very most
22 recent policy statement. Then we looked at some that
23 we thought were somewhat related to this. But there's
24 one thing I can tell you: All policy statements all
25 have a lot of information up front before you ever get

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1 to the actual policy. But anyway, we decided to, you
2 know, put this in here. You know, do you find this
3 information useful? We thought it added a lot of context
4 for somebody who had no background to understand, you
5 know, why this policy statement was being developed.

6 Then section 3 is the actual policy statement.

7 And we thought, well, you know, is the policies -- the
8 goal and purpose, is it clear? Is this proposed conceptual
9 statement useful, you know, in clarifying the Commission's
10 intent? You know, if it's not, you know, what needs
11 to be clarified?

12 Now, section 2 here had a key thing in it.

13 I don't know if you caught it.

14 CHAIRMAN STETKAR: Yes.

15 (Laughter.)

16 MS. DROUIN: But should the current PRA
17 policy statement be replaced or subsumed? RMRF thought
18 it should and we talked --

19 MEMBER BLEY: I'm sorry, it should?

20 MS. DROUIN: Should.

21 MEMBER BLEY: Should what? Replaced or
22 subsumed?

23 CHAIRMAN STETKAR: Should be retained?

24 MS. DROUIN: No, should be withdrawn. They
25 actually use the word --

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1 MEMBER BLEY: Thank you.

2 MS. DROUIN: -- "withdrawn." And so we
3 talked about it among ourselves and, you know, we thought,
4 you know, yes, this should replace it.

5 CHAIRMAN STETKAR: A couple things: And
6 I'd like to hear the rationale behind that, because that
7 sounded like -- there were a couple of things as I read
8 through that -- by the way, I like it, the document.
9 This notion of will this document policy statement and
10 the supporting document be considered by the world at
11 large; and we're all part of the world at large, as something
12 that's evolutionary or revolutionary? And withdrawing
13 an existing policy statement and replacing it with a
14 new policy statement is more revolutionary than
15 evolutionary. There were a couple of things as I read
16 through this -- that's okay. You can frown. This is
17 my opinion.

18 MEMBER BLEY: I'm more than frowning.

19 CHAIRMAN STETKAR: Okay.

20 MEMBER BLEY: That seems incoherent to me.
21 You can move from one to another in an evolutionary way,
22 and as you did it you can replace the old one with the
23 new one, unless this one is so dramatically different
24 from the old one it has no relationship.

25 CHAIRMAN STETKAR: That's part of my problem

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1 though is will it just superficially be interpreted as
2 being so dramatically different when it actually isn't?

3 And that's why I wanted to probe about withdrawing --

4 MEMBER BLEY: Well, the one thing that the
5 folks who wrote 2150 did, was kept saying over and over
6 this is evolutionary.

7 CHAIRMAN STETKAR: That's right.

8 MEMBER BLEY: Yes.

9 MR. CARUSO: Well, this is Mark Caruso.
10 And as a stakeholder member of the working group and
11 a representative from NRO, you know, I think all the
12 groups within the agency that are involved with
13 risk-informed regulation are looking at this question.

14 And I believe, at least our view in reactors; and this
15 has been articulated in our comments, is that there's
16 a lot of stuff that should be retained from the policy
17 statement, just they moved in here, and the stuff that
18 needs to be updated should be updated. So I think we
19 vote for evolutionary.

20 MS. DROUIN: And beginning with what Mark
21 said gets into the next two bullets, because we did go
22 back and look at the old PRA policy statement and they
23 had those four statements. And so we looked at them
24 and we did import them over in section 3.b, but we revised
25 the wording a little bit. Because when you look at the

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1 PRA policy statement the way it's written, we found two
2 -- if you want to call faults with it. It used the word
3 "PRA," and PRA is not something every program office
4 does.

5 So, you know, we wanted to allow the
6 flexibility to -- you know, we thought everybody can
7 do some type of risk analysis and it doesn't
8 necessarily have to be a probabilistic risk analysis.
9 So we want to enter that flexibility in there. So we
10 changed the wording a little bit, but we did carry over
11 those bullets into this one.

12 The other thing we tried to do was two other
13 things, is that the PRA policy statement the way it's
14 written is really focused more for the NRC staff, that
15 you know, you should increase the use of PRA in all
16 regulatory activities. Those are the words in there.

17 And what we tried to do is expand it for this to be
18 applicable to both the staff and to our licensees, that
19 we wanted to encourage licensees to also -- you know,
20 where appropriate. You know, and we tried to constantly,
21 you know, get that theme in there where appropriate and
22 practical, you know, to increase the use of risk analyses.

23 So those two thoughts, you know, we, what
24 I would say updated, you know, the PRA policy statement.
25 You know, because if you go back, the PRA policy statement

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1 dates back to 1995. And we thought, you know, hopefully,
2 you know, we are now getting to the point where we should
3 be encouraging our licensees, you know, to use more risk
4 analyses, you know, in their activities, you know, as
5 associated with NRC, you know, where practical, you know,
6 where appropriate. So that's what -- you know, these
7 two questions we're trying to get to.

8 So then the next series of questions was
9 getting to those seven, you know, elements. You know,
10 do we think that those are, you know, a complete and
11 reasonable fit, you know? You know, if not, why not?

12 Are they sufficient? Do they cover the full spectrum?
13 You know, is there something we need to be doing in
14 looking at those? I mean, do people agree with those
15 seven elements?

16 MEMBER BLEY: Can I ask you about the seven?

17 There's one thing that kind of bothers me. You added
18 "communicate" --

19 MS. DROUIN: Yes.

20 MEMBER BLEY: -- to elevate it. 2150, or
21 whatever its number is, fell back on the National
22 Academies' report that defines deliberation as any formal
23 or informal process for communication and collective
24 consideration of issues, and then lays out a nice diagram
25 that kind of shows where all those communications need

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1 to occur.

2 And it strikes me -- I don't quite get why
3 you did what you did. And I rather liked the way they
4 described that deliberation step in 2150 and the graphics
5 that go with it. It's all about communication and lays
6 it out pretty well. So, you know, on the surface it
7 sounds reasonable, but when you look at what they did
8 and why they did it, it's a nice concept.

9 MS. DROUIN: We tried to capture that. You
10 know, when you read ours -- you know, because it does
11 go on to say, you know, communicate with both internal
12 and external, blah, blah, blah, throughout the process,
13 you know, by gathering information, deliberating and
14 implementing. So, you know, what we're trying to say
15 is communication is done at every step. So we agreed
16 with that thought. But we did feel that the communication
17 was -- you know, and I will say this is probably me driving
18 this more than anybody else on the working group. I
19 think communication is such a key ingredient that I think
20 to bury it down -- and to me that was buried. But to
21 bring it out as its own element --

22 MEMBER BLEY: I guess this is just a personal
23 difference. For me it put a spotlight on it that I thought
24 was really nice.

25 MS. DROUIN: You know, so it's not that it

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1 still isn't said that way in the document, because it's
2 said that way also, but it's also identified as a key
3 element. But again --

4 MEMBER BLEY: You would define
5 "deliberation" differently than 2150 did?

6 MS. DROUIN: No. No, we didn't redefine
7 any of the other elements differently.

8 Okay. Then the next series of questions,
9 you know, get into, you know, section 3.c, which is the
10 role of defense-in-depth. You know, do we believe it's
11 a key, you know, aspect? You know, will it be useful?

12 You know, is it clear? What are the key attributes?

13 You know, are the basic levels of prevention and
14 mitigation reasonable? Are the definitions of
15 "prevention" and "mitigation" clear and reasonable?
16 You know, if not, why not? You know, should and can
17 they be further detailed and still be sufficiently
18 flexible?

19 I mean when you talk across the agency, you
20 know, do we just stay at prevention and mitigation or
21 can we maybe subdivide that into say three levels of
22 defense? Does that make sense? And say one is say
23 prevention, the next one's containment or confinement,
24 and the next one's mitigation. Does that make sense
25 or does it make more sense to stay at the higher level

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1 of prevention and mitigation? So that's what we were
2 trying to get to there.

3 You know, should these levels of defense
4 be independent of each other, you know, as much as you
5 can be so that the failure of one level, you know, doesn't
6 lead to the failure of subsequent levels?

7 MEMBER BLEY: Just backing you up a slide
8 or two, you don't have to go there.

9 MS. DROUIN: How do I --

10 MEMBER BLEY: You made a distinction between
11 PRA and risk analysis. And maybe what you're trying
12 to do is point out the difference between a particular
13 structure of event trees and fault trees versus something
14 that's doing that risk process of what can go wrong and
15 how likely is it, what are the consequences? I don't
16 think your paper drew that distinction, or I'm missing
17 it if it did.

18 MS. DROUIN: I'm sorry, Dennis, we were
19 trying to catch up on the slides.

20 MEMBER BLEY: I don't remember what I said,
21 you know?

22 (Laughter.)

23 MS. DROUIN: Oh, no.

24 MEMBER BLEY: Okay. You drew a distinction
25 on your slides between risk analysis and PRA.

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1 MS. DROUIN: Yes.

2 MEMBER BLEY: And it's one that doesn't sit
3 particularly well with me. But I think what you're trying
4 to do is saying, you know, the full infrastructure of
5 what we've come to know as PRA for reactors with stylized
6 event trees and fault trees and that whole approach you
7 might not need to use everywhere. But if you're doing
8 risk assessment, whatever kind of risk analysis you're
9 doing, you're looking at what can go wrong, how likely
10 is it and what are the consequences?

11 If you're really doing that, the
12 probabilistic stuff is there anyway. So my question
13 is --

14 MS. DROUIN: Well, see, now that's where
15 I would disagree.

16 MEMBER BLEY: -- first, you know, do you
17 see it the same way? And second, I didn't see this
18 distinction in your paper. John's got more.

19 CHAIRMAN STETKAR: Yes. Well, the paper
20 does lay out the risk triplet.

21 MEMBER BLEY: Well, it does, but under -- it
22 doesn't come up with this idea that risk assessment is
23 something different than PRA, I don't think.

24 CHAIRMAN STETKAR: No, it doesn't. I mean
25 it --

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1 MEMBER BLEY: It lays it all out as risk
2 assessment.

3 CHAIRMAN STETKAR: -- lays it all out, but
4 I agree the paper does not then take that next step and
5 distinguish that a PRA is different perhaps from risk
6 assessment.

7 MS. DROUIN: Well, I don't think different
8 is the right word. It is a type of risk analysis, and
9 you have different types of risk analyses, PRA being
10 one of them. So we're just saying that for some of these
11 program areas maybe all you have to do is some type of
12 qualitative analysis. It doesn't have to be a
13 probabilistic risk analysis.

14 MEMBER BLEY: Well, let me just push you
15 though. Would you look for what can go wrong?

16 MS. DROUIN: Yes.

17 MEMBER BLEY: Would you look for what are
18 the consequences?

19 MS. DROUIN: Yes.

20 MEMBER BLEY: Would you look at how likely
21 is it that this will go wrong?

22 MS. DROUIN: Yes. But I can --

23 MEMBER BLEY: Well to me that's a PRA.

24 (Laughter.)

25 MS. DROUIN: Well, no, no, no, no, no.

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1 CHAIRMAN STETKAR: But it's not ASME.

2 MS. DROUIN: Well, no.

3 CHAIRMAN STETKAR: There's a quote that I
4 highlighted here. I'll just read it. And it does sort
5 of hit at this a little bit, and I didn't -- I highlighted
6 it for a different reason, but it says -- and this is
7 in section 3.a, if you want to make a note -- "An essential
8 factor in the above decision making process is the use
9 of risk information which of sufficient technical quality
10 for its intended use in which it accurately and completely
11 describes the limitations of the methodology/risk
12 assessment tools used to generate the risk information.
13 Therefore, the Commission expects that" -- and there's
14 two bullets here. The first bullet: "The above decision
15 making process will be supported by the use of risk
16 assessment tools that are appropriate for the regulated
17 activities."

18 MEMBER BLEY: Very good.

19 CHAIRMAN STETKAR: Which that sounds good.
20 Secondbullet: "For some regulated activities licensees
21 should develop and maintain licensee-specific PRAs or
22 other risk analyses -- other related risk analyses
23 appropriate to the regulated activity; for example, PRA
24 for power reactor licensees, ISAs for some material
25 activities, acceptable qualitative methods."

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1 And that's the only -- I didn't -- until
2 I heard this -- I had it highlighted for another reason
3 where it says the Commission expects that somebody -- the
4 power reactor licensees should have a PRA.

5 MEMBER BLEY: I think that the real issue
6 is you don't need the full burden of Reg Guide 1-200.

7 And it might be better to put in those terms. I think
8 the way it's in the paper is probably okay. The way
9 you --

10 CHAIRMAN STETKAR: I think the way --

11 MEMBER BLEY: -- put on the slides --

12 CHAIRMAN STETKAR: Well, it's -- when I said,
13 well, why do we need to rescind the PRA -- you know,
14 the previous PRA policy statement, you said, well, because
15 it focuses on PRA. And I'm like, Dennis -- I was just
16 thinking PRA is a way of thinking about things. It isn't,
17 you know, a computer code or a fault tree. But now I
18 better understand that and I better understand this
19 statement. But I don't think anybody else reading this
20 paper would understand that nuance.

21 MEMBER BLEY: Well, I think they'd get what's
22 in the paper.

23 CHAIRMAN STETKAR: Think so?

24 MEMBER BLEY: It was the piece in the slides
25 that bugged me.

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1 MEMBER REMPE: Well, so also --

2 MEMBER BLEY: And we've also written
3 something about what's in that paper.

4 CHAIRMAN STETKAR: Oh, yes, we have.

5 MEMBER BLEY: Keep that in mind, yes.

6 CHAIRMAN STETKAR: Yes.

7 MEMBER REMPE: While you're explaining
8 things, I was struggling with this morning's slides,
9 slide 23 where it's talking about requiring operating
10 reactor licensees to perform and periodically update
11 PRAs and would it be cost-effective? And was it you,
12 Mark, who said in this -- you gave this slide, probably
13 not? And how do I reconcile with what I heard this morning
14 versus what I'm hearing this afternoon and what's in
15 the paper in the section that John just read?

16 MR. CARUSO: That would be the difference
17 between encouraging licensees to have PRAs and use them
18 and requiring them to have them.

19 MEMBER REMPE: Well, what I'm hearing this
20 afternoon is more strongly let's encourage them to have
21 them and use them. And what I heard this morning is,
22 well, probably not cost-effective. And how do I reconcile
23 what I'm hearing this morning versus what I'm hearing
24 this afternoon? Or am I not understanding what I'm
25 hearing?

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1 MS. DROUIN: Well, you know, this morning
2 what I said in that discussion, if you'll remember, is
3 that if you try and tie the cost of the PRA to a single
4 activity, it won't be cost-effective. If you try and
5 tie it into, you know, a whole series of activities,
6 which is -- RMRF is doing. So it's not tied to just
7 doing categorization. We're tying it to categorization,
8 to -- you know, I'm talking reactors now.

9 MEMBER REMPE: Okay.

10 MS. DROUIN: Tech specs.

11 MEMBER REMPE: Okay.

12 MS. DROUIN: ROP, 50.69, maintenance rule.

13 And if you bring in the whole slew of regulatory
14 risk-informed activities, you will be able to justify
15 the cast.

16 MEMBER REMPE: Okay. That helps.

17 CHAIRMAN STETKAR: Might.

18 (Laughter.)

19 MS. DROUIN: No, I think you could. I think
20 that -- and I just say this from somebody, you know,
21 who's come from the private sector doing many, many PRAs,
22 I think that this \$100 billion that industry is --

23 PARTICIPANT: One billion.

24 MS. DROUIN: Even one billion --

25 CHAIRMAN STETKAR: I'll do them all for half

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1 that price.

2 (Laughter.)

3 MS. DROUIN: -- yes, is such an exaggeration.

4 You know, it's just not near that much money. And this
5 is also talking with, you know, contractors who are doing
6 them right now and how much are they, you know, charging,
7 you know, licensees for doing them. But anyway, we don't
8 need to go there.

9 Okay.

10 CHAIRMAN STETKAR: Pete, you're the new guy
11 so you get to get called out on the record here. You
12 hit that thing, and depending on who's sitting over there
13 with the earphones on, they either explode their ears
14 or they come and kill you.

15 (Laughter.)

16 CHAIRMAN STETKAR: So just be careful.

17 (Laughter.)

18 MS. DROUIN: Okay. The next ones we're
19 getting now down more into the detail, you know, of the
20 definitions of "prevention" and "mitigation." You know,
21 do they make sense?

22 Okay. This last bullet here is real
23 important, and that is, you know, do the proposed
24 defense-in-depth principles and the decision criteria
25 complete? And what I say "complete," it's not meant

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1 to say that everything we have right is absolutely
2 complete, but at least are we getting there, you know,
3 or is this some major thing that we have missed. So
4 that's really asking, you know, more is that needed?

5 CHAIRMAN STETKAR: If you surplus section
6 4 of the paper where you start to get into more specifics
7 about criteria, I think the answer to that question,
8 from my perspective, is yes they are complete.

9 MS. DROUIN: Okay.

10 CHAIRMAN STETKAR: Once you start getting
11 into section 4 where you start to have some bullet points
12 and things like that, I had some questions about, well,
13 gee, if you want -- I don't think you should, first of
14 all, go to that level of detail. And if you are, then
15 I started to have questions about completeness of those
16 lists.

17 MS. DROUIN: Okay.

18 CHAIRMAN STETKAR: So at the high level I
19 think they seem to make a lot of sense.

20 MS. DROUIN: Yes, then we added this section
21 3.d, which was to -- and the intent of this section was
22 should we maybe try and put into the policy statement,
23 at least at a high level only, you know, specific policy
24 considerations for the various program areas. That,
25 okay, you know, when you're thinking about this globally,

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1 here it is. But you know, by the way, when you're thinking
2 about reactors you need to keep this in mind, when you're
3 thinking about transportation.

4 So these are meant to be very high-level-type
5 of statements. So this wasn't meant to be pages and
6 pages here. And as you can see, we didn't have that
7 many. But, you know, we thought that having some of
8 these high-level program area-specific policy
9 considerations would be a useful thing.

10 Then, you know, the last set of questions,
11 you know, was how can we make it more useful? You know,
12 is it sufficiently flexible? And this was a big concern
13 across, you know, all the various members of the working
14 group is that, you know, we're hoping that even though
15 we used all the thinking for reactors, you know, did
16 we scrub it well enough and make it flexible enough for
17 the various program areas? We like to think we have,
18 but you know, that may not be true.

19 And, you know, the last one, you know, is
20 what implementation challenges, you know, do you foresee?

21
22 So these were the series of questions that
23 we were going to publish with the draft to help focus
24 more the kind of input, because we didn't want to -- you
25 know, people start being, you know, well, you know, page

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1 2, paragraph 3, line 4, I don't like the way that's written.

2 You know, we're not even there yet. So we wanted to
3 bring, you know, the reviewers up to a higher level.

4 CHAIRMAN STETKAR: One thing. And I promise
5 -- you know, I made comments on wordsmithing, but I know
6 that. One word though that I did pick up in several
7 places that you use is the word "credible" when you're
8 talking about the scope of things that people should
9 think about. And I caution you against using that word.

10 MS. DROUIN: Well, I --

11 CHAIRMAN STETKAR: And I was curious whether
12 there was an overriding need to use the word "credible."

13 MS. DROUIN: The reason we -- you know,
14 because usually you see, you know, how likely is something?

15 CHAIRMAN STETKAR: Yes.

16 MS. DROUIN: The reason we said how likely
17 or credible was to bring in the security aspect. So
18 the security part is looking, you know, how credible
19 it is versus how likely. But we can have that discussion
20 later on when we get into the security stuff.

21 CHAIRMAN STETKAR: Okay. But it came in
22 from the security area?

23 MS. DROUIN: Yes.

24 CHAIRMAN STETKAR: Okay.

25 MS. DROUIN: That's why we revised that and

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1 added that throughout.

2 CHAIRMAN STETKAR: In the sense of a credible
3 threat?

4 MS. DROUIN: Yes. Yes.

5 CHAIRMAN STETKAR: Just being a term that
6 somebody uses?

7 MS. DROUIN: Yes, that's terminology they
8 use in that field.

9 Okay. So now we're going to --

10 MEMBER BLEY: And we used to use in reactor
11 safety.

12 CHAIRMAN STETKAR: Yes, but I mean we've
13 been trying to get away from this notion of credible
14 because incredible things happen all the time and then
15 they become credible.

16 MS. DROUIN: Okay. We're actually five
17 minutes early.

18 CHAIRMAN STETKAR: Okay. Doing great.

19 MS. DROUIN: Okay.

20 MR. DUDLEY: All right. Mark Caruso and
21 I are going to talk about the specific RMRF recommendations
22 for power reactors. So now on slide 27, the NUREG-2150
23 recommendations for reactors were broken into four
24 categories: Power reactors, operating reactors, new
25 reactors and Generation IV reactors. And they in general

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1 involve recommendations associated with how you select
2 design basis events, how you treat external hazards,
3 defense-in-depth and security. And the security topic
4 will be addressed in a separate set of slides or a separate
5 presentation, so I'm not going to talk about it at this
6 time. And these recommendations were generally similar
7 in each reactor -- across the reactor program areas in
8 a number of cases. So we talk about a number of those
9 in terms of groups of similar recommendations.

10 So on slide 28 the power reactor, operating
11 reactor recommendations on design basis events. PR-R-1
12 and OR-R-1 are the design basis events and accidents
13 should be reviewed and revised to integrate modern
14 insights such as operating history and modern methods
15 such as PRA. And to do this approach it would require
16 us to implement a review of operating experience and
17 technology improvements over the past 40 or so years,
18 and we'd also have to look at new estimates or updated
19 estimates of event frequency. It would
20 involve changes to Regulatory Guides and standard review
21 plans. And it was considered as a portion of Improvement
22 Activity 1 for the disposition of Near-Term Task Force
23 Recommendation 1. And, well, it is still being
24 considered, because that activity hasn't made a
25 recommendation. The schedule for doing this would be

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1 a mid-term effort of about three to five years if it
2 were pursued.

3 But the Recommendation 2150 for new reactors
4 and for Generation IV reactors was a little different.

5 It just was to promote adoption of risk-informed
6 approaches for a selection of relevant scenarios for
7 design basis events, or design basis accidents. So this
8 is looking forward to new reactor designs. It's also
9 being considered as a part of Improvement Activity 1
10 for new reactors in that the recommendations that come
11 out of NNTF Recommendation 1 will apply to new reactors.

12 Yet for new reactors, Mark, you guys have
13 already done some of that to some extent, right?

14 MR. CARUSO: Yes, I mean in the sense of
15 -- well, we haven't really done anything with respect
16 to the, you know, standard set of design basis events.

17 If they apply to the design, the applicants are pretty
18 much analyzing them in chapter 15. They're not proposing
19 they be moved based on any particular operating
20 experience.

21 But on the other hand, there are look for
22 other events that are specific to the designs. That's
23 going on. And of course because they are required to
24 do a PRA, all the beyond design basis events are being
25 looked at.

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1 In addition, the designs are -- you know,
2 the idea of going back and looking at operating experience
3 and trying to be risk-informed and address initiating
4 events is fundamental to new reactor design. I mean
5 they're eliminating -- you know, they're making the
6 effects of station blackout. The passive designs are
7 attempting to make it much, much you know, more benign
8 than operating reactors. They, you know, piping
9 locations and sizes are being put in such that large-break
10 LOCAs are going away. So that's going on for new reactors.

11 Advanced reactors is -- again, you know,
12 there are design differences that are, you know, going
13 to be -- and we have seen, or we expect to see based
14 on our pre-application activities the bases for
15 eliminating events such as rod ejection. Rods are all
16 inside the vessel and drives and makes it much, much
17 -- you know, the likelihood of a rod ejection to occur.

18 I mean, we haven't seen the final, you know, designs
19 for any of them, but we do know that in some cases there
20 are some concepts being considered that one could argue
21 that the likelihood of a rod ejection is low enough that
22 you can eliminate it.

23 At one point in time one of the small IPWRs
24 came in to discuss an approach of a complete risk-informed
25 -- a new complete licensing approach. Very

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1 risk-informed, different than what we have now using
2 the PRA, frequency-consequence curve, all that sort of
3 stuff. And I think the upshot of that was is that it
4 was -- given the fact that the schedules they wanted
5 and the schedules we were talking about for doing these
6 reviews, it wasn't -- just wasn't feasible. So they
7 have changed their approach.

8 Now in Gen IV we also -- as you know, we've
9 discussed the NGNP approach. That's another very, very
10 risk-informed new approach, you know, to licensing.
11 So there's a lot of stuff going on there.

12 MEMBER CORRADINI: I'm intrigued by your
13 characterization. So can we go back to the white water
14 one? The NGNP one I know all too well.

15 What did you say about the -- you said there
16 was a particular interval.

17 MR. CARUSO: Yes. It was --

18 MEMBER CORRADINI: Without telling tales,
19 what was the issue?

20 MR. CARUSO: There was a meeting, and it
21 was a public meeting, and the proposal was to want to
22 engage with the staff. As I think you may know we've
23 discussed here when we developed -- the Commission wrote
24 us an SRM and said develop some specific review plans
25 for advanced reactors. Be risk-informed. Consider

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1 long-term approaches and short-term approaches. We went
2 back and we talked about the whole approach with the
3 DSRs and, you know, design-specific review plans. And
4 we also said that we would consider a longer-term
5 evaluation to do some sort of pilot activity of an approach
6 somewhat like 1860, or in that vein, NUREG-1860, which
7 is using the PRA to establish design basis events, beyond
8 design basis events.

9 So at a point after that this particular
10 vendor came in and said we would like to engage with
11 you on doing -- not doing a pilot of that, because we
12 had been talking about doing a pilot with one of those
13 vendors. We would like to license our plant that way.

14 And here are some of the issues we think we need to
15 talk about. And, you know, the staff's view was that's
16 great that you're thinking in this direction. You know,
17 we're supportive of that, but it's unrealistic considering
18 the licensing schedules.

19 MEMBER CORRADINI: Plant resources were not
20 matched up?

21 MR. CARUSO: Right. And the discussion of
22 whether or not advanced reactors would be -- IPWRs would
23 utilize the same set of regulations and there wouldn't
24 be a lot of rulemaking. All that had happened a couple
25 years ago and it had already been decided. So it was

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1 an offer of can we think outside the box here and are
2 you willing to do this? And I think, you know, it was
3 discussed within the staff and the -- you know, the response
4 was, well, if you would like to completely modify the
5 whole schedule here for this, that -- because this would
6 be a large resource activity. So that's the story on
7 that.

8 CHAIRMAN STETKAR: I hear an awful lot of
9 things that because I only have a dollar in my pocket
10 today, I'm going to forego a way of regulating the industry
11 going forward from here. These budget and resource
12 constraints and management directives based on what I
13 have to do today seem to be driving so much of these
14 decisions about a fundamental regulatory framework.

15 In other words, why -- what I've seen, and
16 I was aware -- I don't remember the vendor, it doesn't
17 make any difference -- of that on the SMRs, the NGNP
18 folks have said, well, we'd like to use a more risk-informed
19 approach to defining design basis events, an F-C curve.

20 Those concepts are in my mind very, very consistent
21 with the concepts in NUREG-2150. And yet the staff is
22 saying, well, because of budget constraints and management
23 directives we can't implement those concepts.

24 MEMBER CORRADINI: Well, he didn't say they
25 have to build it first before they let it go. That was

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1 waiting for -- to hear to him to say give us a prototype
2 and we'll give you a license.

3 CHAIRMAN STETKAR: But in the sense of
4 looking forward to a regulatory framework, it's not going
5 to be implemented for plant X tomorrow where plant X
6 is operating today. This is something that's going to
7 evolve over a decade or more. You know, are we limiting
8 ourselves too much based on these notions of what our
9 resources are today and what our work load is today for
10 regulating the current operating plants.

11 MR. CARUSO: Well, I mean it has to be --

12 CHAIRMAN STETKAR: Because I think the
13 current operating plants could be regulated under a new
14 framework to make it work, but going forward there's
15 always then going to be the inertia of, well, this is
16 the way we decided we do it in 2013. So now we're in
17 2033 and that's the way we've done it for the last 20
18 years and we're not going to change things now.

19 MR. CARUSO: Well, I mean there's a lot to
20 -- a lot of decisions have to be made in developing such
21 a framework, and the staff had proposed to do a pilot
22 study to develop this in conjunction with the licensing
23 of the IPWR and have them involved in it to get there.

24 But the idea that you could get there within the current
25 time frame of licensing, which was what was being proposed,

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1 just did not seem realistic given all the issues you
2 need to get through with PRA for these new designs and
3 how can you use that PRA and you're now using it to make
4 licensing decisions. Those are all tough questions and
5 they were to be addressed on the scale of a pilot project
6 that would go out several years, as you said.

7 I mean, so the staff was for that. The staff
8 originally had planned to do that. I'll have to admit
9 that since that time even that pilot program is being
10 questioned now as to whether or not we can do that.

11 MR. DUDLEY: The next group of
12 recommendations go to the design enhancement category
13 to establish by rule a design enhancement category of
14 regulatory treatment for beyond design basis accidents.

15 This approach is very similar to the categorization
16 approach that we're evaluating as part of Improvement
17 Activity 1 under Near-Term Task Force Recommendation
18 1, although our current recommendation is not to establish
19 it by rulemaking, but that we believe we can establish
20 it just by implementing regulatory guidance in the manner
21 that we've proposed in Improvement Activity 1.

22 The schedule would be a mid-term effort,
23 three to five years, if the Commission agrees that we
24 should pursue it and if they agree in the manner in which
25 the working group recommends that it would be pursued.

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MEMBER REMPE: So when you do something like this you're going to have to have certain assumptions in your PRA about the performance of components and systems. And have you thought about the guidance you're going to give to ensure that those systems and components are indeed performing as assumed in the PRA? And that was something I kind of was curious about this morning, too. But it's like people are assuming things. Well, you have to go down to -- it's not safety-related anymore. So what will you do about the equipment?

MR. DUDLEY: Well, for what we're looking under Recommendation 1 for operating reactors would not involve a PRA.

MEMBER REMPE: Right.

MR. DUDLEY: And so the category that the working group has looked at is not using PRA.

But now, Mark, new reactors you do have a requirement for a PRA?

MR. CARUSO: Well, for new reactors, yes, in the design PRAs there are a lot of assumptions.

MEMBER REMPE: Yes.

MR. CARUSO: But, you know, the applicants will be developing -- the licensees will be developing plant-specific PRAs and, you know, they're also required

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1 to have a Reliability Insurance Program which utilizes
2 their PRA to evaluate their equipment and rank equipment
3 to determine, you know, appropriate treatment for it.

4 So they're constantly -- you know, they're monitoring
5 their equipment and they're upgrading their PRA. They
6 have a whole PRA Maintenance Program and they commit
7 to it, licensing that's in their FSAR that requires them
8 to --

9 MEMBER REMPE: For the beyond design basis
10 events?

11 MR. CARUSO: Well, for -- yes, I mean for
12 frequencies, failure frequencies, initiating event
13 frequencies that go in the PRA that affect the evaluation
14 of beyond design basis events --

15 MEMBER REMPE: Okay.

16 MR. CARUSO: -- you know, they're on the
17 hook to maintain the data that goes in there based on
18 actual operating experience. So I wasn't quite sure
19 exactly what your question was.

20 MEMBER REMPE: No, okay. I understand for
21 design basis. But when you go to beyond design basis
22 events, I was curious about that. I didn't --

23 MR. CARUSO: Well, the reliability -- in
24 new reactors the Reliability Assurance Program covers
25 all the equipment that's, you know --

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1 MEMBER REMPE: Okay.

2 MR. CARUSO: It covers non-safety and safety
3 equipment. So and for the equipment that's in the scope
4 of the program they're required to apply treatment
5 commensurate with the importance of the equipment to
6 risk, and they evaluate that with the PRA. So if they
7 have safety-related equipment in there, and they do,
8 it has to be treated in accordance with, you know, what
9 the requirements say.

10 MEMBER REMPE: The safety-related. But I
11 guess again --

12 MR. CARUSO: Right. For the
13 non-safety-related they have to have some sort of program.
14 They don't describe in detail exactly what they're going
15 to do in the FSAR.

16 MEMBER REMPE: Right.

17 MR. CARUSO: You know, all we get is a
18 commitment that they will cover QA, they will cover
19 procurement, they will cover these things. And to tell
20 you the truth, it's still -- it's sort of up in the air
21 now exactly what is going to happen. In some cases there
22 are some discussions about -- we hear things like why
23 should I have two programs? It's easier for to me just
24 consider it all, you know, under safety-related. In
25 other cases, you know, not. And so there are questions

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1 about what level of IST do I do? We're starting to have
2 conversations with the plants that are under construction
3 about how they're going to do some of these things for
4 equipment that's not safety-related, which is a very
5 interesting discussion to be having.

6 And there's also equipment for passive
7 designs that's called written that gets certain levels
8 of treatment they've committed to, although most of that
9 is just -- you know, some of it gets put in the tech
10 specs. Most not. A lot of it just says we'll cover under
11 the Reliability Assurance Program. So that's really
12 where the rubber meets the road for new reactors -- for
13 reactors licensed in the Part 52 for non-safety equipment.

14 There's something more than operating
15 reactors, but exactly what that is is not completely
16 clear. You know, we do know that areas have to be covered.

17 QA, procurement, availability, reliability, the exact
18 details of how they're going to do that. They're allowed
19 to put those in the procedures because the program is
20 -- it's not a requirement.

21 MEMBER REMPE: Okay.

22 MR. DUDLEY: The next group of
23 recommendations are associated with external hazards,
24 and this is to reassess the methods to estimate frequency
25 and magnitude of external hazards and to implement a

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1 consistent process; we talked about this this morning,
2 you know, with respect to 10 to the minus 7 tornado and
3 a 100-year flood, and to implement a consistent process
4 including deterministic and PRA methods.

5 We are not dealing with this issue as part
6 of Recommendation 1. It doesn't directly affect
7 regulatory framework issues, and so we're going to defer
8 the evaluation or the decision or recommendation on
9 whether to pursue these recommendations to other folks
10 that are working on the other NTF recommendations for
11 external hazards. Also, there's an effort that we'll
12 have to do on the 2012 appropriations bill where we have
13 to reassess other external hazards. And there's an ASME
14 ANS Standard Program also that deals with external
15 hazards, and that is periodically updated.

16 So the schedule for pursuing this, if pursued,
17 would be a mid-term effort, approximately three to five
18 years. And again, we will consult with other folks to
19 determine what the recommendation should be regarding
20 whether to pursue that under the RMRF.

21 CHAIRMAN STETKAR: You said something that
22 went by pretty quickly, that you didn't consider this
23 to be part of the risk managed --

24 MR. DUDLEY: Under -- no. No.

25 CHAIRMAN STETKAR: -- regulatory framework?

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1 MR. DUDLEY: No. No. Under Near-Term Task
2 Force 1 --

3 CHAIRMAN STETKAR: Okay.

4 MR. DUDLEY: -- this didn't appear to be
5 part of the regulatory framework aspects of --

6 CHAIRMAN STETKAR: Under NTTF 1?

7 MR. DUDLEY: -- Recommendation 1. So that's
8 why the Recommendation 1 effort is not --

9 CHAIRMAN STETKAR: Is silent about this?

10 MR. DUDLEY: -- going to disposition.

11 CHAIRMAN STETKAR: Okay.

12 MR. DUDLEY: Make a decision or a
13 recommendation on this activity.

14 CHAIRMAN STETKAR: But as we discussed this
15 morning, it depends on I guess individuals'
16 interpretations of what was intended by that
17 Recommendation 1. Isn't that basically saying that
18 Recommendation 1 is not concerned with this notion of
19 I'm designing to a 10 to the minus 7 tornado and designing
20 to a -- I'm not sure, 10 to the minus 2 or 3 flood and
21 designing to a 10 to the minus 4 or maybe 5-ish earthquake
22 as incompatible in terms of a coherent regulatory
23 framework?

24 I mean my interpretation of NTTF
25 Recommendation 1 was that was a strong element of this

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1 notion of kind of a patchwork set of regulations, that
2 there wasn't a coherent sense of tying everything together
3 in terms of regulating the things that are the most
4 important contributors to risk and being aware of but
5 less stringent in our regulations of things that are
6 less contributors.

7 MR. DUDLEY: The aspects of what we're
8 focusing on under the regulatory framework in
9 Recommendation 1 is the coherency and the logical nature
10 of the -- you're referring mostly to design basis
11 requirements, and what we're focusing our --

12 CHAIRMAN STETKAR: No.

13 MR. DUDLEY: -- efforts on mostly is on the
14 beyond design basis requirements.

15 CHAIRMAN STETKAR: How do you then reconcile
16 -- okay. I'll take a 10 to the minus 6 earthquake versus
17 a 10 to the minus 8 tornado. Those are both now beyond
18 design basis. And yet to me it doesn't make any sense
19 whatsoever that we should somehow treat them the same.
20 Or are we just going to be silent about them?

21 MR. DUDLEY: I can't do that. Again, you
22 heard our proposal this morning for a generic design
23 basis extension category using the existing processes
24 and existing criteria to populate that category on a
25 forward-looking basis. And we are not going to address

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1 issues such as those that you raise. At least we're
2 not going to recommend that.

3 CHAIRMAN STETKAR: So if that's the case;
4 and this meeting is now on the RMRF --

5 MR. DUDLEY: Right. I don't know what the
6 staff will recommend on this group of recommendations.

7 All I'm speaking from is from my point of view on
8 Recommendation 1 is that we are not going to take -- and
9 we've looked at potential frameworks that might have
10 some effect on that. We didn't choose one. Having not
11 selected that framework approach, we will now let other
12 folks address this particular issue.

13 CHAIRMAN STETKAR: Yes, but my question is
14 who's the other folks? Because Mary said that if the
15 Commission approves the -- I always get the words wrong
16 -- the improvement whatever for Recommendation 1, then
17 the RMRF people will only work within that constraint.

18 MR. DUDLEY: For the sub-recommendations
19 that have a one-to-one correspondence with the items
20 in Recommendation 1 and the RMRF, but this activity does
21 not have a -- we would not be pursuing that under
22 Recommendation 1. So what we're going to do is to provide
23 input to the plan on whether or not we would implement
24 these sub-recommendations. We're going to go to staff
25 either that are working on Recommendations 2.1 or 2.2,

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1 or other folks that are involved with external hazards
2 reviews and they will decide what the path forward should
3 be on the plan for implementation of the RMRF.

4 MEMBER BLEY: We've got a few things going
5 twisty here. The stuff John started on originally, like
6 the 10 to the minus 2 flood, the 10 to the minus 5th
7 turbine missile, all this, this is stuff within the design
8 basis.

9 MR. DUDLEY: Yes.

10 MEMBER BLEY: And Recommendation 1 is trying
11 to resolve those things, right, or not?

12 MR. DUDLEY: No.

13 MEMBER BLEY: It's only looking beyond the
14 design --

15 MR. DUDLEY: Our new category of events,
16 of design basis external events --

17 MEMBER BLEY: Extension. But what about
18 these --

19 MR. DUDLEY: -- is beyond the deterministic
20 design basis.

21 MEMBER BLEY: That's your new category?

22 MR. DUDLEY: Yes.

23 MEMBER BLEY: But there's nothing in
24 Recommendation 1 looking at this patchwork of --

25 CHAIRMAN STETKAR: As I hear it --

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1 MEMBER BLEY: -- different things within
2 the design basis?

3 MR. DUDLEY: No.

4 CHAIRMAN STETKAR: As I hear it, they're
5 perfectly happy to have a 10 to the minus 2 flood, a
6 10 to the minus 5 turbine missile --

7 MEMBER BLEY: As their design basis?

8 CHAIRMAN STETKAR: -- a 10 to the minus 4
9 seismic event and a 10 to the minus 7 tornado --

10 MEMBER BLEY: I kind of missed that
11 along --

12 CHAIRMAN STETKAR: -- hoping --

13 MEMBER BLEY: -- the way and I guess at least
14 there I think Recommendation 1 was dealing with that
15 kind of thing in particular.

16 CHAIRMAN STETKAR: That's what I thought.

17 MEMBER BLEY: That was the patchwork it was
18 talking about.

19 CHAIRMAN STETKAR: I think among other
20 things.

21 MEMBER BLEY: Yes, among other things. Yes.

22 CHAIRMAN STETKAR: But that's the -- because
23 I'm a numbers guy.

24 MEMBER SKILLMAN: Dick, it seems to me that
25 --

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1 MEMBER BLEY: I mean we've slipped over into
2 this morning's session. I'm sorry. Go ahead, Dick.

3 MEMBER SKILLMAN: It seems to me that by
4 not including some of these external hazards this whole
5 effort points even more significantly to the very basis
6 of NTF 1, which is patchwork. As I sit here as an
7 experienced designer and operator, I don't see how one
8 can avoid including these. It seems to me that these
9 are the ones that really capture the industry's attention
10 and the world's attention when something goes wrong.
11 This is that unexpected or unaccounted for tsunami.
12 This is that bad earthquake. This is that high wind.
13 So it seems to be an error in significant judgment to
14 not include these. It seems like these ought to be a
15 part of the main event for risk-based regulation. By
16 addressing these then the accusations of patchwork in
17 regulation seem to be somewhat healed.

18 MR. DUDLEY: If you approach it that way,
19 you're kind of saying that any inadequacy with our
20 regulatory process that can be characterized by the term
21 "patchwork" is now the responsibility of Recommendation
22 1. And there are a lot of different things that could
23 come onto our plate if we did that. We don't have clear
24 distinction between what a design extension accident
25 is versus a design basis accident. We don't have clear

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1 guidance for what's adequate protection or where that
2 is.

3 I have my lawyer standing up here. I think
4 he thinks I'm going to need some help.

5 MEMBER SKILLMAN: Well, just a minute.
6 Before the lawyer jumps in, let --

7 MR. DUDLEY: We can't fix everything, is
8 what I'm trying to say, on Recommendation 1.

9 MEMBER SKILLMAN: I understand that.

10 MR. DUDLEY: There's so many parts of our
11 old program that could be criticized as being perhaps
12 slightly inconsistent or being somewhat of a patchwork.

13 And we can't really be responsible to fix all of that
14 under Recommendation 1. So we've carved out a small
15 amount of what we'll consider the patchwork. It's the
16 --

17 MEMBER SKILLMAN: Except that --

18 MR. DUDLEY: Right.

19 MEMBER SKILLMAN: -- external events is what
20 brought you to the Fukushima report.

21 MR. DUDLEY: Right, but --

22 MEMBER SKILLMAN: So don't be so hasty, if
23 I can be so bold.

24 MR. DUDLEY: Sure.

25 MEMBER SKILLMAN: Those are the things that

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1 really ought to make us stay awake at night. And those
2 are the things that we ought to be saying we have within
3 our ability to consider in September of 2013 the capability
4 to say we know what those things look like. It is the
5 dam failures and the flood that would come with that.

6 It is a tsunami that's bigger than we considered for
7 siting at coastal plants. It is an earthquake larger
8 than we had anticipated. It is a wind or a storm or
9 an ice event that we can conceive of and say, you know
10 what, that's serious stuff. That's what this is. So
11 to avoid this in this deaccession seems to me to be
12 irresponsible.

13 MS. DROUIN: Okay. Wait, wait, wait, wait.

14 I think --

15 MR. DUDLEY: I think it's more consistent
16 with what -- well, go ahead.

17 MS. DROUIN: I think there's
18 miscommunication going on here. This recommendation
19 is very focused in 2150, and it says "reassess the methods
20 for estimating the frequency and magnitude of external
21 hazards." We don't disagree with that. We agree with
22 that recommendation. And what we're saying is that there
23 is already a group of people doing that. And so we aren't
24 going to duplicate their effort. There is a group doing
25 that.

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1 There's also the 2012 appropriate which
2 requires NRC to reassess, and that's all tied in with
3 this other group. And also, oh, by the way, ASME ANS
4 PRA standards is also looking into this, of which we're
5 participating. So we agree with this recommendation
6 and we're saying it's already underway. We don't need
7 to start a new effort. We're already dealing with this.

8 MR. DUDLEY: I mean the Commission directed
9 us to pursue Recommendation 1 independently of the other
10 recommendations. And because these issues are being
11 addressed directly by folks working on those other
12 recommendations related to 1 and 2.2 and whatever on
13 external hazards, that's the reason we've excluded their
14 consideration from Recommendation 1. And we will go
15 seek those people out for their recommendation on how
16 to address this and what to put into the RMRF Implementation
17 Plan.

18 But all I'm saying is not that we're not
19 going to do it. It's just that we're not going to do
20 it under Recommendation 1.

21 CHAIRMAN STETKAR: Let me see if I can
22 rephrase it a little bit so I can maybe understand it
23 a little bit better.

24 Let's presume that we can perfectly,
25 perfectly with no uncertainty, estimate the frequency

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1 and severity of every possible external hazard. So I'm
2 talking about winds, floods, earthquakes, pestilence,
3 you name it. Meteorites. Grasshoppers. Let's presume
4 that I can do that and I have the current regulatory
5 framework that says if I know perfectly that the frequency
6 of a tornado strike on my plant is 9.99 times 10 to the
7 minus 8th, I don't care about it. Otherwise, I have
8 to design to a 1.00 times 10 to the minus 7 tornado.
9 And my design basis seismic event is 5.00 times 10 to
10 the minus 5. I can calculate that frequency and the
11 associated acceleration precisely. 4.99 times 10 to
12 the minus 5, beyond design basis. Yes, 4.99. One times
13 10 to the minus 5, even further beyond design basis.
14 One times 10 to the minus six, even further beyond design
15 basis.

16 Now, forget how I calculated those
17 frequencies. In terms of NTF Recommendation 1 as it's
18 cast right now, you're okay with the fact that I'm designing
19 to a 5 times 10 to the minus 5 seismic event and a 1
20 times 10 to the minus 7 wind event. Is that right? You're
21 okay with that?

22 MR. DUDLEY: Yes.

23 CHAIRMAN STETKAR: Okay.

24 MR. DUDLEY: I believe.

25 CHAIRMAN STETKAR: You don't know what to

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1 do with things beyond that. You're going to dump them
2 into I guess this other category, because they're beyond
3 design basis events. I don't know how I define that
4 category because my 10 to the minus 9 seismic event might
5 be -- I don't know if it's in that category or if it's
6 further on down below that category that gets into the
7 Risk Management Regulatory Framework NUREG-2150 notion
8 of risk too small to measure, or too small to care about
9 anyway.

10 I'm just trying to understand what's in -- so
11 you're fine with having those differences in the design
12 basis and --

13 MR. DUDLEY: I don't think I'm
14 responsible --

15 CHAIRMAN STETKAR: --just saying everything
16 that is worse than that is by definition beyond design
17 basis and we'll let other people worry about that somehow?

18 MR. DUDLEY: I mean I just don't think that's
19 part of Recommendation 1. That's all.

20 CHAIRMAN STETKAR: Okay.

21 MS. DROUIN: I think some of that stuff will
22 fall out once, you know, the Commission gives approval
23 to move ahead. As it is implemented and looking at the
24 details of it, you know, I am sure we're going to find
25 things that we're going to have to rethink about.

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1 CHAIRMAN STETKAR: What I'm worried about
2 is the timing of all of this. When you say after the
3 Commission considers this and gives us direction, people
4 think about it more and you say, oh, well, oh, gee, for
5 external events we really need to formally adopt this
6 notion of risk-informed categorization of events
7 according to NUREG-2150, and we need to make these clear
8 distinctions about what's adequate protection and what's
9 acceptable levels of risk and figure out, you know, how
10 to populate what's in the middle there. But, gee, we
11 only need to do that for external events or some subset
12 of external events that we can maybe think about today.

13 Whereas --

14 MS. DROUIN: I think this is just the nature
15 of the beast. I think that, you know, we do the best
16 we can and figuring out how things can get implemented,
17 but you know, we do just enough, you know, such that
18 we feel comfortable in our recommendation. But you just
19 cannot, given the time you have, think of all the pitfalls
20 that might be out there.

21 So, you know, we just have to understand
22 that, you know, okay, the Commission comes in and says
23 go out and develop this. Well, you know, we've already
24 said we're going to have to develop all this implementation
25 guidance. We've taken a whack at what we think are some

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1 of the big issues. You know, there is always, you know,
2 the possibility that there is something that, you know,
3 we just haven't thought about, or we thought about it
4 and we thought about it incorrectly, for lack of a better
5 word, and we're going to have to readjust.

6 CHAIRMAN STETKAR: When was NUREG-2150
7 published?

8 MS. DROUIN: It was published in June --

9 MR. DEMOSS: April 2012.

10 MS. DROUIN: No, April of 2012.

11 CHAIRMAN STETKAR: When did the NTF report
12 come out?

13 MS. DROUIN: Before that.

14 CHAIRMAN STETKAR: My point is we've had
15 a couple of years already to think about all this stuff
16 and we're saying we still can't do anything because current
17 day resources are too limited.

18 MR. DUDLEY: Actually, we were put on hold
19 when Recommendation 1 was first assigned.

20 CHAIRMAN STETKAR: Ah, you're right. I'm
21 sorry. You're right. You're right. You're right.
22 You're right.

23 MR. DUDLEY: The management had such a
24 workload --

25 CHAIRMAN STETKAR: You're right.

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1 MR. DUDLEY: -- that our whole effort
2 was --

3 CHAIRMAN STETKAR: I'm sorry. You're
4 right.

5 MR. DUDLEY: -- put on hold.

6 CHAIRMAN STETKAR: You're right. I
7 apologize. You are absolutely correct there.

8 MR. DUDLEY: Now it looks like we're way
9 behind schedule.

10 CHAIRMAN STETKAR: Yes.

11 (Laughter.)

12 CHAIRMAN STETKAR: Okay. Let's see if we
13 can get through the next couple of slides. I think we've
14 beat these things. And then we can take a break.

15 MS. DROUIN: Dick has to leave.

16 MR. DUDLEY: The next group of
17 recommendations is similar, only it goes to a systematic
18 program to collect, evaluate and communicate external
19 hazards information. And similarly we're going to let
20 the recommendation on whether or how to address that
21 in the RMRF Implementation Plan will be done by other
22 staff associated with those activities.

23 And the final -- Okay. This group of -- now
24 this impacts Recommendation 1. PR-R-5 and other related
25 recommendations to apply risk-informed

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1 performance-based defense-in-depth concepts in a more
2 quantitative manner. This is one of the ones that has
3 a one-to-one correspondence with RMRF and Recommendation
4 1. And we are recommending, the working group has
5 recommended and we hope that management approves and
6 it goes to the Commission, that we recommend pursuing
7 that as part of Recommendation 1. And then if that's
8 approved, it will either be implemented.

9 Currently I believe we've been told it will
10 be implemented as a follow-on activity to Recommendation
11 1, although the Commission could also have it implemented
12 as part of RMRF. I mean it doesn't really matter how
13 you do it. So either way I think is fine with me.

14 MS. DROUIN: So this is the place where it's
15 been de-coupled?

16 MR. DUDLEY: Right. This is before it was
17 going to be implemented as part of RMRF. Now we're saying,
18 well, no, maybe you don't. Maybe you want to de-couple
19 that one. That happened yesterday, right, after I left?

20 (Laughter.)

21 MS. DROUIN: Well, you know, this isn't a
22 slide that we showed at, you know, the public meeting.

23 MR. DUDLEY: Right.

24 MS. DROUIN: But this slide now needs to
25 be revised because only that first bullet is being

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1 considered as part of improvement. You know, we would
2 not recommend being done under RMRF any longer.

3 MR. DUDLEY: Right. That's our current
4 redirection, right.

5 MS. DROUIN: That's our current redirection?

6 MR. DUDLEY: Right. But we're going to
7 pursue it.

8 CHAIRMAN STETKAR: Is that it?

9 MS. DROUIN: And that's it.

10 CHAIRMAN STETKAR: Any member have any other
11 questions for the power reactors topics?

12 (No audible response.)

13 CHAIRMAN STETKAR: If not, I think we all
14 need a break. So let's take a break until 3:35.

15 (Whereupon, the above-entitled matter went
16 off the record at 3:16 p.m. and resumed at 3:33 p.m.)

17 CHAIRMAN STETKAR: Okay. We're back in
18 session. And as I understand it, Mary, you're going
19 to change the order of the presentation.

20 MS. DROUIN: Right. We're going to skip
21 to slide 55. Joe Rivers, who is our security expert
22 on the working group, he has to leave. So we're going
23 to let him do his presentation first.

24 MR. RIVERS: Okay. One comment. The RMRF
25 NUREG-2150 tended to not really dig very deeply into

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1 security. And so you won't see a lot of major actions
2 in security as far as this working group is considered.

3 MEMBER BROWN: Is this physical security
4 you're talking about?

5 MR. RIVERS: Yes. Yes. Basically in the
6 power reactor area, operating new and Generation IV
7 reactors, there were four recommendations and they all
8 were focused on trying to develop a common language between
9 the safety world and the security world in the area of
10 risk. And what we're working with Research on right
11 now is to develop a user need that actually focuses on
12 that area. It's an area we identified a number of years
13 ago in a risk-informing security workshop we had conducted
14 at Sandia National Laboratories. And so we're in the
15 process of developing that user need to get Research
16 to help us generate that, almost like a glossary to do
17 a comparison between safety and security terminology
18 in the area of risk.

19 MEMBER BLEY: Joe, let me ask you a question.
20 You said there's not much because there wasn't much
21 in the RMRF. Do you think there should have been more
22 in the RMRF, and are we trying to address that somehow?

23 MR. RIVERS: Well, personally during the
24 development of the RMRF I met with them several times
25 and suggested they dig a little bit more deeply into

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1 it. They chose not to. They focused predominantly on
2 the safety arena.

3 My challenge is that I've been tasked by
4 my office director to address better risk-informing
5 security for, you know, the regulatory process. So
6 outside of this working group I had a lot of activities
7 to include a workshop -- or we've got the Institute of
8 Nuclear Materials Management to put on in October down
9 in Georgia looking at a number of areas.

10 MEMBER BLEY: What I'm wondering for this
11 task group is since they haven't done in the RMRF, would
12 it be a good idea to somehow leave a placeholder or a
13 link that says if we develop the user need to the point
14 that we're approaching the depth we have in the others
15 that these should come together? It just strikes me
16 they really ought to be together. And we're preparing
17 something for the long-term future of the agency and
18 it, well, just would seem a shame not to at least point
19 that they should come together at some point down the
20 road.

21 MR. RIVERS: I think what we're going to
22 try to do is in the overall policy statement that we
23 put together we're going to make sure that it's put together
24 in such a way that it works both for the safety side
25 of the house and the security side of the house. We

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1 will also identify some of the activities in the report
2 that goes up to the Commission that we are doing in security
3 that are risk-related to improve the risk-informing in
4 security.

5 MEMBER BLEY: Okay.

6 MR. RIVERS: So we're not going to leave
7 them out and ignore them. We're going to at least let
8 the Commission know those types of things that we're
9 doing. But as far as responding to the recommendations,
10 it's not a lot of work that's involved here. And the
11 primary one that actually covers the power reactors,
12 non-power reactors and materials is actually trying to
13 develop a better understanding of how the two disciplines
14 talk about risk.

15 MEMBER BLEY: Okay. But at least the policy
16 statement will try to --

17 MR. RIVERS: It will try --

18 MEMBER BLEY: -- link the two?

19 MR. RIVERS: That's correct.

20 MEMBER BLEY: Okay.

21 CHAIRMAN STETKAR: Joe, I don't know if you
22 were here earlier. I asked Mary about one of the words.

23 I'm not trying to wordsmith certainly any of the
24 documents, but one word that I did stumble over several
25 times was the word "credible." And I asked Mary, you

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1 know, why that word -- and it appears several places
2 in the draft paper. And she said, well, that arose from
3 the security area. So I'll
4 ask --

5 MR. RIVERS: Well, to some extent it does.

6 One of the problems you have in the security area is
7 assigning the likelihood of the initiating event. And
8 so one of the things we try to understand in security,
9 you know, since we can't really assign a probability
10 to that or a likelihood to that is we try to identify
11 really what are the types of credible things that could
12 happen. You know, can the adversary actually construct
13 and improvise a nuclear device? Can he sabotage the
14 power plant? And if so, how could he do that?

15 CHAIRMAN STETKAR: But in some sense -- kind
16 of echoing a little bit what I think I heard Dennis saying,
17 is this policy statement and the supporting reports,
18 the supporting information behind it gives us a chance
19 to at least start to integrate those notions according
20 to what you were saying earlier.

21 And part of that is developing kind of a
22 common thought process and a common terminology. In
23 large part the paper expands on this notion of what can
24 go wrong, how likely is it, what are the consequences?
25 And retaining notions like what is a credible threat

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1 is somewhat counter to that. It may be difficult. You
2 might decide that a particular adversary is incapable
3 of constructing a particular type of device, which means
4 the what can happen part of the question for that particular
5 adversary is somewhat moot for that particular type of
6 device.

7 In other cases there might be real large
8 uncertainties about how likely is it.

9 MR. RIVERS: Yes, you know, generally what
10 you tend to do is you go to the intel community and they
11 go out and do an analysis. And what I have typically
12 found, based on the level of confidence I have with the
13 statements they're making, they're plus or minus a couple
14 hundred percent.

15 (Laughter.)

16 MEMBER BLEY: That's pretty good actually.

17 CHAIRMAN STETKAR: Okay. But that's
18 not --

19 MEMBER BLEY: Probably that would change
20 over time.

21 CHAIRMAN STETKAR: Right.

22 MR. RIVERS: So I think we try to understand
23 what it is. You know, even in the workshops that we've
24 hosted, the one we had at Sandia, also the one we're
25 having through the INMM in another month or so, we actually

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1 have panel discussions on essentially the likelihood
2 of the initiating event to try to find is there a way
3 that we can actually try to talk about that?

4 CHAIRMAN STETKAR: Yes.

5 MR. RIVERS: Or to understand how that
6 impacts the overall risk. The security initiating events
7 are so much different. A lot of it is based on
8 opportunities. You know, the things that happen in the
9 security realm tend not to be independent in many cases,
10 and so you can't just take the PRA and put it down in
11 the security world. You got to look at where can I take
12 advantage of the risk concepts and incorporate it into
13 the security realm? And of course predating PRAs were
14 the vulnerably assessments that were developed by the
15 national laboratories, and a lot of those approaches
16 were actually brought into the PRA world as well.

17 So I think there's a lot of similarities,
18 a lot of relationships. And essentially what we're trying
19 to do in the security world in NRC is to try to take
20 advantage of as much of that risk activity that we do
21 in other disciplines in NRC and try to take advantage of
22 it within the security realm.

23 MEMBER BLEY: I think the thing John's going
24 after; and I would deal with, too, is conceptually
25 separating what the set of possible threats is from their

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1 likelihood. And when one says "credible threat," that's
2 mixing the likelihood along with the -- so it's more
3 a matter of language at this point.

4 MR. RIVERS: It probably is. You know, I
5 think we look at things that could potentially happen.
6 You know, if it's not possible for an adversary to do
7 something, then we don't necessarily have to design our
8 security for it.

9 Given the potential consequences, even if
10 we believe it has what I would consider some level of
11 credibility or some level of likelihood, then we need
12 to design security to address it because if we don't,
13 we could have very, very bad days. You know, Fukushima
14 would not even compare to some of the things that we
15 have to protect against at NRC.

16 So, you know, as I said, it's the language
17 issue that we're trying to deal with.

18 CHAIRMAN STETKAR: But it's an important
19 language issue because it's something that if you asked
20 every person in this room; forget issues of security,
21 just what's a credible event, you'd probably get n
22 different answers to that that range from, well, gee,
23 I don't think, you know, 1 in 1,000 isn't very credible
24 to 1 in a 150 billion is not credible.

25 MR. RIVERS: Right. And that's --

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1 CHAIRMAN STETKAR: And that's a little bit
2 of what we have a problem with.

3 MR. RIVERS: That's one of the reasons that
4 we're trying to work with Research as one of our initial
5 activities is actually trying to get an understanding
6 --

7 CHAIRMAN STETKAR: Okay.

8 MR. RIVERS: -- so that we can try to speak
9 the same thing. So when I say something in the security
10 realm, you understand what it means within the safety
11 realm.

12 MEMBER RAY: In can show you an FSAR that
13 says a maximum credible earthquake is 10 to the minus
14 3.

15 CHAIRMAN STETKAR: Sure. And that's --

16 MEMBER BLEY: And we used to be able to show
17 you a lot that talked about maximum credible --

18 CHAIRMAN STETKAR: And over the last two
19 or three years we've had several Subcommittee meetings
20 where people have raised issues of this is not credible,
21 and it's difficult to pin them down on what they mean.

22 So my only observation was is I actually
23 do like a lot of what's in this draft paper and it brings
24 forth these notions. It says, well, we need to consider
25 security, you know, despite the fact that 2150 is not

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1 very elaborate on its assessment. But it does bring
2 the notion of we need to think about whether we call
3 it -- we're not going to call it a PRA or an ISA because
4 we don't like to use those terms. We're going to talk
5 about risk assessment in terms of what can go wrong,
6 how likely is it and what are the consequences? And
7 if we're going to bring security into that discussion,
8 it seems reasonable to kind of start thinking about it
9 in that framework.

10 MEMBER RICCARDELLA: It almost sounds to
11 me like from a security standpoint it's binary. If it's
12 a credible event, you assign a probability 1. And then
13 you're designing it as if it's incredible but zero.

14 MR. RIVERS: Essentially that's almost the
15 way you go, because essentially what you're doing with
16 security is buying an insurance policy. I'm going to
17 buy an insurance policy against something that I can't
18 accept happening. And so that's how you design security
19 because you -- could it happen? Yes. Can we accept the
20 fact that it has certain consequences? The answer is
21 no. So we have to have security to do whatever we can
22 to prevent it or mitigate it.

23 CHAIRMAN STETKAR: But there's a lot of
24 similarities because as a fallout of that you start to
25 define design basis threats, and those are credible and

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1 therefore you have to protect against them. And by
2 definition things that are not a design basis threat
3 must be an incredible event and I don't need to do anything
4 with those. I mean it's very, very similar to these
5 beyond design basis, you know, earthquakes or floods
6 or locusts.

7 MR. RIVERS: Except one of the things we
8 typically test for in security and generally in -- you
9 know, force-on-force exercises are run -- basically plan
10 for three exercises in a week and generally if the facility
11 does well on the first two exercises, we give an opportunity
12 for essentially a no-fault exercise that in most cases
13 is actually beyond the design basis one. So we can test
14 the robustness of the protection force.

15 So, you know, we do have a mechanism to do
16 that. We also find that when facilities are making capital
17 improvements at their sites they tend to go beyond the
18 design basis threat because they expect at some point
19 in time NRC will raise the design basis threat.

20 (Laughter.)

21 MR. RIVERS: So I think you have a tendency
22 to find that very few facilities will design their
23 facilities to what NRC calls a design basis threat.

24 So essentially in the next two slides you'll
25 also see that the same general element applies to non-power

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1 reactors and materials. One of the things in the non-power
2 reactors that was also talked in the recommendation from
3 NUREG-2150 was that we needed to better risk inform
4 security related to non-power reactors.

5 And as part of our current fuel cycle security
6 rulemaking we are looking at the attractiveness of nuclear
7 material to an adversary.

8 One of the things you find in the non-power reactors,
9 some of them employ high-enriched uranium, but it's a
10 very dilute form of high-enriched uranium. And we're
11 in the process of developing a material attractiveness
12 approach that will help take that into consideration
13 in assigning security requirements to the non-power
14 reactors. We're very closely with NRR on that activity.

15 MS. DROUIN: Okay. So now we will jump back
16 to -- what is your slide number?

17 CHAIRMAN STETKAR: Thirty-six or
18 thirty-seven, right?

19 MR. ADAMS: Thirty-five.

20 MS. DROUIN: Okay. Slide 36.

21 MR. ADAMS: Good afternoon. My name is John
22 Adams. I'm a senior level advisor for non-power reactors
23 in the Office of Nuclear Reactor Regulation and I'd like
24 to provide you a brief description of the four non-power
25 reactor recommendations included in NUREG-2150.

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1 You saw a slide pretty close to this earlier.
2 NUREG-2150 non-power reactor recommendations involve
3 defense-in-depth framework, risk analysis of non-power
4 reactors, external hazards and security.

5 The defense-in-depth framework that's
6 Recommendation NPR-R-1, apply the proposed
7 defense-in-depth framework to non-power reactor
8 licensing. We have taken a couple of actions recently.

9 One was Commission-directed work to streamline the
10 non-power reactor license renewal process and the
11 licensing process both. We addressed the renewal process
12 through an ISG and we started rulemaking on streamlining
13 the initial licensing process.

14 MEMBER CORRADINI: Are there any reactors
15 in the queue that this would apply to, or is it really
16 past the queue on relicensing?

17 CHAIRMAN STETKAR: There's a number of
18 non-power reactors in the relicensing queue. We had
19 a considerable backlog not too long ago which was the
20 actual motivation for the Commission to direct us to
21 develop the Interim Staff Guidance. That guidance really
22 used a deterministic risk assessment to say what portions
23 of the relicensing are the important ones? Where is
24 the risk associated? Because one of the differences
25 between power reactors and non-power reactors is the

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1 renewal process. With the non-power reactors it's
2 essentially a relicensing, or had been essentially a
3 relicensing.

4 So to expedite the review of this significant
5 backlog -- and I think we had a backlog at one time of
6 19 research reactors, where we had renewal applications
7 in house that we weren't working on.

8 MEMBER CORRADINI: Right. But I thought
9 all those had been cleared up.

10 MR. ADAMS: They are. The majority of them
11 are cleared up. There's still a few left actually.
12 They're all in progress now, but we haven't issued the
13 renewed licenses as of yet for I think six. I'm not
14 sure.

15 So what we looked at is how can we speed
16 this up. And in the ISG it applies to non-power reactors
17 less than two megawatts. Non-power reactors greater
18 than two megawatts still have to do the full relicensing.

19 And so that work does link up pretty close with some
20 of this work. So we just don't want to throw that out.

21 We want to consider this as we go forward. So this
22 is where what we're going to do is going to deviate a
23 little bit from kind of the power reactor direction is
24 we're going to take a look at the work that's already
25 done here.

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1 The rulemaking is in progress. The
2 regulatory basis is complete and I believe in FY '14
3 we have funding to start working on the proposed rule
4 to do that. So to some degree we need to move this along
5 so we can keep these somewhat in parallel so that we
6 can make them consistent with each other. So that's
7 going to be a challenge for us here.

8 CHAIRMAN STETKAR: John?

9 MR. ADAMS: Yes?

10 CHAIRMAN STETKAR: I haven't seen the ISG,
11 but sort of harkening back to some of what we were discussing
12 earlier this afternoon, I look at the defense-in-depth
13 policy statement as universal across, you know, any
14 regulated entity. Implementation of that policy
15 statement, you know, can obviously differ depending on
16 the risk and the particular entity. Is there anything;
17 and I hope the answer is no, in the ISG and the rulemaking
18 you've highlighted here under the second bullet that
19 is askew, let me put it that way, to the high-level
20 defense-in-depth policy statement as it's currently being
21 considered.

22 MR. ADAMS: As the draft currently exists
23 now I don't believe there's anything, because both of
24 these products really are kind of down at the
25 implementation level.

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1 CHAIRMAN STETKAR: Okay.

2 MR. ADAMS: And so I --

3 CHAIRMAN STETKAR: You know, regulatory
4 guidance is one thing. As soon as you say "rulemaking"
5 --

6 MR. ADAMS: Yes.

7 CHAIRMAN STETKAR: -- you get a little bit
8 more --

9 MR. ADAMS: Yes.

10 CHAIRMAN STETKAR: -- concerned about those
11 deviations.

12 MR. ADAMS: So I think the policy statement
13 is high enough level. The rulemaking really is more
14 on the implementation end of this, and so I don't think
15 there's any inconsistencies. And I'm not an expert in
16 any of these, however, I am aware of all of these, and
17 I'm not aware of anything at this point.

18 CHAIRMAN STETKAR: Good. Good. Thank you.

19 MR. ADAMS: Schedule. Because the
20 rulemaking for the proposed rule is going to start up
21 again, probably next two to five years we're looking
22 at completing this. Rulemaking is sometimes very hard
23 to anticipate when you're reaching the implementation
24 time, but I think this is a pretty good estimate on this
25 one.

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1 The second one is the risk assessment of
2 non-power reactors. The NUREG-2150 recommended the
3 evaluation of the utility or the resulting benefit from
4 performing a pilot risk assessment that includes
5 consideration of external hazards using modern risk
6 assessment methodologies at non-power reactors.

7 And it is important to note here that this
8 is to do an assessment or an evaluation of whether there
9 is any benefit to going to do a risk assessment. And
10 where that comes from is we've done similar evaluations
11 of the application of PRA methodologies, and those
12 assessments have concluded that they -- well, they don't
13 show a very significant benefit with respect to non-power
14 reactors. But this proposal would -- we would consider
15 all risk assessment methodologies, whether they're
16 probabilistic or deterministic, and take a look at the
17 state-of-the-art knowledge out there in these areas.

18 The result here we would anticipate would
19 either support funding and implementing a pilot program
20 on one of our non-power reactors or demonstrate to the
21 contrary that there's likely not a great benefit here.

22 But if there is a benefit showed, we would go to the
23 Commission and request the funding and then seek a
24 volunteer of one of our most likely higher-powered
25 non-power reactors to participate in a pilot program

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1 on that.

2 Timeline for this would probably be in the
3 next two to five years, and a lot of it depends on -- you
4 know, if the evaluation doesn't support moving towards
5 a pilot, it's probably closer to two years. If it does
6 support that, you're probably looking out at the five-year
7 or maybe a little longer.

8 MEMBER SKILLMAN: John, does the variation
9 in power level reactor design siting design features
10 for containment create such a spreadsheet of permutations
11 and combinations that this is an almost impossible task?

12 MR. ADAMS: That's been the problem
13 historically with PRAs is there's such a diversity in
14 the 31 non-power reactors that we license that it makes
15 it very difficult. I go back to my days at the power
16 reactors, and I'm old enough that I was resident inspector
17 and senior resident inspector as PRA was advancing.
18 And I remember that there was a lot of discussion about
19 the quality of the PRAs at these facilities because -- and
20 they had good data on -- a lot of data on systems and
21 types of components and everything like that. And then
22 in the non-power reactor world we don't have that
23 consistency.

24 So with any of these type PRAs, if your data
25 that you're putting in isn't very good, the uncertainties

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1 on what comes out of it are certainly high. And I think
2 that's been the case. And the NRC has looked at it.
3 The Office of Research has looked at PRAs on non-power
4 reactors and the industry themselves. The most recent
5 one I think was done by MIT to see what benefit could
6 be derived from a PRA. And they concluded that there
7 wasn't significant benefit, if I remember correctly.
8 It's been awhile since I've looked at it.

9 MEMBER BLEY: John, what's the real
10 distinguishing feature of a non-power reactor? Is it
11 use or is there some particular power level that defines
12 it?

13 MR. ADAMS: Well, one, a non-power reactor
14 does not generate electrical power.

15 MEMBER BLEY: That's the real discriminator.
16 So although we generally don't, you could have almost
17 any power of the reactor as long as it's not generating
18 electricity?

19 MR. ADAMS: That is correct. There is no
20 regulatory limit on the power level for a test reactor.

21 Now we do differentiate between a research reactor and
22 a test reactor.

23 MEMBER BLEY: Yes.

24 MR. ADAMS: So a test reactor typically
25 starts at 10 megawatts and above, or there are some unique

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1 features at 1 megawatt liquid cores greater than 1 megawatt
2 test reactor, a closed loop that goes through the core
3 where you can put a fueled experiment. If you have that,
4 that makes you a test reactor at 1 megawatt or above.

5 So there are other conditions. But overall you can
6 -- in fact our guidance on emergency preparedness stops
7 at 50 megawatts and says anything beyond 50 megawatts
8 will be handled on a case-by-case basis.

9 MEMBER BLEY: Do we have any that big?

10 MR. ADAMS: We do not. DOE is, however,
11 we do not regulate those.

12 MEMBER CORRADINI: And NIST is the largest
13 one you regulate?

14 MR. ADAMS: Yes, and that's 20 megawatts
15 and that's our only test reactor.

16 MEMBER Okay. And we had that one come through
17 for relicensing a year or two ago, yes.

18 CHAIRMAN STETKAR: You know, Greg, HFIR down
19 at Oak Ridge was not --

20 MEMBER BLEY: That's DOE.

21 CHAIRMAN STETKAR: That's DOE?

22 MEMBER BLEY: Yes.

23 MEMBER ARMIJO: DOE, APR.

24 MR. ADAMS: And APR is their other big on.

25 MS. DROUIN: You need to move on.

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1 MR. ADAMS: Okay. It's been told I got to
2 keep going, so if there's --

3 (Laughter.)

4 MR. ADAMS: Moving onto the next slide,
5 external hazards, there was a recommendation to reassess
6 the methods used to estimate the frequency magnitude
7 of the external hazards and implement a consistent
8 process. This is very similar to the power reactor
9 recommendation and it would be the desire of the staff
10 to maintain as much consistency as we can between the
11 work in the power reactor area and the work in the research
12 reactor area.

13 Test reactors do have to meet 10 C.F.R. 100
14 criteria, the same as the power reactors. The research
15 reactors, the licensing criteria there is they need to
16 be able to safely shut down the reactor. And so we don't
17 have any similar siting criteria in the regulatory
18 framework.

19 We have guidance framework. NUREG-1537
20 provides a large amount of guidance on what an application
21 for a research reactor must provide, however, that's
22 guidance. And if they chose not to follow that, we really
23 don't have a regulatory footprint to say you need to
24 do this. Our option would be to go out and say that
25 based on our analysis of this you cannot with reasonable

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1 assurance demonstrate with what you've provided that
2 can reasonably or safely shut down this reactor. We
3 would have a pretty tough burden of proof there.

4 And so, but the robustness of the research
5 reactor regulatory framework is intentionally that way
6 because of section 104(c) of the Atomic Energy Act, which
7 is the minimum regulation necessary to ensure public
8 health and safety. So we have a little bit different
9 threshold that we work to in the non-power reactor area,
10 which makes it a little bit more difficult.

11 CHAIRMAN STETKAR: John, I hate to do this
12 to you, but on this slide, if I go back to slide 32 where
13 we're talking specifically about power reactors, we had
14 some discussion about that slide and we heard that, well,
15 that's not being addressed in NTF Recommendation 1
16 because it's being treated elsewhere, in particular with
17 the other NTF, whatever it is, 2.1 or -- I lose track
18 of all of the alphabet soup -- and the appropriations
19 bill, and asked about these different 10 to the minus
20 4s and 7s and so forth.

21 On your slide here you're saying, well, we're
22 going to parallel that effort or be consistent with that.

23 Are you doing anything?

24 MR. ADAMS: Well, right now I'm doing quite
25 a bit. It's really not so much for the Risk Management

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1 Task Force at this point, but I am looking at this.
2 I am supporting the work of the Japanese Lessons Learned
3 Directorate on this and we are looking at all the external
4 events associated with the current licensed research
5 and test reactors. And one of the questions I have to
6 answer there, are there any gaps between the regulatory
7 environment? And so a lot of that work is being -- I
8 plan on using a lot of that stuff, because I don't like
9 to do this stuff twice. So I'm going to take advantage
10 of whatever I achieve here.

11 CHAIRMAN STETKAR: One of the reasons why
12 we were told to feel somewhat comfortable about this
13 is that the efforts that are being made by the power
14 reactor community to reevaluate both the seismic hazard
15 and the capabilities of their facilities to withstand
16 that hazard are being addressed under other elements
17 of the Near-Term Task Force process. Is that same level
18 of effort being applied for the non-power reactors?

19 MR. ADAMS: That is the level of effort that's
20 being applied right now.

21 CHAIRMAN STETKAR: So are you reassessing
22 the seismic, site-specific seismic hazard and --

23 MR. ADAMS: And we are looking at --

24 CHAIRMAN STETKAR: -- fragilities or --

25 MR. ADAMS: Yes. Now these are two separate

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1 actions.

2 CHAIRMAN STETKAR: Okay.

3 MR. ADAMS: And the power reactors could
4 go off this direction. And what is appropriate for power
5 reactors isn't always appropriate for research reactors,
6 and we may not be able to follow them. But to the extent
7 we possibly can, we would like to do so. We may have
8 to go in another direction completely. And
9 what I mean by that is the -- because with the JLD I've
10 been asking what is credible, because in the instructions
11 I got from the JLD is to reassess credible external events.
12 So I immediately asked the JLD what's credible?

13 CHAIRMAN STETKAR: Good for you. Good.

14 (Laughter.)

15 MR. ADAMS: And they said, well, we don't
16 have a definition for that. So the work that I've been
17 doing is with less than two megawatt reactors, because
18 I'm trying to assess them as a group. And so what I'm
19 assuming is the worst can happen. I don't care what
20 it is. I don't care. Pick how big an earthquake you
21 want. Pick. And then I'm going back and looking at,
22 okay, is the potential hazard from that event still
23 acceptable with respect to protection of public health
24 and safety?

25 CHAIRMAN STETKAR: Okay. With the less than

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1 two megawatt facilities this is a relatively simple
2 exercise, because you can punch a hole in the bottom
3 of the vessel and let the water go out on the floor and
4 have most of the building fall down on it and it just
5 sits there and it's fine.

6 When you get at the two megawatt point, it
7 starts to get a little bit more vent exercise to assess.

8 And once you get over three megawatts, it becomes a
9 significant problem. And those are going to look
10 -- probably starting to look more like power reactor
11 -- some of the concerns that we have.

12 So I intend to use all this that I'm developing
13 for the JLD. And I think a lot of it will be applicable
14 to this case also.

15 CHAIRMAN STETKAR: Okay. Thanks.

16 MS. DROUIN: Okay. We'll now move onto FSME.

17 MR. ABU-EID: Okay. Good afternoon. My
18 name is Boby. I'm senior advisor at FSME and I would
19 like to give you just a background of the recommendations
20 in NUREG-2150 regarding FSME activities.

21 In general, there were 11 recommendations
22 for FSME. These recommendations, they covered material
23 uses, low-level waste and uranium recovery. As was
24 indicated by Mary, the Commission was not included.
25 You may ask the question why it was not included? I

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1 will try to answer that question based on my guess analysis,
2 but that was the decision that the Commission was not
3 included in NUREG-2150. We did not have any
4 recommendations about the Commission.

5 These recommendations in general, they
6 included adoption of the concept of risk management/RMRF
7 proposal. They are requesting us to consider adopting
8 all these recommendations. Include environmental
9 reviews within the scope of risk management, incorporate
10 as well environmental reviews of course, and consideration
11 of defense-in-depth concept and features and addressing
12 security as Joe, he indicated, for materials in his
13 presentations.

14 More importantly which it was realized by
15 those -- or the NUREG-2150 is to coordinate closely what
16 the agreements starts and the regulated community. And
17 this is very important because certain activities actually
18 they are implemented by the agreement states. And
19 definitely we agree we need to coordinate with the
20 agreement states and other regulated communities.

21 To be more specific about these
22 recommendations, address risk management and RMRF
23 recommendations. There were recommendations for
24 material uses, low-level waste, two recommendations and
25 uranium recovery, two recommendations. The suggestion

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1 is to apply risk insights and performance-based
2 consideration as appropriate in the rulemaking. And
3 I underlined "as appropriate." We need to look at our
4 programs and how can we apply it? And develop guidance,
5 policy development, implementation including
6 environmental reviews within the scope of RMRF.

7 Our approach will be to address these
8 recommendations, to summarize the current FSME status
9 regarding use of risk-informed performance-based
10 approach. We do use risk-informed performance approach
11 for FSME activities. We would like to go back and look
12 and analyze this approach versus the -- as was indicated
13 by Mary, how is the approach that is recommended by RMRF.

14 And the provide examples of ongoing rulemaking and policy
15 statements. And then to coordinate with the agreement
16 states. In addition, we need to coordinate with other
17 federal agencies like EPA because of overlap of certain
18 activities and rules actually with EPA activities. And
19 of course, for example, uranium recovery, there's Indian
20 Tribes, it's important to consult with them because all
21 those people there can consult with them for decision
22 making and other regulated communities.

23 Our schedule is -- the short-term effort
24 is to do this comparison and to assist the status for
25 the next three to five years. And then if there is a

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1 need for guidance development, mid-term effort for 5
2 to 10 years. And in the long-term of course if there
3 is a need for new kind of regulations to be developed,
4 so which this is anticipated to be for 10 to 15 years.

5 However, there are currently regulations that we are
6 developing. We are already considering risk-informed
7 performance-based approach, but also we're considering
8 addition defense-in-depth as recommended by RMRF.

9 Regarding defense-in-depth there were three
10 recommendations, two for materials and one for low-level
11 waste. And the recommendation is to apply common risk
12 approaches to safety and security based on risk management
13 and defense-in-depth. So they are including both
14 security and defense-in-depth. And to consider more
15 explicitly defense-in-depth philosophy in rulemaking
16 guidance and implementation. And we are considering
17 that and we'll be assessing actually using
18 defense-in-depth.

19 The approach in order to address these
20 recommendations, try to see defense-in-depth, try to
21 define and to develop defense-in-depth guidance for
22 material uses and low-level waste. Also it is worthwhile
23 to note that we believe there is overlap between
24 defense-in-depth and performance assessment
25 methodology. For example, natural multiple barriers

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1 in our performance assessment may considered as
2 defense-in-depth. And through the analysis that was
3 discussed in part 61 and the design that we have could
4 be considered as part of defense-in-depth. So we do
5 believe there is some kind of overlap and we need to
6 try to define it for materials.

7 The schedule. In the short-term we
8 anticipate one to four years. For the mid-term for
9 developing detailed guidance, five to seven years. For
10 the longer-term, developing of regulations we anticipate
11 will be 7 to 10 years.

12 As I indicated that it is important. Yes,
13 we do agree we need to coordinate with NSIR agreement
14 state, federal and the regulated community. And those
15 are recommendations for materials. Actually three
16 recommendations and one recommendation for uranium
17 recovery. They propose to closely coordinate with the
18 leadership of agreement states. Even they propose
19 specifically to establish a joint NRC Agreement States
20 Working Group.

21 We're thinking about that actually if after
22 the policy statement is issued by the Commission and
23 this will be our starting part we are going to move forward
24 and try to coordinate or establish joint community in
25 NRC and agreement states. And of course we will regulate

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1 with all the communities that are involved in our
2 regulations.

3 Then establish common risk approach to safety
4 and security. And we are trying to coordinate with NSIR
5 reports in this regard. Again, we address the potential
6 dual regulations. There are certain dual regulations
7 that we consider. For example, in case of EPA
8 environmental and the EIS analysis. The way we conduct
9 our EIS we may realize there are some kind of overlap
10 of activities. We need to address the key issues when
11 we develop regulations and guidance. Our
12 schedule, anticipated 3 to 5 years for the short-term,
13 6 to 10 years for the mid-term and 10 to 15 years for
14 the long-term. Thank you. Do you have any questions?

15 (No audible response.)

16 MS. DROUIN: Okay. We're going to now switch
17 out players again. Dennis Damon and Michel Call will
18 talk to NMSS.

19 MR. DAMON: Okay. This is me. I'm this
20 person. Dennis Damon --

21 (Laughter.)

22 MR. DAMON: -- from the NMSS in the Fuel
23 Cycle Division. And this slide, the point I'm trying
24 to make here is to remind you the Fuel Cycle Division
25 -- actually it's not all fuel cycle. It's a part of

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1 the front end that starts at -- we regulate uranium
2 conversion facilities, enrichment facilities and fuel
3 fabrication facilities and de-conversion facilities.
4 But it doesn't include things like uranium, in situ uranium
5 extraction on the front end. It doesn't include any
6 of the back end, which is of course -- Michel Call is
7 going to have the spent fuel storage and spent fuel
8 transportation. And of course there's the other -- the
9 very back end with waste disposal. Fuel cycle is not
10 that. It's just this slice of the front end.

11 And I wanted to make the point that in thinking
12 about these there's this same kind of diversity. Possibly
13 not as bad as FSME has, but there's a diversity of types
14 of facilities. And there's actually a diversity of
15 regulatory requirements. There's a regulation for Part
16 40 facilities, which is conversion/de-conversion.
17 There's one for -- R-76 that covers the preexisting uranium
18 gaseous diffusion enrichment facilities. And then the
19 Part 70 covers the over facilities. However, even within
20 Part 70 the requirements are different for different
21 types of facilities. And so that has to be kept in mind,
22 that there's diversity both of the facility and of the
23 regulatory requirement.

24 MEMBER BLEY: If we had a reprocessing
25 facility, would that be a fuel cycle facility, or is

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1 it somewhere else?

2 MR. DAMON: No, it's a Part 50 right now.

3 MEMBER BLEY: Okay.

4 MR. DAMON: It's under Part 50. But that
5 is a project actually to consider having whether that
6 -- if there were a reprocessing plant should we do under
7 the existing regulation, or should there be a new
8 regulation, or should it be done under Part 70? There's
9 a project to consider that question.

10 MEMBER BLEY: That's going on now?

11 MR. DAMON: It's going on now.

12 MEMBER BLEY: Okay.

13 MR. DAMON: It's being handled by the Spent
14 Fuel Alternative Strategies Division.

15 MEMBER BLEY: Okay.

16 MR. DAMON: So right now, yes, reprocessing
17 is not a Part 70. It's a Part 50-type requirement. But
18 trouble is Part 50 doesn't have explicit design basis
19 events, doesn't have an explicit definition of what tech
20 specs are, but yet you have to have them. So that's
21 the problem.

22 Part 70 requires this thing called integrated
23 safety analysis which does elements of what are involved
24 with risk assessment. And that is it's a requirement
25 to identify accidents, their consequences and to some

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1 form of likelihood evaluation, although it's often not
2 quantitative. And so that's this slide just to remind
3 the background of what we're talking about here.

4 The recommendation in the NUREG-2150, there
5 was only one recommendation, but it had two sentences
6 in it, so I'm treating them separately because they say
7 two different things. And they're very top-level generic
8 -- is the way I would describe them as recommendations.

9 They're not really specific. And so I'll try to put
10 some flesh to what the specificity is of them as far
11 as what actually is happening.

12 The recommendation says that the Fuel Cycle
13 Regulatory Program should continue to evaluate risk and
14 associated defense-in-depth protection using insights
15 gained from ISAs. And then the second sentence says
16 ISAs should continue to evolve to support regulatory
17 decision making.

18 So next slide. Let me deal with the first
19 sentence, you know, using risk insights. We have been
20 using risk information from various sources, but the
21 ISAs themselves do have some risk information to inform
22 certain things. And then we're considering using and
23 developing more risk information to do various other
24 things.

25 One of the principal ones that's under -- has

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1 been directed by the Commission is to have a project
2 to consider whether we could have a risk-informed Fuel
3 Cycle Oversight Program that had some analogies to what's
4 done in the Reactor Oversight Program and using risk
5 significance to inform how we process violations. And
6 so that project is underway and being done. It's the
7 speed with which it's being done is somewhat being limited
8 by budgetary constraints and other priorities as directed
9 by the Commission.

10 So the schedule is anticipated to be several
11 years. There also is a program underway to -- and I
12 don't know whether to include this on the first sentence
13 or second sentence, but there's a program, a project
14 to consider more carefully natural hazard phenomena that
15 came out of the -- or a reaction to the Fukushima event.

16 And right now that's being done by having -- we set
17 up a team that went around and looked at all fuel cycle
18 facilities and how they were dealing with natural hazard
19 phenomena to see if something further needed to be done.

20 So that's a project that's also going on. So in fact,
21 it got very, very quantitative in one case using risk
22 information to address that area. Next slide.

23 CHAIRMAN STETKAR: Dennis, before you leave
24 this one, the sub-bullet says Risk Informing Fuel Cycle
25 Oversight Program. You said that's in progress?

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1 MR. DAMON: Right.

2 CHAIRMAN STETKAR: You're working on that?

3 Because the ISAs tend not to be quantitative, what's
4 envisioned for that process to develop the analogy of
5 significance determination on the oversight? Is it just
6 a black/white you have, or a parts count, or is it actually
7 going to be more quantitative?

8 MR. DAMON: No, the way I would say it is
9 it's not exactly true that the ISAs are not quantitative.

10 They're not required to be. Some of them aren't. Most
11 of them have some quantitative information. Many of
12 them use a risk index scoring method.

13 CHAIRMAN STETKAR: Okay.

14 MR. DAMON: And some of them are actually
15 quantitative. And all of them use a systematic method
16 to identify what could go wrong. They don't necessarily
17 need to get into complicated event trees and fault trees
18 --

19 CHAIRMAN STETKAR: Right.

20 MR. DAMON: -- but sometimes they do. It
21 depends on the complexity of the design. So consequently
22 the approach of this oversight program is to do risk
23 significance determination, pretty much similar to what's
24 done in ROP, but what you would do is use whatever
25 information you had from the ISA. But you would do an

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1 ad hoc risk evaluation of the specific violation that
2 occurs.

3 And I made a presentation earlier to the
4 -- a few years ago to the ACRS on this that the reason
5 we think that's feasible, or at least I think it may
6 be feasible in many cases, is that when something is
7 done, a violation occurs, it's usually in an isolated
8 part of the plant. It applies to that process. You don't
9 need to assess the entire facility and everything in
10 it. You just need to assess the impact of that one
11 violation on that one thing. And so it may be feasible
12 to do that.

13 CHAIRMAN STETKAR: I was just curious. I
14 can look up the transcripts and meeting notes and things
15 like that.

16 MR. DAMON: Okay.

17 CHAIRMAN STETKAR: Thanks.

18 MR. DAMON: Yes, so then the next slide.
19 This other sentence, ISA should continue to evolve.
20 Before I get into -- the question is I'm not sure what
21 was intended by the recommendation entirely, but one
22 has to understand that the ISAs are done very -- there's
23 a requirement, if they meet the requirement, there's
24 no regulatory tools to make things evolve or are limited.
25 But there are things that cause them to evolve. And

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1 that's what I'm going to get into here. Things
2 that can cause them to evolve are events occur that -- for
3 example, Fukushima makes us realize maybe we should take
4 a second look at something and whether there is more
5 of a hazard than was thought originally. Inspections
6 reveal deficiencies. That's another thing that causes
7 an ISA to maybe be revised. So things happen that cause
8 things to be revised.

9 And another thing is licensees on their own
10 make decision that they for various reasons decide that
11 they want to do ISAs in a different manner, and it usually
12 amounts to an improvement and an upgrade to something
13 generally better in different respects. And so ISAs
14 do evolve, but it's not like we can completely control
15 the thing from an NRC perspective unless we change a
16 regulation.

17 And I'll just mention a couple of things
18 that are going on. There is a Commission recommendation.

19 The staff wrote a letter to the ANS asking that a standards
20 group be formed to do a standard on ISAs, and that is
21 actually happening. So that standards group is working.

22 And we're directed in the same SRM to have Interim Staff
23 Guidance to address implementation issues. And so this
24 is the idea that there are things we've learned about
25 how ISAs have been done and things that have happened

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1 as events or inspection findings that have led to questions
2 that need to be clarified as far as guidance for future
3 license applications.

4 But the last bullet there reminds us that
5 existing ISAs are not required to be upgraded by these
6 guidance documents. The guidance document is -- we're
7 talking about future new applications, the guidance that
8 would be used in processing and reviewing an application
9 with an ISA from a new facility. However, existing
10 facilities, if they, you know, add new facilities or
11 make substantial changes, they might submit a license
12 amendment application that would involve again an ISA
13 and a review in accordance with this new guidance.

14 The other thing is ISAs aren't required to
15 be -- I should mention another thing about ISAs evolving
16 and upgrading and meeting new guidance and so on and
17 so forth is ISAs -- the way we used to regulate fuel
18 cycle facilities is they went through license renewal
19 every five years. So there was essentially a new license
20 review every five years in accordance with whatever
21 guidance existed at the time. Generally as facilities
22 have done their ISAs and gained experience, they've been
23 granted license extensions so that those renewals don't
24 happen every five years anymore.

25 However, the rule, Part 70, has a requirement

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1 for an annual updating, not upgrading but updating of
2 the ISA. So ISAs are expected to be current. The NRC
3 is expected to have in its possession an ISA summary
4 that is not more than one year old. So the ISA summary
5 possessed by the NRC. And so ISAs are continually updated.

6 They're a current thing. They're not an analysis that
7 was done 10 years ago and they stuck it on a shelf.
8 No, it's a living process is what they are. So that's
9 another reason that they evolve. They're reexamined
10 every year.

11 And so this standards thing, I'm just making
12 the schedule thing three to five years. That's a wild
13 guess. I really don't know how long that standard is
14 going to take. That's about all.

15 MS. DROUIN: The high-level waste.

16 MR. DAMON: Yes, and since there's nobody
17 here from high-level waste, I'll cover this one.
18 High-level waste, there was a recommendation for
19 high-level waste, as you probably are all aware of the
20 status of that project. The recommendation was if there
21 were any future revisions to the regulatory framework
22 for geologic disposal of high-level waste, you should
23 be doing it in accordance with this proposed Risk
24 Management Regulatory Framework. And, you know, I've
25 spoken with the people who would be involved in that

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1 if there were something to be done, if there is a new
2 regulation.

3 As you're probably aware the existing
4 regulation is highly risk-oriented. It's a performance
5 assessment that assesses the risk. You know, they would
6 certainly intend to have something like that or a new
7 regulation and that it would -- obviously if the Commission
8 puts out policy statement that endorses Risk Management
9 Regulatory Framework, they certainly would comply with
10 that in any new regulation. So I'm done.

11 MS. DROUIN: Okay. So we'll now move over
12 to storage and transportation.

13 MR. CALL: My name is Michel Call. I'm in
14 the Spent Fuel Storage and Transportation Division.
15 You can call me Mike. As you can see, I have an interesting
16 spelling on my name. It's French. But I felt growing
17 up like a boy named Sue.

18 (Laughter.)

19 CHAIRMAN STETKAR: At least it's not E,
20 double L, E.

21 (Laughter.)

22 MR. CALL: Right. Well, yes, then I'd really
23 have a problem.

24 In the NUREG there were two recommendations
25 that were made with regard to spent fuel storage. This

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1 is storage either in dry casks -- there is a wet storage
2 facility as well in Morris, Illinois. But I think the
3 focus of the NUREG was more on the dry storage.

4 The two recommendations. There was a lot
5 written in the recommendations themselves, but they boiled
6 down to, you know, determining what's an appropriate
7 level of risk and a sufficient level of defense-in-depth,
8 as well as evaluating the proper use of and explicitly
9 considering defense-in-depth in reviewing and
10 inspections for storage. The rest of the text in each
11 of the recommendations I feel takes more on what's the
12 approach to implementing those two parts, whereas
13 developing the risk information, determining what would
14 be appropriate risk metrics and any guidelines to go
15 with that. And for purposes of actually using it, having
16 staff that are trained with an understanding in the areas
17 of risk with defense-in-depth being an important piece
18 of that.

19 Just looking at the schedule, some of this
20 again is, as you've heard in any other areas, driven
21 in part by budget and resource considerations. This
22 would probably take, you know, an overall long-term,
23 you know, out to, you know, a five-year-type thing with
24 seeing progress along the way. So there might be small
25 steps that we incrementally go along, but for a complete

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1 implementation of the recommendations, you know, initial
2 estimate is to take about five years of so.

3 The next slide. So that's spent fuel storage
4 in a nutshell. The other aspect that we deal with in
5 my division is transportation of radioactive materials.
6 That includes spent fuel. That includes fresh fuel,
7 UF-6 packages, radiography source packages, other type
8 e-waste packages. So there's a whole range of materials
9 that are involved in that.

10 And for that area the NUREG proposed three
11 recommendations to focus on risk informing the guidance.

12 And the basis for that is because in the way that
13 transportation is set up, even domestically, we work
14 hand-in-hand with the U.S. Department of Transportation.

15 The U.S. DoE has an important role in transportation
16 of radioactive materials. And in addition to that a
17 lot of what we try to is to harmonize. And it's been
18 the staff or the agency position to harmonize, to a
19 practical extent.

20 That doesn't mean that we're exactly the
21 same, but we harmonize with the International Standards
22 for Transportation that the IAEA publishes. So there's
23 a real drive to harmonize with those standards. And
24 so in putting together the recommendations it was felt
25 that the greatest impact and the greatest effect that

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1 we could have would be to focus on making sure that the
2 guidance is risk- informed.

3 That being said, there are recommendations
4 to see if there can't be -- you can use risk information
5 to influence the International Standards or if we
6 determine, you know, as a basis for where we might decide
7 that deviation from that standards is an appropriate
8 way to go.

9 The IAEA regularly, every two years, assesses
10 the standards that they have to determine whether there
11 are changes that need to be made. And some of these
12 changes can be looked at as being, well, these are a
13 minor yet, you know, there's an influence whether it's
14 changing the A values for, you know, determining whether
15 it's a type A package or a type B package based on the
16 quantities of radioactive materials that are in the
17 package, which would then determine whether us as the
18 NRC would have to look at it. Or it could be something
19 that could be self-certified under the DoT Transportation
20 Regulations.

21 Now the approach that currently is considered
22 for working with the recommendations. There are similar
23 aspects as for storage. Again, looking at, you know,
24 what's the risk information that's there, what kind of
25 decision metrics do you want to use and any kind of

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1 guidelines that you want to put out to say what's
2 acceptable.

3 And this recognizes that there is some
4 information. Various studies have been done for spent
5 fuel transportation packages. You may be aware of the
6 recent Spent Fuel Transportation Risk Assessment study,
7 the SFTRA, that has gone out for comment and I think
8 is getting close to publication in final form. That
9 has been a update of various other studies. So there
10 is a fair amount that's been done for spent fuel, but
11 as far as the other radioactive materials, there may
12 be more that would need to be looked at beyond what may
13 or may not be necessary for spent fuel transportation.

14 Some of the things that we haven't seen which
15 could also be taken up as a near-term action would be
16 to ensure that we have a clear distinction between what's
17 the regulatory requirement? What does that really mean?

18 And what is staff's implementation practice or position
19 on that, or interpretation?

20 You could see a variety of guidance coming out of this,
21 perhaps some rule changes. To implement these specific
22 recommendations I wouldn't see a specific rule to say
23 this is how it's done, but it would be a process that
24 would influence future rulemaking.

25 And again, there might be some near-term

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1 progress that we could see, but overall it would be a
2 long-term-kind of implementation, so like in five years.

3 MEMBER BLEY: Mike, when you say you try
4 to harmonize with international guidance and regulation,
5 I can envision harmonizing -- you mean the same limits,
6 the same requirements, the same rules, or are there just
7 kind of reasonably similar -- what do you mean when you
8 talk about harmonizing these regulations?

9 MR. CALL: Well, I think my understanding
10 when I think of harmonizing is you look at -- and this
11 is why I would say it's harmonization more than similarity.

12 You want to be as similar as you think is appropriate,
13 meaning being the same. There are a lot of things. For
14 example the A2 values, there may be a few that we -- different
15 radioactive materials have a different A value, and that's
16 based off of the consequences of that material being
17 -- you know, whether it's direct radiation, whether it's
18 inhalation, or other factors. And from time to time
19 those get adjusted based off of improvements in the
20 science. And so the IAEA often will change those.

21 But is that something that we necessarily
22 need to do? Back in 2004 there were the DoT and the
23 NRC looked at harmonization with the 1996 version of
24 the IAEA standards. And there were 19 issues. I think
25 two or three may have been staffing-initiated, but the

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1 rest were looking at specific things that the IAEA had
2 implemented. So for those things that we felt it was
3 appropriate we proposed to adopt what the IAEA had done,
4 but there were certain areas where we differed from that.

5
6 So in harmonizing, I would say you would
7 be looking to be as similar or the same in as many respects
8 as you felt was appropriate, but having some room for
9 some deviation.

10 MEMBER BLEY: Okay.

11 MR. CALL: That's a long way to explain it,
12 but --

13 MS. DROUIN: Okay. We don't need to go
14 through that slide again.

15 MEMBER BLEY: One thing about this approach
16 is we'll never know if we saw all the slides.

17 (Laughter.)

18 MS. DROUIN: You did. You did.

19 MEMBER BLEY: Slides or milestones.

20 CHAIRMAN STETKAR: Yes, we will. I have
21 this many left over.

22 MEMBER BLEY: Oh, okay.

23 (Laughter.)

24 CHAIRMAN SCHULTZ: Are we not going to do
25 60? We're not going to security?

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1 CHAIRMAN STETKAR: We did security earlier.

2 MEMBER BLEY: He's been and gone.

3 MEMBER SCHULTZ: All right.

4 CHAIRMAN STETKAR: If you'd attend the
5 meetings, sir, you'd hear this.

6 (Laughter.)

7 MEMBER SCHULTZ: But we didn't do 60.

8 CHAIRMAN STETKAR: We did not do 60.

9 MS. DROUIN: Well, I thought we kind of did
10 it earlier, but --

11 CHAIRMAN STETKAR: She just wants to keep
12 away from slide. That's all.

13 MS. DROUIN: Yes, we don't need to go back
14 to the slide. We've had this discussion, I thought,
15 in detail.

16 CHAIRMAN STETKAR: We did.

17 MS. DROUIN: Okay. So what our current
18 schedule is is the tasking memo said that, you know,
19 we should have all this done, you know, six months after
20 the SRM is issued on the SRM for the NTTF Recommendation
21 1 SECY paper. So I am going to go back just to show
22 you date-wise.

23 So here's the NTTF SECY paper. Right now
24 it has been assumed that that Commission SRM is going
25 to come out March 2nd. That's a big assumption. It could

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1 come earlier. It could come later. But once it is issued,
2 that then selects our due date, because our due date
3 of September 2nd is the six months after this SRM comes
4 out.

5 CHAIRMAN STETKAR: Now, Mary, that September
6 date is the due date for the SECY paper, but when we
7 started this afternoon you said that your plan is to
8 issue -- let's call it drafts of the paper. In other
9 words, keep updating what we're talking about today.

10 MS. DROUIN: Right, because the tasking memo
11 told us to seek stakeholder output.

12 CHAIRMAN STETKAR: Right.

13 MS. DROUIN: So when we send up this SECY
14 paper, we want to be able to tell the Commission we have
15 gotten stakeholder output/input.

16 CHAIRMAN STETKAR: And all of that will occur
17 by definition between March 2nd and September 2nd, because
18 in principle, before March 2nd you're not precisely sure
19 about what you're writing in your paper, is that correct?

20 MS. DROUIN: Well, no, let's now go back
21 to this slide. We are starting now because six months
22 is not enough time for us to go out and first tell the
23 public here's what we got. Give us public comments,
24 etcetera.

25 CHAIRMAN STETKAR: Yes.

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1 MS. DROUIN: I think you understand the
2 process well enough that we have to keep three months
3 in reserve to get through concurrence. So that leaves
4 us three months to do the work.

5 CHAIRMAN STETKAR: Yes.

6 MS. DROUIN: So that three months out of
7 that six months we have reserved to do any potential
8 polishing, which means we have to go out for a very short
9 period of time so that when this SRM comes in, we want
10 to have a good handle on what we think we're going to
11 propose to the Commission in six months. And, you know,
12 we have a good idea what stakeholder feedback will be.
13 So this six months is just what I call a polishing phase.

14 CHAIRMAN STETKAR: Okay.

15 MS. DROUIN: So, you know, we've already
16 had, as I said, you know, one public meeting. We want
17 to hold another public meeting this year when we issue
18 this out for public review and comment. And it's going
19 to get issued, you know, like you all saw it, a work
20 in progress.

21 CHAIRMAN STETKAR: Yes.

22 MS. DROUIN: And we expect to have a public
23 meeting in 2014 after the SRM, but you know, it could
24 come that the SRM that's issued on Recommendation 1 has
25 no effect on us. So we could decide, you know, just

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1 to polish and not hold another public meeting.

2 To me the big question on the table is how
3 do we start and as we develop this receive ARCS input.

4 You know, you all raised a lot of questions, but I
5 certainly, you know, myself as the chair of this working
6 group would love to have more definitive feedback from
7 the Subcommittee. So how do we make that happen? Do
8 you all respond as a stakeholder part of the public review
9 and send in a letter? I mean, I'm just throwing options
10 out there on the table. I don't know the right path
11 to go down.

12 MEMBER BLEY: There's kind of only two ways.

13 I mean back when 1860 was done, there were a series
14 of subcommittee meetings where there was a lot of
15 interchange.

16 MS. DROUIN: Right.

17 MEMBER BLEY: That's one way, to have more
18 subcommittee meetings. The other way is to have a full
19 committee letter, right? We don't interact in any other
20 way.

21 MS. DROUIN: So, you know, I don't know.
22 Do we schedule another subcommittee meeting where now
23 you all have had time to digest all of this and you're
24 seeing the questions and everything we're raising and
25 we come back and it's more of us more in a listening

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1 mode than --

2 CHAIRMAN STETKAR: Well, I think we'll go
3 around the table later, but from my perspective I've
4 read and digested everything that you've given me to
5 chew on.

6 MS. DROUIN: Okay.

7 CHAIRMAN STETKAR: And I think you've heard
8 -- you know, the problem is we've had two meetings today
9 on two interrelated issues and I think some of us; at
10 least that includes me anyway, is still struggling about
11 how NTTF Recommendation 1 interfaces with your activity.

12 MS. DROUIN: Right, and that's an NTTF issue.

13 CHAIRMAN STETKAR: Right. Right. In my
14 mind at the moment I personally -- this is my personal
15 individual -- have more questions about NTTF
16 Recommendation 1 and what it means and what it doesn't
17 mean than I have on what you've written so far. My feedback
18 to you right now is I hope you don't start narrowing
19 down anything that you've written so far to become more
20 specific in anticipation of some type of focusing. In
21 other words, if you keep it broad in the context that
22 you have now, it seems to work, at least for me anyway.

23 MEMBER SCHULTZ: That's how I think the
24 Committee sees it, at least based on the input so far.

25 CHAIRMAN STETKAR: Yes.

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1 MS. DROUIN: Is it appropriate for me to
2 -- I mean this isn't a letter, but to ask the Committee
3 their opinion on that specific topic?

4 CHAIRMAN STETKAR: You can ask individuals.
5 We can give you, however many of us are around the table
6 here, individual opinions. But the ACRS speaks through
7 letters.

8 MS. DROUIN: No, I realize that. But at
9 least I can ask, you know, that when you all go around
10 the table to focus on some of these key issues that we're
11 raised.

12 CHAIRMAN STETKAR: Yes, if you're
13 finished --

14 MS. DROUIN: We're finished.

15 CHAIRMAN STETKAR: Okay.

16 MEMBER BLEY: Well, if they're finished,
17 I still have one more question about the presentation.

18 CHAIRMAN STETKAR: Okay. Good.

19 MS. DROUIN: Oh, okay.

20 CHAIRMAN STETKAR: Because I need to ask
21 for public comments and then we'll go around the table.

22 MEMBER BLEY: Can you pop up slide 11?

23 MS. DROUIN: Oh, my goodness.

24 MEMBER BLEY: And while you're looking for
25 slide 11, I'd say I really like the write-up. But 1860

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1 and 2150, if I can use a Haig-ism, operationalize risk
2 management. And that's to lay out how you do decisions
3 my integrating defense-in-depth and risk analysis. When
4 I read the write-up, it effectively says the same thing.

5
6 When I look at this chart, it doesn't say
7 anything about risk analysis. It is kind of buried in
8 the decision process and defense-in-depth is dangling
9 on the side. And that just bothers me. Just something
10 to think about. This slide doesn't go with the words
11 exactly. And I just wanted to say that to you.

12 MS. DROUIN: Okay. Fair comment.

13 MEMBER BLEY: And when I first saw it, I
14 was really thinking, boy, are they throwing away the
15 risk assessment side of this thing? And, you know, you're
16 not.

17 MS. DROUIN: Risk-informed and performance
18 base is integrated all throughout.

19 MEMBER BLEY: Yes. That was all I wanted
20 to say, John.

21 CHAIRMAN STETKAR: Okay. Before we go
22 around the table, let me ask if there are any comments
23 from any members of the public or anyone in the room.
24 See if we can get the bridge line open, if there's anyone
25 out there, and ask for comments then.

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1 If there's anyone out there on the bridge
2 line, first of all, we have no indication of whether
3 you're there or not. So if someone's out there, if you
4 can just say something. That's the only way we know
5 that the line is open.

6 MR. LAUER: This is Steve Lauer, NRR. I'm
7 here. I have no comments or questions.

8 CHAIRMAN STETKAR: Steve, thank you very
9 much.

10 So now that we know that the bridge line
11 is open -- someday we're actually going to get this system
12 fixed. A green light or something.

13 MR. LAUER: Actually, let me correct myself.

14 I do have one comment. You asked a question this morning
15 and they did not open the bridge line so you couldn't
16 hear me. Other than that, no comment.

17 (Laughter.)

18 CHAIRMAN STETKAR: Oh, okay. Well, Steve
19 Schultz is making notes there busily.

20 Okay. In all seriousness, is there anyone
21 out on the bridge line who has any comment? And if so,
22 please identify yourself and let us know.

23 (No audible response.)

24 CHAIRMAN STETKAR: Okay. Hearing nothing
25 and knowing that the bridge line is indeed confirmed

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1 to be open, I will assume that we don't have any comments.
2 We'll re-close it because it does make clicky noises
3 that are annoying.

4 And as we normally do, first, before we go
5 around the table, thank you, Mary, for a very informative
6 presentation.

7 MS. DROUIN: Thank you.

8 CHAIRMAN STETKAR: I appreciate it. You
9 got through an awful lot of material. I wasn't quite
10 sure you were going to get through it all, but you did
11 a heroic job that actually was organized very well.
12 We really appreciate that.

13 We'll go around the table and again to address
14 if you have any lingering comments that you'd like to
15 make or if you'd like to address feedback to Mary
16 individually on anything related to her direct report.

17 I will start with Dr. Corradini.

18 MEMBER CORRADINI: Well, I'd just thank Mary
19 since she was our star of the day, morning and afternoon.

20 I guess I'm still trying to figure out how the two,
21 the morning and the afternoon fit together. So I think
22 I've made enough comments about that. I'm not going
23 to repeat them, only to say that I still think the afternoon
24 session provides the unifying context for what occurred
25 in the morning. And so that's how I still tend to interpret

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1 things. And I guess the chance we have to engage other
2 parts of the staff, the management, to help them see
3 that way, I welcome the chance.

4 CHAIRMAN STETKAR: Good. Joy?

5 MEMBER REMPE: Well, I think you've done
6 a great job at meeting what the Chairman's tasking memo
7 asked you to do. I tried to raise a couple of questions
8 just on the detailed implementation, and I think that
9 ultimately those kind of questions and the cost will
10 be important.

11 MS. DROUIN: Yes.

12 MEMBER REMPE: And so again I guess that's
13 the one comment that I guess I'd like to raise. That's
14 it.

15 CHAIRMAN STETKAR: Mr. Brown?

16 MEMBER BROWN: I will pass. I have nothing
17 else to say other than thank you.

18 CHAIRMAN STETKAR: Pete?

19 MEMBER RICCARDELLA: I too have no comments.

20 CHAIRMAN STETKAR: Mike?

21 MEMBER RYAN: I'd like to thank our NMSS
22 members for their participation today, because it's nice
23 to see that the risk-informing approach is not only
24 something that, you know, has been developed and
25 implemented for reactors, but also now there's, you know,

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1 kind of a more solid framework for the materials side
2 of the house to begin to address risk in a kind of integrative
3 way. So that to me I think is kind of a big step at
4 this stage that you're moving that along. Correct me
5 if I'm wrong, but I think it's clear you put a lot of
6 work in to me knowing NMSS a little bit better than perhaps
7 some of my colleagues. But congratulations on that.
8 We'll look forward to your implementation guidance.
9 Thank you.

10 MEMBER RICCARDELLA: I do have one comment.

11 As a newcomer, I really appreciate your list of acronyms.

12 (Laughter.)

13 CHAIRMAN STETKAR: We'll remember that when
14 we get to the gobbledygook you guys talk about.

15 (Laughter.)

16 CHAIRMAN STETKAR: Sam?

17 MEMBER ARMijo: Yes. No comments. I missed
18 too much of the meeting to comment at this point.

19 CHAIRMAN STETKAR: Harold?

20 MEMBER RAY: I was on an educational mission
21 and I'm not a part of the Subcommittee, so --

22 (Laughter.)

23 MEMBER RAY: -- I won't make any comments.

24 CHAIRMAN STETKAR: But that's never stopped
25 you from making comments in the past.

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1 MEMBER RAY: Well, no, I lack the basis right
2 now to make a comment. It doesn't stop me, you're right.

3 MEMBER BLEY: Yes, I have a few comments.
4 I really like the paper. I like what you've pulled
5 together. I started out this morning being less than
6 comfortable with the idea that defense-in-depth is
7 program-specific and should be put aside and get the
8 reactor stuff done first.

9 I've changed my mind. I think the
10 implementation of defense-in-depth -- you know, the more
11 I think about it, clearly has very much design-specific
12 -- well, program-specific aspects. Of course so does
13 risk assessment and how you do it. I hope when the policy
14 statement draft comes out that it deals with consistency
15 in both areas at the high level, which you seem to be
16 doing now, and that doesn't go away.

17 One thing I noticed, as 2150 struggles a
18 lot or tries a lot to talk about how to balance
19 defense-in-depth and risk; and 1860 did some of that,
20 I don't know if you're going to try to do that, expand
21 that as you go to this policy recommendation, but it
22 sure needs as much effort as the rest of what we've been
23 seeing. So I think that's one area. Maybe you just
24 haven't gotten there yet. But thought about how you
25 do that is a bit tricky and lots of us have struggled

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1 with that at various times. And if that can be laid
2 out in some way in the policy statement, I think it would
3 be helpful. I can't tell you now.

4 MS. DROUIN: Okay.

5 MEMBER SCHULTZ: Mary, I want to thank you
6 for your presentation today as well. I'm glad that we
7 had both the morning session and the afternoon session
8 today, because I think that's helped the Committee
9 immensely to understand what has been going on with it,
10 at least two similar teams that we saw this morning and
11 this afternoon. And I think in terms of formal feedback
12 from the Committee, following up on Mike Corradini's
13 comment, I'd be surprised that as we prepare our letter
14 associated with the NTTF Recommendation 1 that we will
15 likely provide comments to the Commission related to
16 this topic going forward as well and how we feel they
17 should integrate together so that this material will
18 in fact be an overarching policy statement that will
19 in fact mesh with the NTTF work that we discussed this
20 morning.

21 Secondly, I want to follow up on Mike Ryan's
22 comment and thank you and also Gary for bringing to the
23 Committee the number of people that we saw this afternoon,
24 because it put faces to the processes of identifying
25 how the agency needs to address this across the different

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1 applications that the agency is addressing for this
2 particular policy issue. So it was very helpful to have
3 the opportunity, as Mike indicated, to see others talk
4 about how this was going to work in their areas and what
5 they're trying to bring to the table associated with
6 its application. So thank you very much.

7 CHAIRMAN STETKAR: Dick?

8 MEMBER SKILLMAN: Mary, and to your
9 colleagues, thank you for a very thorough presentation
10 today. I would like to reinforce a comment that John
11 Stetkar made a number of hours ago, and that is encouraging
12 you to keep this at a very broad scope and don't allow
13 it to become minimized or narrowed to where the broadness
14 of its applicability becomes diminished. By keeping
15 it at a high level it becomes a tool for many, many users.

16 But if it begins to be narrowed, it becomes one more
17 example of what NTTF Recommendation 1 is going after,
18 and that is the fracturing and the piecemeal approach.

19 By keeping it broad, it maintains an integrity that
20 I believe is important. Thank you.

21 MEMBER BALLINGER: I have the same comments
22 about you guys doing a really bang-up job of doing this
23 presentation and coming in here and being a punching
24 bag for us. I echo Mike's and John's and others' comments
25 about the issue of the overarching nature of the process

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1 and subsuming the NTTF within that, make sure that the
2 two are rational, rationalized together. I don't see
3 it can how any different -- has to be.

4 MEMBER BLEY: I wanted an extra shot, because
5 I said everything I wanted to about this afternoon, but
6 I wasn't as comfortable with what I heard this morning
7 and my interpretation of what I was hoping to see out
8 of Recommendation 1. I mean a lot of it's really good,
9 but some of it seems to be dodging some of the issues
10 I thought were important. That was for this morning,
11 but they fit together so much I wanted to toss that in.

12
13 CHAIRMAN STETKAR: Well, they do. I'll just
14 get in my last 30 seconds here. And I echo some of Dennis'
15 statements. And in terms of feedback to you, Mary, I
16 think you've heard a little bit from us and say, well,
17 how will the ACRS communicate, you know, with you regarding
18 this initiative? I think you're hearing from us that
19 you'll probably get feedback from the ACRS through our
20 letter on NTTF Recommendation 1. Not direct feedback
21 to you --

22 MS. DROUIN: Right.

23 CHAIRMAN STETKAR: -- you know, that has
24 this title on it, but certainly relevant feedback to
25 the staff and most likely encouragement, you know, for

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1 what you're doing. And as I said, personally I really
2 liked the paper. I think it's got the appropriate breadth.

3 I'd again caution you not to try to get too deep into
4 trying to flesh out details of perhaps, you know, a
5 framework or guidance or draft criteria, you know, in
6 areas. Like I said --

7 MS. DROUIN: That is not our plan.

8 CHAIRMAN STETKAR: -- that's section 4.
9 You obviously have to think through that, but try to
10 stay away from that. That will help, you know, you
11 responding to some of the comments you've heard here
12 today also.

13 MS. DROUIN: What we have thought of doing
14 is creating a separate enclosure that starts outlining
15 our thoughts on program area-specific guidance.

16 CHAIRMAN STETKAR: Oh, yes, that might be
17 helpful as long as it's clearly separated because that's
18 --

19 MS. DROUIN: Yes, it would be a complete
20 separate document.

21 CHAIRMAN STETKAR: Otherwise, people are
22 going to start focusing too much on the details too quickly
23 --

24 MS. DROUIN: Right.

25 CHAIRMAN STETKAR: -- and you wind up getting

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1 pulled down a rat's hole trying to, you know, respond
2 to why did you include this or why did you exclude this
3 other thing. When at this level we're still talking
4 about broad policy initiatives that the Commission needs
5 to buy into to then give the entire staff the guidance
6 in each of the areas to start fleshing out some more
7 of those details.

8 MEMBER BLEY: On the other hand though, if
9 we're going to do it in detail for reactors, getting
10 something on the table about what's different is probably
11 important.

12 CHAIRMAN STETKAR: That is, yes.
13 Otherwise, anything else any of the other members?

14 (No audible response.)

15 CHAIRMAN STETKAR: If not, again, thank you
16 very, very much.

17 MS. DROUIN: Thank you.

18 CHAIRMAN STETKAR: This is useful. You
19 know, as you start working through later incarnations
20 of this report, just keep in touch with John. You know,
21 we can schedule Subcommittee meetings pretty easily.

22 MS. DROUIN: Which is what our intent -- I
23 think when we had met with you guys before we had scheduled
24 another subcommittee like in January, February.

25 CHAIRMAN STETKAR: Something like that.

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1 MS. DROUIN: When we've gone through, you
2 know, another major change based on public comments and
3 other direction.

4 CHAIRMAN STETKAR: Yes, and that probably
5 make sense given everything else that we have. So, good.

6 With that, we are adjourned.

7 (Whereupon, the meeting in the
8 above-entitled matter was adjourned at 5:09 pm.)
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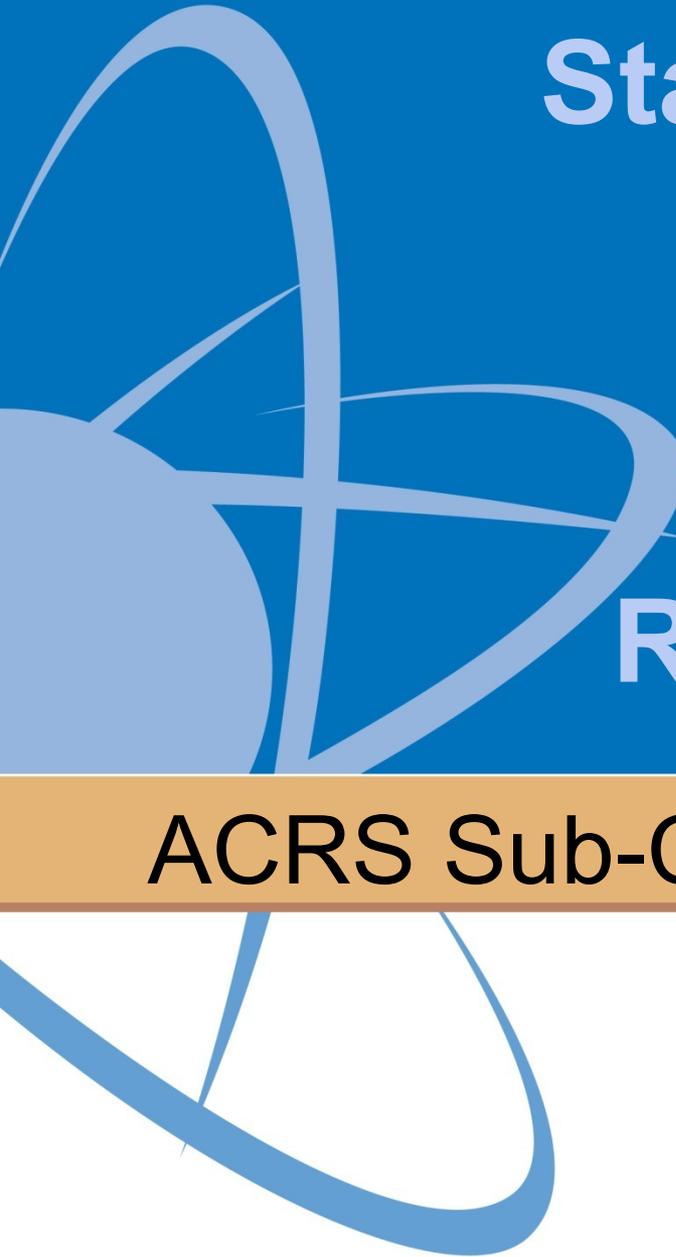
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**Status in Dispositioning
Recommendations in
NUREG-2150,
Risk Management
Regulatory Framework**

ACRS Sub-Committee Meeting

September 4, 2013

Acronyms

ANS	American Nuclear Society	LLW	Low Level Waste
AS	Agreement States	NGNP	Next Generation
ASME	American Society of Mechanical Engineers	NMSS	Office of Nuclear Material Safety and Safeguards
CTA	Commission Technical Assistants	NPP	Nuclear Power Plant
DBE	Design Basis Events	NTTF	Near Term Task Force
DID	Defense-in-Depth	OGC	Office of General Council
DOE	Department of Energy	PRA	Probabilistic Risk Assessment
EPA	Environmental Protection Agency	RES	Office of Nuclear Regulatory Research
FA	Federal Agencies	RMRF	Risk Management Regulatory Framework
FSME	Office of Federal State Materials and Environmental Management Programs	RMTF	Risk Management Task Force
HLW	High Level Waste	SRM	Staff Requirements Memorandum
ISA	Integrated Safety Analysis	U	Uranium
ISG	Interim Staff Guidance	UR	Uranium Recovery
		WG	Working Group

Purpose of Briefing

- Brief ACRS on status of effort
- Plans for soliciting public comments
- Solicit ACRS feedback

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Background, Summary, Scope, Approach

Background

June 14, 2012 Chairman's Tasking Memo

- *“. . . the staff should review NUREG-2150 and provide a paper to the Commission that would identify options and make recommendations, including the potential development of a Commission policy statement. In developing its options, the staff should consider how modifications to the regulatory framework could be incorporated into important agency policy documents, such as the Strategic Plan.*

Also, the staff should seek stakeholder input on its proposed options and recommendations. This paper should be provided within six months of the staff requirements memorandum on the NTF Recommendation 1 notation vote paper.”

Background (Cont'd)

- Working group formed of staff from each program office:
 - Mary Drouin, RES, Chair
 - Brian Wagner, RES
 - Richard Dudley, John Adams, NRR
 - Dennis Damon, Michel Call, NMSS
 - Joseph Rivers, Randy Sullivan, NSIR
 - Mark Caruso, William Reckley, NRO
 - Bobby Abu-Eid, FSME
 - Geary Mizuno, OGC
- Steering committee formed from deputy office directors:
 - Steve West, RES, Chair
 - Jennifer Uhle, NRR
 - Brian Holian, FSME
 - Scott Moore, NMSS
 - Gary Holahan, NRO
 - Marc Dapas, NSIR

RMRF Report Summary

- Over 50 recommendations proposed
- Recommendations proposed in an hierarchal manner
 - Across agency
 - Adopt Risk Management Regulatory Framework (RMRF) through a policy statement
 - Per program area
 - Proposes how to implement RMRF via rulemakings, guidance development

Current Direction from DEDOs

- SECY paper would not contain “options”
- SECY paper would request Commission approval
 - To issue a draft policy statement for formal public review and comment
 - Major element/focus would be on defense-in-depth
 - On how the staff proposes to implement those recommendations from NUREG-2150 that should be pursued
- SECY Paper would contain
 - A proposed conceptual policy statement
 - A high-level discussion summarizing staff response to program area recommendations

Proposed Scope in Responding to RMRF Recommendations

- Policy statement would establish Commission expectations across the entire agency regarding a risk management regulatory framework
 - A major emphasis would be defense-in-depth
- Plan would only address, for each program area, those recommendations that the working group believes should be pursued
 - The basis for others will be discussed in an enclosure to the SECY paper
- Working group will not address areas not included in NUREG-2150
 - For example, decommissioning
 - Areas not included in plan will be discussed in SECY paper

Proposed Approach to Policy Statement

- Policy statement will be developed in a logical, systematic manner to achieve consistency across the agency regarding a RMRF
- Policy statement will be based on a top-down, hierarchal structure
- Generic RMRF and defense-in-depth policy will be developed for the entire agency

Proposed Conceptual Approach

RMRF Proposed Policy Statement

Overall Generic Policy Statement on Risk Management
Regulatory Framework

- Mission
- Objective
- Defense-in-depth Approach
- Decisionmaking Process



Overall Generic Statement
on Defense-in-Depth

- Definition
- Objectives and principles
- Levels of defense
- Decision Criteria



Overall Generic Policy Statement on
Decision Process

- Identify Issue
- Identify Options
- Analyze
- Communicate
- Deliberate
- Implement
- Monitor

Tentative Proposed Plan

- For each proposed recommendation for each program area, a high-level description of the proposed activity to be performed will be discussed
 - The discussion will include high-level milestones, resources and schedule
 - For those RMTF recommendations already being pursued, the plan will reference
- The plan will identify any policy issues that will need to be addressed by the Commission for each program area



RMRF

Recommendations



RMRF Recommendations *Agency Wide*

- R-2.1
- R-2.2
- R-2.3
- R-2.4

Regulatory Program Area: Agency-Wide

- Recommendations in NUREG-2150:
 - Issue Policy Statement that establishes a Risk Management Regulatory Framework that
 - Adopts risk-informed, performance-based approaches
 - Framework defined in terms of “managing risks”
 - Framework should recognize and address uncertainties
 - Major element will address defense-in-depth
- Status – an **initial conceptual** policy statement has been developed

Draft Document

- First Section provides a Background Discussion
 - Summary of risk management activities and policies including information on international and other agency efforts
 - Defense-in-depth and other key considerations
- Second Section provides a discussion on how the policy statement was developed
- Third Section provides the actual policy statement
 - Use of an risk-informed and performance-based decision making process
 - Tools for obtaining risk insights and information
 - Role of defense-in-depth
 - Program area specific considerations
- Fourth Section provides more details on regulatory implementation

Chairman's Direction

- Chairman tasking memo directed staff to seek stakeholder input
- Solicit public comments continually by sharing work from the start
 - Issue "works-in-progress" as draft is developed and revised throughout the process
 - Hold public meetings throughout the process
 - Develop questions to help focus desired input
- ACRS provide comments as part of the public review and comment period?

Current Questions

- Are Sections I (Background) and II (Development of Risk Management Regulatory Framework Policy Statement) informative? Do they provide useful information in helping to clarify the need, purpose, goals, etc. of the policy statement in Section III? What information is not necessary and what type of information should be added, if any?

Section III

- Is the purpose and goal of the policy statement clear? If not, where is clarification needed?
- Is the proposed conceptual RMRF policy statement useful in clarifying the Commission's intent to use a risk-informed and performance-based defense-in-depth approach in performing its regulatory function? If not, what needs to be clarified?

Current Questions (cont'd)

Section II

- Should the current PRA policy statement be replaced or subsumed/incorporated into this policy statement?
 - What would be the benefit? What would be the negative?

Section III.B

- If subsumed, is the proposed manner of incorporating the PRA statement reasonable? If not, why not?
- Should the policy statement establish a Commission expectation that for all program areas, licensees are expected to have a risk analysis that is commensurate with the activity and technology?

Current Questions (cont'd)

Section III.A:

- Do the proposed key elements in the RMRF process represent a complete and reasonable set?
 - If not, what modifications should be made?
 - Are other elements needed to cover the full spectrum of regulated activities?
 - Are the elements sufficient to develop a consistent decisionmaking approach across all regulated activities?

Current Questions (cont'd)

Section III.C:

- Should defense-in-depth be a key aspect of a RMRF? If not, why not?
- Will such a policy statement be useful in determining the extent of defense-in-depth needed in each program area?
- Is the approach proposed for characterizing defense-in-depth clear? If not, where is clarification needed? Is the strategy reasonable? If not, why not?
- Is the definition provided for defense-in-depth clear? If not, why not?
- What are the key attributes of defense-in-depth?
- Are the basic levels of prevention and mitigation reasonable? If not, why not?

Current Questions (cont'd)

- Are the definitions of prevention and mitigation clear and reasonable? If not, why not?
 - Are they sufficiently flexible to support all program areas? If not, where not?
 - Should and can these levels be further detailed (i.e., more specific) and still be sufficiently flexible to support all program areas?

Current Questions (cont'd)

- Is it reasonable to expect the levels of defense to be independent such that failure of one level not leading to failure of subsequent levels? If not, why not?
 - Should the NRC accept different levels of rigor, or different levels of confidence, in demonstrating that there is independence between levels? Could the level of rigor vary depending upon the nature of the activity and the risks associate with loss of independence?
 - Are there other considerations that should be considered in determining the acceptable level of rigor or confidence in demonstrating independence between layers?

Current Questions (cont'd)

- Is it reasonable to expect that defense-in-depth
 - Ensure appropriate barriers, controls, and personnel are available to prevent and mitigate exposure to radioactive material according to the hazard present, the credible scenarios, and the associated uncertainties; and
 - Ensure that the risks resulting from the failure of some or all of the established barriers and controls, including human errors, are maintained acceptably low consistent with the applicable acceptance guidelines.
 - Overall, ensure that each regulated activity has appropriate DID measures for prevention and mitigation of adverse events and accidents.
 - If not, why not?
- Are the proposed defense-in-depth principles and decision criteria complete? Are they useful in deciding the extent of defense-in-depth needed in a program area? If not, how should they be improved?

Current Questions (cont'd)

Section III.D:

- Are the proposed program area specific policy considerations clear and complete? If not, what modifications should be made? Are others needed to cover the full spectrum of regulated activities?

Overall Questions:

- How could the proposed RMRF policy statement be made more useful to licensees, applicants and other stakeholders?
- Is the policy statement sufficiently flexible to address the specific program area activities (e.g., reactor versus transportation) with regard, for example, to the type of risk analyses, to the defense-in-depth principles?
- What implementation challenges do you foresee?

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RMRF Recommendations *Power Reactors*

- PR-R-1,2,3,4,5,6
- OR-R-1,2,3,4,5,6
- NR-R-1,2,3,4,5,6
- GIV-R-1,2,3,4,5,6

Power Reactors (Operating, New, Generation IV)

- NUREG-2150 for power reactors divided into power, operating, new and Generation IV
- Recommendations involve
 - Design basis events
 - External hazards
 - Defense-in-depth
 - Security (addressed separately)
- Similar recommendations for each reactor program area

Power Reactors (Operating)

- Addresses design basis events

- PR-R-1
- OR-R-1



Design-basis events and accidents should be reviewed and revised to integrate insights from operating history and modern methods such as PRA

- Approach

- would require review of operating experience and technology improvements over past 40 years for new estimates of event frequency
- would involve changes to Regulatory Guides and Standard Review Plans
- being considered as part of Improvement Activity 1 for disposition of NTF Recommendation 1

- Schedule

- mid term effort 3-5 years, if pursued

Power Reactors (New & Generation IV)

- Addresses design basis events
 - NR-R-1
 - GIV-R-1

Promote adoption of risk-informed approaches for the selection of relevant scenarios for design-basis accidents
- New Reactors approach (NR-R-1)
 - being considered as part of Improvement Activity 1 for disposition of NTF Recommendation 1
- Schedule
 - long term effort 5-10 years, if pursued

Power Reactors (Generation IV)

- Addresses design basis events (GIV-R-1)
 - NRC should promote adoption of a more risk-informed and performance-based (RI-PB) approach to selection of design basis events (DBE)
- Approach
 - The NRC is considering a RI-PB approach for selection of DBE applicable to Next Generation Nuclear Plant (NGNP) design being developed by Department of Energy (DOE)
 - NRC has commented on and expects to consider a revised approach after a specific design for NGNP has been selected
 - Exemptions from some current regulations or rulemaking will be required to implement the approach that has been proposed
- Schedule
 - The schedule for NRC support of NGNP is a long term effort 5-10 years

Power Reactors (Operating, New, Generation IV)

- Addresses beyond design basis events
 - PR-R-2
 - OR-R-2
 - NR-R-2
 - GIV-R-2

Establish by rule a design-enhancement category of regulatory treatment for beyond-design-basis accidents.
- Approach
 - Being considered as part of Improvement Activity 1 for disposition of NTF Recommendation 1
- Schedule
 - mid term effort 3-5 years, if pursued

Power Reactors (Operating, New, Generation IV)

- Addresses External Hazards

- PR-R-3
- OR-R-3
- NR-R-3
- GIV-R-3



Reassess methods for estimating frequency and magnitude of external hazards. Implement consistent process including deterministic and PRA methods.

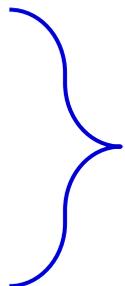
- Approach

- Other NTTF recommendations are being implemented that address this recommendation for power reactors
- The 2012 Appropriations Bill also requires the NRC to reassess external hazards
- The ASME/ANS PRA standards development activity for external hazards covers this and is updated periodically

- Schedule

- mid term effort 3-5 years

Power Reactors (Operating, New, Generation IV)

- Addresses external hazards
 - PR-R-4
 - OR-R-4
 - NR-R-4
 - GIV-R-4

Establish a systematic program for collection, evaluation, and communication of external hazard information
- Approach
 - NTF recommendation 2.2 is considering this recommendation for seismic and external flooding.
 - Other external hazards will also be included, consistent with the 2012 Appropriations Bill.
 - The ASME/ANS PRA standards development activity for external hazards covers this and is updated periodically
- Schedule
 - mid term effort 3-5 years

Power Reactors (Operating, New, Generation IV)

- Addresses defense-in-depth
 - PR-R-5
 - OR-R-5
 - NR-R-5
 - GIV-R-5

Apply risk-informed and performance-based defense-in-depth concepts in a more quantitative manner
- Being considered as part of Improvement Activity 2 for disposition of NTTF Recommendation 1
- Addressed as part of the development of the recommendation on an overall RMRF policy statement

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RMRF Recommendations *Non-Power Reactors*

- NPR-R-1
- NPR-R-2
- NPR-R-3
- NPR-R-4

Non-Power Reactors

- NUREG-2150 Non-Power Reactor (NPR) Recommendations involve:
 - Defense-in-Depth (DID) Framework
 - Risk Assessment of Non-power Reactors
 - External Hazards
 - Security

Non-Power Reactors

- Defense-in-Depth Framework
 - NPR-R-1: Apply the proposed DID framework to NPR licensing process
- Approach
 - Apply the DID frame work giving appropriate consideration and integration with other recent and proposed work related to NPR licensing (e.g. ISG and rulemaking). Rulemaking and regulatory guidance likely.
- Schedule
 - Next 2-5 years and coordinated with the NPR Licensing Streamlining Rulemaking

Non-Power Reactors

- Risk Assessment of Non-power Reactors
 - NPR-R-2: Evaluate the utility (resulting benefit) of performing pilot risk assessment that includes consideration of external hazards using modern risk assessment methods at a NPR
- Approach
 - Evaluate the potential benefit to inform subsequent decision to fund and perform a modern risk assessment of a NPR. Rulemaking and regulatory guidance likely.
- Schedule
 - Next 2-5 years

Non-Power Reactors

- External Hazards
 - NPR-R-3: Reassess methods used to estimate the frequency and magnitude of external hazards and implement a consistent process
- Approach
 - This is directly related to PR-R-3 and PR-R-4. The NPR recommendation will be implemented consistent with the power reactor recommendations. Rulemaking and regulatory guidance likely.
- Schedule
 - Decision in 2-5 years; process implementation >5 years

Non-Power Reactors

- Security
 - NPR-R-4: develop guidance for use in its NPR security regulatory activities that uses a common language with safety activities and harmonizes methods with the risk-informed and performance-based DID framework
- Approach
 - Dependent on results from NPR-R-1, NPR-R-2, and work by NSIR on risk informing security. Revisit as work on NPR-R-1, NPR-R-2, and by NSIR progresses. Resulting product(s) – TBD.
- Schedule - >5 years



RMRF Recommendations

FSME

- M-R-1 thru 5
- LLW-R-1 thru 3
- UR-R-1 thru 3

FSME

(Material Uses, LLW, UR)

- NUREG-2150 for FSME divided into Material Uses, LLW, and UR (Decommissioning was excluded) Similar recommendations for each FSME regulatory program area
- Recommendations involve
 - Adoption of the concept of risk management/RMRF
 - Include environmental reviews within the scope of risk management
 - Consideration of defense-in-depth concept and features; and address security
 - Coordinate closely with AS, and regulated community

FSME

- Addresses Risk Management and RMRF Recommendation

- MR-1
- LLW-R-1
- LLW-R-3
- UR-R-1
- UR-R-3



Apply risk insights and performance-based considerations as appropriate in rulemaking, guidance, policy development, and implementation . Include environmental reviews within the scope of RMRF.

- Approach

- Address RMRF recommendations
- Summarize current FSME status regarding use of risk-informed performance based approach
- Provide examples of ongoing rulemaking, & policy statement.
- Coordination with AS, EPA, Indian Tribes, and other regulated communities.

- Schedule

- Short term effort (3-5 years), mid term effort 5-10 years, or a longer term effort 10-15 years

FSME (Defense-in-depth)

- Addresses external hazards
 - M-R-3
 - M-R-4
 - LLW-R-2

Apply common risk approaches to safety and security based on risk management and defense-in-depth (DID). Consider more explicitly DID philosophy in rulemaking, guidance, and implementation.
- Approach
 - Address recommendations and approaches to DID
 - Develop DID guidance for material uses and LLW
 - Address overlap between performance assessment and DID
- Schedule
 - Short term effort (1-4 years), mid term effort 5-7 years, or a longer term effort 7-10 years

FSME

Coordination with NSIR, AS, Federal, and Regulated Communities

- Addresses Coordination with AS, FA, Indian Tribes, & ...
 - M-R-2
 - M-R-3
 - M-R-5
 - UR-R-2

Closely coordinate with leadership of AS and establish a joint NRC/AS working Group. Coordinate with regulated community

Establish common risk approaches to safety and security. HQ and Regional manager should undertake formal review of operational data and risk management in UR.
- Address coordination approach
- Address potential dual regulations
- Address key issues
- Schedule
 - Short term effort (3-5 years), mid term effort 6-10 years, or a longer term effort 10-15 years

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RMRF Recommendations

Fuel Cycle, High Level Waste

- F-R-1
- HLW-R-1

Fuel Cycle Facilities

- Fuel Cycle Facilities: U ore to UF₆ conversion, enrichment, reactor U and Mox fuel fabrication, UF₆ de-conversion
- Different regulations for different facilities
- 10 CFR 70 Subpart H requires Integrated Safety Analysis (ISA) to identify accidents, consequences, evaluate likelihood (often not quantitative)

Fuel Cycle Facilities

Recommendation F-R-1:

- The fuel cycle regulatory program should continue to evaluate the risk and the associated defense-in-depth protection by using insights gained from ISAs*
- ISAs* should continue to evolve to support regulatory decision-making

* Integrated Safety Analysis

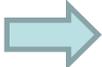
Fuel Cycle Facilities

- Sub-recommendation: 'continue using risk insights'. Addresses Safety
- Approach:
 - risk-informing the fuel cycle oversight program
 - ...as permitted by budgetary constraints and higher priorities
- Schedule: 3-5 years

Fuel Cycle Facilities

- Sub-recommendation: 'ISAs should continue to evolve...'. Addresses Safety
- Approach: Continuing revision of ISA guidance
 - ANS Standards working group on an ISA standard
 - Interim Staff Guidance to address ISA implementation issues, but not duplicative of the standard
 - Existing ISAs not required to be upgraded; only to meet existing requirements
- Schedule: 3-5 years

High Level Waste

- HLW-R-1  Any future revisions to the regulatory framework for geologic disposal of HLW should be done in accordance with the proposed RMRF
- Purpose of recommendation
 - To ensure that risk information continues to be appropriately considered in the development of requirements and appropriately reflect future HLW disposal paradigm
- Disposition of recommendation dependent on Commission approval and direction on the RMRF

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RMRF Recommendations

Interim Spent Fuel Storage, Transportation

- S-R-1,2
- T-R-1 thru 3

Interim Spent Fuel Storage

- NUREG-2150 – 2 recommendations
- Recommendations Involve
 - Determining acceptable level of risk and sufficient level of Defense In Depth
 - Evaluating proper use of and explicitly consider Defense In Depth in storage
- Approach
 - Develop risk information, decision metrics and guidelines
 - Staff training
- Schedule
 - Some short to mid term steps, overall completion is long term

Transportation

- NUREG-2150 – 3 recommendations
- Recommendations Involve
 - Focus on risk-informing guidance
 - Influence international regulations
 - Differ from international regulations
- Approach
 - Similar aspects as for storage
 - Clear distinction between requirement and interpretation
 - Variety of end products
- Schedule
 - Overall will be long term, but with some in near term



RMRF Recommendations

Security

Power Reactors (Operating, New, Generation IV)

- Addresses security
 - PR-R-6
 - OR-R-6
 - NR-R-6
 - GIV-R-6

Through the Implementation of a RES User Need, an analysis of terminology will be conducted and guidance issued
- Approach
 - RES User Need will be Issued
 - A guide will be produced
- Schedule
 - Short Term

Non-Power Reactors

- Addresses security

- NPR-R-4



Through the Implementation of a RES User Need, an analysis of terminology will be conducted and guidance issued, as well as new approach to attractiveness of SNM if Fuel Cycle Security Rulemaking

- Approach

- RES User Need will be Issued
 - A guide will be produced
 - Rulemaking for Material Attractiveness

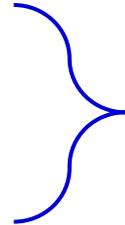
- Schedule

- Short Term for Guide
 - Mid Term for Rulemaking

Materials

- Addresses security

- M-R-3



Through the Implementation of a RES User Need, an analysis of terminology will be conducted and guidance issued

- Approach

- RES User Need will be Issued
 - A guide will be produced

- Schedule

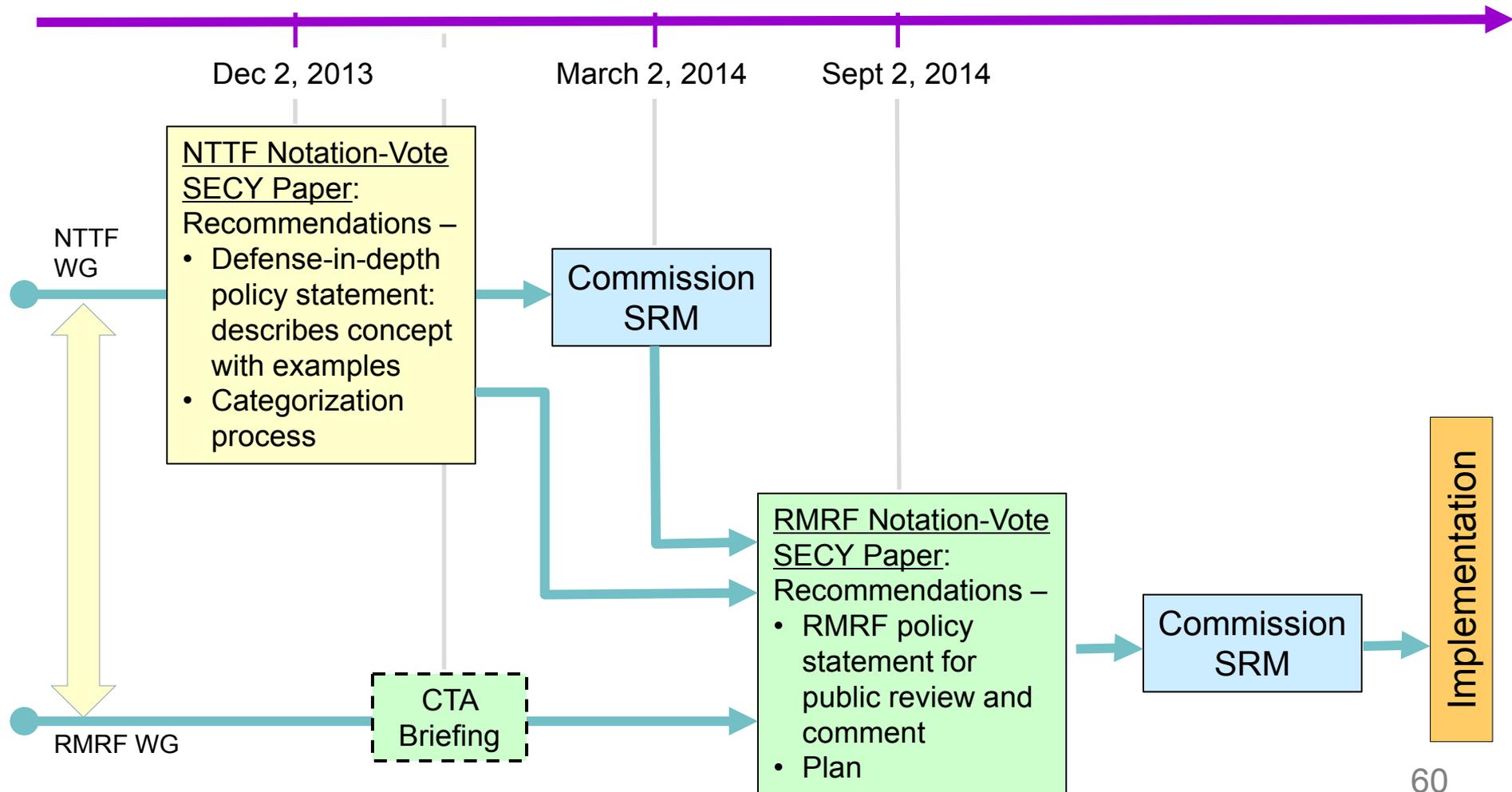
- Short Term



Schedule and Milestones and Relationship to NTTF

Recommendation 1

Relationship Between NTTF and RMRF (cont'd)



Path Forward: Schedule and Milestones

- To have a conceptual policy statement and plan when NTTF Rec 1 SECY paper goes to the Commission (December 2, 2013)
 - The six months after the Commission SRM will be used to refine the conceptual policy statement and plan based on Commission direction from the SRM and to obtain further stakeholder input
- Public Meetings:
 - 2013 Prior to Commission SRM – Hold public meetings including a public review and comment period
 - 2014 After Commission SRM – Hold public meetings including a public review and comment period

Backup Slides



Example of a Conceptual Overall Generic Policy on RMRF

- The NRC will manage the risks associated with activities that use byproduct, source and special nuclear materials through appropriate use of an RMRF that considers defense-in-depth, results of risk assessments, insights, and performance-based regulatory controls and oversight.
- The RMRF is to be based on a risk-informed, performance-based defense-in-depth strategy that employs successive levels of defense to compensate for uncertainties and makes the activity more tolerant of failures, external challenges, and malicious acts.
- The RMRF is applicable to all regulated activities and should be applied in a consistent and coherent fashion commensurate with the hazards and technology of the regulated activity.

DRAFT *** WORK-IN-PROGRESS

DRAFT *** WORK-IN-PROGRESS

Example of an Overall Conceptual RMRF Decisionmaking Process

- The NRC will use a risk-informed and performance-based process
- This process, which is to be used across the NRC in all regulatory fields, should have the following key elements
 - Identifying and framing of an issue, proposal, or problem
 - Identifying options and alternatives
 - Analyzing with appropriate risk evaluation technique(s) , tools, methods, and data
 - Deliberating (integrated decisionmaking) by evaluating options
 - Taking actions and implementation of selected option
 - Monitoring and feedback; and
 - Communicating with internal and external stakeholders

Example of Role of Risk in Overall Conceptual RMRF Policy Statement

- PRA Policy Statement would be subsumed into the RMRF policy statement, and therefore, withdrawn
- Requirement for a risk analysis, commensurate with activity and risk technology would be required

Example of Role of Risk in Overall Conceptual RMRF Policy Statement (cont'd)

- An essential factor in the decision-making process is the use of risk information which is of sufficient technical quality for its intended use, and which accurately and completely describes the limitations of the methodologies/risk assessment tools used to generate the risk information. Therefore the Commission should expect that
 - The decision-making process will be supported by use of risk assessment tools that are appropriate for the regulated activities.
 - For some regulated activities, licensees should develop and maintain licensee-specific PRAs or other related risk analyses (e.g., PRA for power reactor licensees, ISAs for some material activities)

Example of Role of Risk in Overall Conceptual RMRF Policy Statement (cont'd)

- To have an effective RMRF, risk assessment tools need to be developed and utilized wherever appropriate and practical such that risk insights can be factored into the decision process. Accordingly,
 - Risk assessment tools should be used as a means to assess risk in all NRC regulatory matters, where appropriate and practical. Risk assessment tools should be applied in a manner that supports the NRC's risk management decisionmaking process.
 - Risk assessment tools should be used to identify and address new safety and risk significant information, as well as to reduce unnecessary conservatism in existing NRC requirements, where appropriate and practical.
 - Risk evaluations in support of regulatory decisions should be as realistic as appropriate and practical to the extent necessary to support the regulatory application.

Example Proposed Overall Conceptual Policy on RMRF Defense-in-Depth

- The RMRF is based on a defense-in-depth strategy
 - That employs successive levels of defense to compensate for uncertainties and make the activity more tolerant of failures, external challenges, and malicious acts to ensure appropriate barriers, controls and personnel to prevent and mitigate exposure to radioactive material according to the hazard or threat present, the relevant scenarios, and the associated uncertainties; and
 - That the risks resulting from the failure of some or all of the established barriers and controls, including human errors, are maintained acceptably low.
- The number and nature of the levels of defense can vary depending on the regulated activity

Example Proposed Conceptual Role of Defense-in-Depth in a RMRF

DRAFT *** WORK-IN-PROGRESS

- DID is implemented in a systematic manner using established decision criteria to determine what measures should be employed at each level
- The basic levels of defense are prevention and mitigation, both of which need to be addressed for all regulated activities
 - Prevention are those design, operational and administrative features that prevent or lower the likelihood of adverse events from occurring, or assist in terminating the progression of adverse events before they result in radioactive material release.
 - Mitigation are those design, operational and administrative features that contain or confine radioactive material release following events or accidents, and lessen the consequences of radiation exposures to workers or the public, or of radioactive material release to the environment.

DRAFT *** WORK-IN-PROGRESS

Example Proposed Conceptual Role of Defense-in-Depth in a RMRF (cont'd)

- The levels of defense should be independent of each other, as much as possible, such that failure of one level does not lead to a near-term failure of other levels so that if one level does fail, the subsequent levels would be available.
- When properly implemented, defense-in-depth:
 - Ensures appropriate barriers, controls, and personnel are available to prevent and mitigate exposure to radioactive material according to the hazard present, the credible scenarios, and the associated uncertainties; and
 - Ensures that the risks resulting from the failure of some or all of the established barriers and controls, including human errors, are maintained acceptably low consistent with the applicable acceptance guidelines.

Example Proposed Conceptual Role of Defense-in-Depth in a RMRF (cont'd)

- In implementing the RMRF, a set of risk-informed and performance-based DID principles and decision criteria should be employed.
- The principles define what DID is to achieve (i.e., goals).
- Overall, DID should ensure that each regulated activity has appropriate DID measures (i.e., design, operational and administrative features) for prevention and mitigation of adverse events and accidents.
 - These measures can include items such as conservative design (e.g., safety margins), barriers, controls and personnel training.

Example Proposed Conceptual Role of Defense-in-Depth in a RMRF (cont'd)

Example Prevention Principles

- High reliability and availability of equipment and human actions
- Design, operational and administrative features to prevent and/or respond to equipment failures, human errors, natural phenomena and malicious acts
- Safety and security not dependent upon a single element of design, construction, maintenance or operation

Example Proposed Conceptual Role of Defense-in-Depth in a RMRF (cont'd)

Example Mitigation Principles

- Design, operational and administrative features to contain any release of radioactive material
- Design, operational, administrative features and response capability to limit exposure to radiation and/or radioactive materials to acceptable levels

Example Proposed Conceptual Role of Defense-in-Depth in a RMRF (cont'd)

- Decision criteria are utilized to determine whether sufficient DID has been achieved to ensure reasonable assurance of acceptable risk to public health and safety and the environment.
- DID decision criteria are established with consideration given to the uncertainties and lack of knowledge associated with the phenomenon, hazard, event, or accident.

Example Proposed Conceptual Role of Defense-in-Depth in a RMRF (cont'd)

Example Prevention Criteria

- Establish goals on component, system, human reliability, and accident or damage prevention
- Define the hazards which must be considered in the design (man-made and natural)
- Define acceptable design standards
- Define acceptance criteria that include consideration of treatment of uncertainties and safety margins
- Define the performance monitoring desired to monitor degradations in performance
- Establish personnel training and qualification criteria.

Example Proposed Conceptual Role of Defense-in-Depth in a RMRF (cont'd)

Example Mitigation Criteria

- Establish goals for component, system and human reliability and risk of exposure of workers, the public or the environment
- Establish acceptable consequence criteria
- Establish acceptable response capability
- Establish acceptable frequency of release
- Establish acceptable location and conditions for performing the regulated activity