

Official Transcript of Proceedings

NUCLEAR REGULATORY COMMISSION

Title: Advisory Committee on Reactor Safeguards
 Reliability and Probabilistic Risk Assessment

Docket Number: (n/a)

Location: Rockville, Maryland

Date: Monday, June 8, 2015

Work Order No.: NRC-1639

Pages 1-196

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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 PROBABILISTIC RISK ASSESSMENT (PRA)

SUBCOMMITTEE

+ + + + +

MONDAY, JUNE 8, 2015

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ROCKVILLE, MARYLAND

The Subcommittee met at the Nuclear
Regulatory Commission, Two White Flint North, Room
T2B1, 11545 Rockville Pike, at 1:06 p.m., John W.
Stetkar, Chairman, presiding.

COMMITTEE MEMBERS:

JOHN W. STETKAR, Chairman

RONALD G. BALLINGER, Member

DENNIS C. BLEY, Member

CHARLES H. BROWN, JR., Member

DANA A. POWERS, Member

JOY REMPE, Member

MICHAEL T. RYAN, Member

GORDON R. SKILLMAN, Member

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DESIGNATED FEDERAL OFFICIAL:

MICHAEL SNODDERLY

ALSO PRESENT:

RICHARD DUDLEY, NRR

MARY DROUIN, RES

JOE GIITTER, NRR

DONNIE HARRISON, NRO/DSRA

GEARY MIZUNO, OGC

MICHAEL TSCHILTZ, NEI

ACE HOFFMAN *

*Present via telephone

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P R O C E E D I N G S

1:06 p.m.

CHAIR STETKAR: The meeting will now come to order.

This is a meeting of the Advisory Committee on Reactor Safeguards Subcommittee on Reliability and Probabilistic Risk Assessment.

I am John Stetkar, Chairman of the Subcommittee.

Members in attendance today are Dick Skillman, Dennis Bley will join us, Mike Ryan, Ron Ballinger, Charlie Brown and Joy Rempe.

The purpose of today's meeting is to review the NRC staff's Federal Register Notice 80 FR 27191, Evaluation of a Proposed Risk Management Regulatory Framework and the associated draft document entitled NRC Staff White Paper on Options for Responding to the June 14, 2012 Chairman's Tasking Memorandum on Evaluating Options Proposed for a More Holistic Risk-Informed Performance-Based Regulatory Approach.

The draft NRC Staff White Paper discusses three items that the NRC staff expects to present to the Commission for its consideration, options for enhancing the risk management approach used to ensure nuclear power reactor safety, reevaluations of two improvement

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1 activities from the Fukushima Near-Term Task Force
2 Recommendation 1 that the Commission deferred and
3 consideration of an overarching agency-wide policy
4 statement on using the risk management approach to
5 ensure safety and security.

6 The Subcommittee received a status of the
7 staff's evaluation of options for a more holistic
8 risk-informed performance-based regulatory approach
9 and plans for responding to the Commission direction on
10 this proposed initiative on February 20, 2015.

11 This meeting is open to the public. This
12 meeting is being conducted in accordance with the
13 provisions of the Federal Advisory Committee Act.

14 Rules for the conduct of and participation
15 in the meeting have been published in the Federal
16 Register as part of the Notice for this meeting.

17 The Subcommittee intends to gather
18 information, analyze relevant issues and facts and
19 formulate proposed positions and actions, as
20 appropriate, for deliberation by the full committee.

21 Mr. Michael Snodderly is the designated
22 Federal Official for this meeting.

23 A transcript of the meeting is being kept
24 and will be made available as stated in the Federal
25 Register Notice. Therefore, it is requested that all

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1 speakers first identify themselves and speak with
2 sufficient clarity and volume so that they can be
3 readily heard.

4 I'll remind everyone in the room to please
5 silence all of your little communications devices.

6 We've received no written comments or
7 requests for time to make oral statements from members
8 of the public regarding today's meeting. And I
9 understand that there may be individuals on the
10 bridgeline who are listening on today's proceedings.

11 The bridgeline will be closed on mute so
12 that those individuals may listen in. And at the
13 appropriate time later in the meeting, we'll have an
14 opportunity for public comments from the bridgeline and
15 from members of the public in attendance.

16 We'll now proceed with the meeting and I
17 call upon Joe Giitter, Director of the Division of Risk
18 Assessment Office of Nuclear Reactor Regulation to open
19 the presentations.

20 Joe?

21 MR. GIITTER: Thank you, Chairman.

22 Good afternoon. I appreciate the
23 opportunity to provide opening remarks at this ACRS
24 Subcommittee meeting on Reliability and PRA.

25 Since the Commission issued the PRA policy

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1 statement nearly 20 years ago, the staff has been slowly
2 moving towards a more risk-informed approach to
3 decision making.

4 In the oversight area, we rely on the
5 significance determination process to determine the
6 appropriate level of inspection effort.

7 In the licensing area, we have made strides
8 and risk-informing fire protection requirements and in
9 improving changes to allowed outages times and
10 surveillance frequencies.

11 I believe that there are many more
12 opportunities to leverage the safety benefits of
13 risk-informed decision making in the years ahead.

14 In the spirit of project aim, it will be
15 imperative that we leverage risk insights to ensure that
16 our collective resources are focused on issues of
17 greatest safety significance and not on issues of
18 compliance at little or no safety benefit.

19 As many of you know, the current regulatory
20 structure is based on the philosophy that safety is
21 maintained as long as the licensing basis met.

22 And while that philosophy has served us
23 well, it is important to remember that the licensing
24 basis is derived from stylized accidents that may not
25 be realistic or even risk significant.

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1 Take, for example, the limiting design
2 basis accident for most plants, the double-ended
3 guillotine rupture of the largest pipe coincident with
4 loss of off-site power and signal failure. Even though
5 the probability of this event is extremely low, the
6 philosophy at the time of licensing was that by
7 protecting against this accident, it would be protected
8 against all categories of less severe accidents.

9 However, the first major risk assessment,
10 the reactor safety study completed in 1975, suggested
11 that we should be focusing our attention on small break
12 locus trains and other more probable events.

13 After the Three Mile Island accident in
14 1979 and a host of plant transients such as the
15 Davis-Besse loss of feedwater event in 1985, the
16 benefits of focusing on reliability, availability and
17 risk assessment became clear.

18 Huge safety strides were made through the
19 implementation of the maintenance rule and similar
20 initiatives. Yet, the licensing basis for the plants
21 and our focus on compliance with that licensing basis
22 is largely unchanged.

23 We know from experience with risk-informed
24 licensing initiatives such as 50.69 that a significant
25 fraction of safety related structure systems and

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1 components may not be important to safety.

2 We also know that a small fraction of
3 non-safety related systems may be very safety
4 significant.

5 Many of us can probably come up with some
6 examples of where resources have been spent chasing down
7 compliance issues that were of low safety or risk
8 significance.

9 Similarly, you might be able to come up with
10 some examples of where the deterministically based
11 licensing basis didn't always consider higher risk
12 contributors.

13 We've actually observed the situation in
14 our NFPA-805 reviews where we've seen plant conformance
15 with Appendix R, yet the fire PRA revealed a significant
16 risk contributor.

17 And while we've identified risk
18 contributors from external events that weren't
19 necessarily identified in the licensing basis, we've
20 also observed that some areas of the existing licensing
21 basis for external events were overly conservative and
22 unrealistic.

23 This afternoon, the staff will present
24 three options for implementing a risk-informed
25 regulatory framework. We look forward to your comments

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1 on these options.

2 I believe the fundamental question isn't
3 necessarily which is the best option, the fundamental
4 question is, is our current deterministic regulatory
5 framework good enough moving into the future or should
6 we invest in changes to our regulatory framework that
7 will allow us to focus our finite resources on matters
8 of greatest risk significance.

9 I look forward to the dialogue on this
10 important issue. Dick Dudley will open the staff's
11 presentation.

12 MR. DUDLEY: I'm Dick Dudley, the NRC
13 Project Manager for the RMRF for Power Reactors
14 Activity.

15 On slide two, I have an outline of the
16 staff's presentation this afternoon.

17 First, I will start with a little
18 background then we will get into the detailed discussion
19 of the staff white paper.

20 I will speak on the first two topics, the
21 implementation options for power reactors and a
22 reevaluation of Improvement Activities 1 and 2.

23 But, after I do that, we have Joe Gitter
24 who's going to present to you some of his personal
25 thoughts on how one of the options for power reactors

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1 Option 2 could be implemented.

2 So, Joe will speak after I speak and then
3 following Joe, Mary Drouin will discuss the example of
4 the potential agency-wide policy statement. Then I
5 will summarize the results of the meeting that we had,
6 the public meeting we had on May 27th and my last slide
7 will conclude with the next steps in this activity.

8 On slide three, as you heard, the staff is
9 working to provide the Commission with three different
10 items for their consideration, Evaluation of Options to
11 Enhance the Risk Management Approach for Nuclear Power
12 Reactor Safety, reevaluation of two Fukushima Near-Term
13 Task Force Improvement Activities that the Commission
14 deferred and the possible development of an overarching
15 agency-wide policy statement using the risk management
16 approach which would apply across the agency and to both
17 radiological safety and common defense and security
18 activities.

19 The staff discussed its current thoughts
20 and status of these issues in a white paper which we
21 released to the public on May 6th. Then we published
22 a Notice in the Federal Register on May 12th soliciting
23 written public comments on this white paper.

24 We're using the Federal rulemaking
25 website, www.regulations.gov and there is the docket

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1 number there. And the comment period was a 30-day
2 comment period and it will end on June 11th.

3 Now, on slide four, the white paper is
4 divided into three different sections, each section
5 addresses one of the three issues that I've already
6 mentioned.

7 So, now, slide five, I'm talking about
8 Section I of the policy statement where we talk about
9 options for enhancing the risk management approach to
10 nuclear power reactor safety.

11 The working group put together to review
12 the risk management regulatory framework concluded that
13 the existing safety goals for the operation of nuclear
14 power plants, the existing PRA policy statement and the
15 extensive experience that we have with risk-informed
16 regulation and risk-informed decision making
17 essentially has already established a de facto risk
18 management regulatory framework for power reactor
19 safety.

20 Because of that, the staff has decided to,
21 in Section I of the white paper, the staff evaluates
22 three different RMRF power reactor implementation
23 options to determine whether or to the extent that the
24 Commission would like us to increase the use of risk
25 information in the power reactor regulatory framework.

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1 So, Option 1 is to maintain the current
2 framework which would be to not increase the use of risk
3 information.

4 Option 2 would be establish a risk-informed
5 alternative licensing basis which would be an
6 alternative optional approach that licensees could
7 choose if they wish to increase their use of risk
8 information in the licensing of their facility.

9 Option 3 would be a mandatory requirement
10 that everyone would have to -- all operating reactors
11 would have to update their PRAs and use them to implement
12 a plant-specific risk management regulatory framework.
13 So, that would be a further increase in the use of risk
14 information.

15 CHAIR STETKAR: Because you change the
16 slide, when I read through the Section I, I really hung
17 up on that little comment that you have in the middle
18 of this slide that the -- it says in concert with
19 increasing experience with risk-informed regulation
20 and an integrated risk-informed decision making
21 processes, I've already established a de facto RMRF.

22 You know, if I were reading this as an
23 uninformed person, I would say, why are we discussing
24 any of this? If I was reading it as an informed person
25 who sees how the agency really does things today, I'm

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1 really curious why you can claim that we have a de facto
2 risk management regulatory framework in the context of
3 NUREG-2150 or the issues that are discussed by the
4 Near-Term Task Force? Because I don't see it.

5 I see an agency that responds to individual
6 events in a focused reactionary mode that is not risk
7 management, it is reaction to individual events.

8 I see an agency that uses risk information
9 in some of its decisions and doesn't consider it at all
10 in many of its other decisions.

11 So, why does the NRC have a de facto risk
12 management regulatory framework?

13 I can read, by the way, I can read policy
14 statements that date back to 1986 for the safety goals,
15 back to 1995 for the policy statement on the use of PRA,
16 and at a very high level, I see the Commission saying
17 the agency ought to do this, but I don't see the agency
18 doing it except in very focused piecemeal.

19 MR. DUDLEY: I think it's really a matter
20 of degree. The three options that we're looking at
21 under Section I of the paper give us -- we put them
22 together to get guidance from the Commission on the
23 extent to which the Commission wishes us to expand the
24 use of risk information.

25 The Option 3 would be the -- is the approach

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1 recommended in NUREG-2150 but 2150 also had other
2 options, I think, that they said were -- met the intent
3 of the risk management regulatory framework, it's just
4 the extent to which you wanted the degree to which you
5 wanted to take it.

6 CHAIR STETKAR: Those were for --

7 MR. DUDLEY: And Option 3 would be the full
8 implementation of the approach recommended by that task
9 force.

10 CHAIR STETKAR: Right. What I'm asking
11 about is, the implication that Option 1, the current
12 framework, maintain the current framework, Option 1, as
13 I read Section I, it sets the stage as we already have
14 a risk management regulatory framework.

15 In other words, I'm already biased in the
16 way that I'm reading this. The staff is telling me, our
17 current framework is already a risk management
18 regulatory framework. Why do we need to change
19 anything because we already have it?

20 So, I'm already biased to selection Option
21 1 by this phrasing in the introduction. And I'm saying,
22 I personally disagree with that phrasing. I don't
23 think that the agency has a risk management regulatory
24 framework in any way, shape or form in the sense of
25 treating risk consistently across all regulatory

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1 issues, even if I narrow it down to the application of
2 power reactors.

3 Even if I narrow it down to power reactors
4 only during power operation, the agency is not
5 consistently treating risk nor is it making decisions
6 that consistently manage that risk under the current
7 framework.

8 MR. GIITTER: This is Joe Giitter.

9 I think that's a valid point and but, yes,
10 you could argue we have a de facto framework, but that
11 the framework is broken or is not a very good framework.

12 CHAIR STETKAR: I'm not saying -- I don't
13 think it's broken. I don't think -- what I'm saying is,
14 I think where we are in the year 2015 has not actively
15 implemented the division, perhaps, if you want to call
16 it that from those policy statements that were issued
17 20 to 30 years ago where the Commission -- that
18 Commission 20 to 30 years ago was saying we want to see
19 the agency going forward in the future making more
20 extensive use of risk information throughout everything
21 that we do.

22 And, you know, I don't think that the system
23 is broken. I'm saying that the system has not adopted
24 the vision from those policy statements in a coherent
25 or a consistent manner across all of the agency's

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1 activities.

2 And regardless of how you slice and dice the
3 different regulatory areas, you know, so I'll keep it
4 focused, if you will for the moment, on power reactors,
5 even there.

6 MEMBER BLEY: I'd add not only is it in the
7 section, but it was in Dick's introduction.

8 It feels like a bias saying we're already
9 there and now we could go well beyond a risk management
10 regulatory framework and I don't think that's what you
11 say in detail. But it's certainly up there up front
12 both in the oral presentation and in the document.

13 CHAIR STETKAR: Essentially, if I were a
14 Commissioner, I'd read this and I'd get to Option 1 and
15 I'd say the staff is telling me I'm already there. Why
16 do I even need to think about doing anything more?
17 Despite all of the good stuff that you do say about
18 Option 2 and Option 3 continuing on because I'm already
19 biased in the sense of it's not broken. I have one of
20 these things that they're telling me I need, why should
21 I do any more?

22 MR. DUDLEY: I don't really have a response
23 to that.

24 CHAIR STETKAR: Okay.

25 MR. DUDLEY: Other than we picked three

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1 options with a varying spectrum of increasing the use
2 of risk information and we need to -- we picked those
3 options so we can get feedback from the Commission on
4 where the Commission desires for us to go in the future.

5 CHAIR STETKAR: As long as it's a fully
6 balanced presentation of those options where the
7 Commission understands both the benefits and the
8 drawbacks of accepting, you know, any one of those three
9 options.

10 I mean and it's not just benefits and
11 drawbacks in terms of effect of full power or if -- sorry
12 -- but of person hours, whatever, you know, in terms of
13 resource requirements, it's benefits or deterrents in
14 terms of how they'd affect, you know, agencies
15 implementation of Commission direction from those
16 previous policy statements.

17 MEMBER BLEY: I think it would be fair to
18 say that we have the methods and we have the policy
19 guidance to implement a risk-informed risk management
20 regulatory framework but not to say it already lives.

21 CHAIR STETKAR: Yes, we're not there yet.

22 MR. DUDLEY: We do have the tools, but I'll
23 have to admit, we don't use them all the time.

24 CHAIR STETKAR: Yes, well, I mean and
25 that's -- okay. Anyway, enough said.

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1 MR. GIITTER: It's a good comment and we'll
2 take it under advisement.

3 CHAIR STETKAR: Just read it. All I'm
4 saying is read the front end because that sets the stage
5 for everything and see whether or not you have led to
6 a pre-decisional bias by it.

7 MR. GIITTER: Okay.

8 MEMBER BROWN: I have one question a little
9 bit relative to that.

10 I've been over the white paper, that same
11 kind of thought process. But, it seems like you were
12 arguing that we already do a bunch of risk stuff and we
13 deem it necessary or deem it value added to the processes
14 to the things we're doing and here are some other choices
15 for you to go.

16 What I didn't see in the white paper when
17 I read it was you talked about that had potential
18 benefits but you didn't enumerate any either a
19 qualitative or even a quantitative this is the value we
20 think going the whole hog is going to bring. What is
21 this going to save?

22 You implied that there might be some
23 savings. You might have implied there might be some
24 reduced requirements or whatever to be incorporated in
25 a licensing basis.

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1 But, when I read it, it looked like there's
2 a lot of work involved with going to the full bore Option
3 to the industry as well as the NRC.

4 And, I mean we have a process today that
5 develops plants, there's nobody thinks they're unsafe,
6 at least I haven't heard anybody say that.

7 So, where is -- why do we -- how do we
8 justify the cost and the value added going forward when
9 we go all the way?

10 And I'm not arguing one way or the other,
11 I'm just saying I was looking for some way to make a
12 judgment on the thing which I've been struggling with
13 for many meetings in this.

14 But the white paper helped coalesce some of
15 the thought processes and that's kind of where I ended
16 up after reading today's material.

17 MR. DUDLEY: Well, the white paper had a
18 couple of purposes. One was to get down the thoughts
19 and the options that the staff was considering.

20 The second is to get feedback from the
21 public and that's why it's out for written public
22 comments.

23 The difference between the white paper and
24 the SECY paper that we provided the Commission primarily
25 is it's going to include pros and cons of these different

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1 options. We didn't include those in the white paper.
2 We had them for some of the options but not all.

3 We decided to take them all out. Maybe
4 they would prejudice the comments. We didn't want it
5 to make it to look like, you know, we had pre-selected
6 a choice.

7 But the SECY paper will have a discussion
8 of pros and cons for all the options before we give it
9 to the Commission.

10 MEMBER BROWN: And that -- I presume that
11 pros and cons will address where we think -- now, I'm
12 not necessarily looking at the costs and resources,
13 manpower, whatever you want to call it, the dollars.
14 But, what does it bring in terms of the increased safety
15 of the plant? Where that we spent too much time, too
16 many resources working on something that doesn't add
17 value and what have we missed?

18 Where are some areas that popped up later
19 that we had never seen because we didn't take that and
20 all of a sudden it popped up later, would we have thought
21 of it earlier? I'm just trying to see where the
22 existing process does not deliver what we would envision
23 in terms of a safe operating regime?

24 MR. DUDLEY: I think the pros and cons of
25 the different options in the SECY paper will generally

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1 address that issue.

2 MEMBER BROWN: Okay. Wait and see?

3 MR. DUDLEY: I fully admit we do not have
4 it in the white paper.

5 MEMBER BROWN: That's fine. That's not an
6 unacceptable answer.

7 MEMBER SKILLMAN: Let me jump into this
8 thinking about Joe's very beneficial introductory
9 comments.

10 The real issue that Charlie Brown was
11 raising was, in my judgment, where's the value?
12 Where's the proof of the value for the three options?

13 I'm wondering if we were to take a very
14 thick magnifying glass view of the ROP over the last
15 decade and of the SDP, the Significance Determination
16 Process, that's been used since we changed from SLAP to
17 ROP, if there isn't a way to create a metric that says
18 with Option 1, this is the value that would have been
19 gained if we had gone to Option 2.

20 And if we'd been at Option 2, here's the
21 gain to Option 3.

22 And I mean gain and value not only in terms
23 of an increase in nuclear safety, but a decrease in the
24 licensees resources.

25 For this to make any sense at all, industry

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1 has to say, you know what? This is a winner for us. And
2 simultaneously, the staff here has to say this is a
3 winner for us, too.

4 The flip side is, just to say let's go to
5 Option 3 and mandate a very thorough overarching risk
6 approach sounds like lots of dollars, new PRA, huge
7 investment with questionable increase in value meaning
8 increase in nuclear safety.

9 So, my question is, is there a way -- we've
10 learned a lot since we changed from SALP to ROP, all the
11 plants are using SDP, you're using SDP. My experience
12 was among the most valuable people we had at the site
13 were our PRA individuals who were remarkably tightly
14 connected to the region specialists for the PRA for, in
15 my case, TMI 1.

16 There's a huge amount of data for the what
17 were almost a hundred plants. Is there a way to make
18 a value argument that would begin to point to what the
19 incremental steps would give and where industry could
20 say, you know, we can buy this. We can buy into this
21 because we really do get something for it.

22 It isn't just going to be, if you will,
23 another regulatory mandated program into which we pump
24 hundreds and hundreds and hundreds of thousands of
25 dollars and worker years of toil.

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1 MR. DUDLEY: Option 3 is very similar to an
2 option we evaluated in the Near-Term Task Force
3 Recommendation 1 SECY paper, SECY 13-0132. And, in
4 that paper, the staff stated its qualitative judgment
5 that we did not believe that the benefits of Option 3,
6 which would require everyone, all operating reactors,
7 to upgrade their PRAs and keep them upgraded, we said
8 that we did not believe that that effort would likely
9 meet the back-fit test as a significant safety
10 improvement.

11 So, we have some information on that. That
12 information will be presented in the SECY paper to the
13 Commission. In fact, we highlight that in the current
14 draft that that was the conclusion we had previously on
15 Option 3.

16 So, as to your discussion of is there a
17 single metric that you can use to kind of determine the
18 value of one option versus the other, I really can't
19 speak to that.

20 What we have done generally is try to do
21 qualitative cost pros and cons of the various options.

22 So, I don't know if I'm answering your
23 question or not, but --

24 MEMBER SKILLMAN: But it seems to me that
25 --

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1 MR. DUDLEY: -- that's what I can offer.

2 MEMBER SKILLMAN: -- you know, Joe's
3 opening comment, the thrust of Joe's opening comment
4 was, as a consequence to the TMI accident, the early WASH
5 study, we've learned that there are a lot of smaller
6 systems who's safety significance is much greater than
7 we had originally understood.

8 The double-ended guillotine might have set
9 hardware requirements but there are a lot of pieces to
10 this riddle that are important in terms of nuclear
11 safety.

12 It seems to me if we went over the last
13 couple of years, maybe the last six, eight years of ROP
14 data, we'd find that where plants have gotten into
15 trouble really what was down in some of the fine details,
16 smaller systems, the SDP pointed that out.

17 And whatever it is in terms of the metric
18 to pull together, how the SDP and the region's view of
19 the PRA for that plant might create some form of a metric
20 to say here's how we can get from Option 1 to Option 2.
21 Here's the value and, by golly, from Option 2 to Option
22 3, it's obvious it's an overwhelming expense that
23 doesn't give a whole lot of value.

24 But, it just seems there's data that we may
25 not have exploited, but it's there because we've been

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1 dealing with this for a long, long time and we've been
2 dealing with it in significance determination program
3 because that's how the units have been punished.

4 MR. GIITTER: Dick's looking at me.

5 I understand your comment and there is
6 value there and I think part of the challenge is when
7 you say there's data there, it's not easily
8 quantifiable. A lot of it's intangible.

9 So, I can tell you as a Division Director,
10 and I can speak for some of the other Division Directors
11 in NRR, if I look at my last week in the office, I would
12 say a disproportionate amount of time was spent on
13 compliance issues with very little or no safety
14 significance.

15 And, you know, if you look at the broader
16 picture of how the agency wants to be more effective and
17 efficient, you can kind of, you know, take little shots
18 around the edges. But, if you really want to go to the
19 heart of how we can become a more effective regulator,
20 I think it's going to require us to make smarter
21 decisions based on risk insights.

22 The problem is how do you actually measure
23 that? And, you know, there's a way to do that, I
24 suppose. We could come up with some estimates.

25 I think your comment's a very good one and

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1 I think it's one we need to look at because I'm not sure
2 that we do a good enough job talking about the value and
3 these different options. So, it's a good comment and
4 we'll take a look at it.

5 But, I do think in terms of being able to
6 quantify that, which we like to do when we're talking
7 about a proposed rule, it becomes more difficult to do
8 that because a lot of these things are intangible.

9 MEMBER SKILLMAN: Okay, thanks.

10 CHAIR STETKAR: And I think as a final
11 comment so that we get to slide whatever, seven, I need
12 to remind everyone that in a letter that we wrote, the
13 ACRS wrote, November 20, 2013, we basically disagreed
14 with the staff's conclusions on the marginality of the
15 benefits of the risk assessments.

16 And in particular, our Recommendation
17 Number 5 from that letter said the staff should
18 reconsider the preliminary characterizations presented
19 on the costs and value of site specific and generic
20 probabilistic risk assessment applications.

21 The discussions appear to be biased toward
22 limited application of PRA and Improvement Activities
23 1 and 2 and may inappropriately marginalize and
24 inadvertently prejudice the value of proceeding with the
25 risk management regulatory framework for operating

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1 reactors.

2 So, Dick, when you resurrect the
3 conclusions from NTTF, your SECY on NTTF Recommendation
4 1, I'd ask you to keep in mind at least our
5 Recommendation Number 5 from that letter.

6 MR. DUDLEY: The one issue I will raise is
7 that the back-fit rule, when we try to determine if a
8 new requirement such as a requirement issued for all
9 licensees to perform and upgrade PRAs, the back-fit rule
10 only lets us look at safety increases. It doesn't let
11 us look at other -- you have to meet the significant
12 safety threshold first before you can then look at the
13 cost beneficial aspects of it.

14 So, some of the benefits that licensees
15 could get from PRAs such as saving money on compliance
16 issues or increased operational flexibility of the
17 plant, those are things that licensees can factor in but
18 the NRC cannot use those as things in deciding whether
19 we're going to issue a rule or not. So, that's one of
20 the -- it's just the situation.

21 And, you're right, there are other benefits
22 and under the back-fit rule, we're not permitted to
23 weigh them to get to the significant safety increase
24 threshold.

25 MR. GIITTER: And I think for the

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1 regulatory basis for a new rule, you can consider some
2 of those other attributes.

3 MR. DUDLEY: If it were a forward-fit rule,
4 but anything that's a back-fit, we have to meet that
5 significant safety increase test. And then it has to
6 be cost beneficial.

7 Okay, on slide six, I'm just going to skip
8 down to the bottom, the last bullet, maintain the
9 current regulatory framework is not a do nothing option.

10 Even under the current framework, as you
11 all know, we continue to make safety improvements based
12 on risk insights or other judgments, operating events
13 or whatever, where ever necessary using our regulatory
14 processes.

15 And, in fact, you will see later on in the
16 discussion that even if the Commission chooses Option
17 1, maintain the existing framework, the staff is still
18 going to recommend some enhancements to it associated
19 with Improvement Activities 1 and 2 from Near-Term Task
20 Force Recommendation 1.

21 Slide seven begins the discussion of Power
22 Reactor RMRF Implementation Option 2.

23 Under Option 2, we would maintain the
24 existing generic regulatory structure but we would
25 issue a rule that allow licensees who choose to upgrade

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1 their PRAs to apply for approval of a risk-informed
2 alternative licensing basis for certain deterministic
3 regulations or compliance issues that they might choose
4 as long as they can show from their upgraded PRA that
5 those issues are of low safety benefit for that
6 facility.

7 So, like I said, licensees could select a
8 plant specific set of design changes or compliance
9 issues but, in addition to getting to -- well, both sides
10 of the sword here, you would let them go ahead and make
11 some changes from our deterministic requirements, but
12 they would also have to go out and search for and
13 mitigate any plant specific risk vulnerabilities that
14 meet criteria that we would specify in the implementing
15 regulation.

16 CHAIR STETKAR: I'm quite honestly really,
17 really confused about what Option 2 is. And, I
18 understand, I guess, Joe, you said is going to talk a
19 little bit more about Option 2?

20 MR. DUDLEY: When I'm through my talk, Joe
21 has about a dozen slides he's going to through.

22 CHAIR STETKAR: I'll wait, but I'm hoping
23 that by the time we're done with this afternoon I'm less
24 confused.

25 MR. DUDLEY: Okay.

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1 So, if licensees found risk
2 vulnerabilities, they would have to put new information
3 on how they're mitigated into -- we would have to
4 mitigate them, of course, and then include the
5 information in the plant's updated FSAR.

6 Under Option 2, there would be mandatory
7 monitoring and feedback as described in Reg Guide 1.174
8 to make sure that the risk changes remained acceptable
9 for the lifetime of the plant.

10 And, also under Option -- the discussion of
11 the Option 2, we requested public comments on the
12 possibility of requiring perhaps licensees for
13 subsequent license renewals, license renewals that
14 would exceed 60 years, we solicited public -- we
15 requested public comment on a possibility of issuing a
16 requirement that license renewals exceeding 60 years be
17 required to perform PRAs and look for and address risk
18 vulnerabilities as a condition of that subsequent
19 license renewal.

20 So, that's in there just to get some public
21 feedback on that topic.

22 CHAIR STETKAR: I'll ask you folks,
23 because you're making the presentations and I want to
24 make sure we get everything covered, should I wait until
25 the end after Joe presents on Option 2 before we ask --

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1 before I start asking the details?

2 MR. DUDLEY: The details? Absolutely.

3 CHAIR STETKAR: Okay. I won't keep me
4 quiet but we'll do that.

5 MEMBER BROWN: I have a question on that
6 slide on your second bullet.

7 MR. DUDLEY: The major bullet, yes, issue
8 of rule, okay.

9 MEMBER BROWN: No, no, the small bullet,
10 new information on mitigation --

11 MR. DUDLEY: Okay.

12 MEMBER BROWN: -- of risk must be
13 documented.

14 I guess in the white paper it says one of
15 your requirements for Option 2 that all licensees and
16 applications that choose to adopt the risk-informed
17 alternative would be required to use their PRAs to
18 search for and mitigate.

19 Now, we have to have a global search to find
20 out once we've done this PRA under Option 2 for whatever
21 we did, we have to go now look at everything and see if
22 we have anything else we need to deal with.

23 That's pretty extensive to me. I mean that
24 seems inconsistent with the -- let me finish, okay?

25 That seems inconsistent with the lead in

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1 which said you would use it for selected items that the
2 licensee wanted to take a risk-based. But once you get
3 into it, now I have to hop on that horse and I have to
4 ride clear across the range.

5 That's the implication I got from reading
6 the white paper.

7 MR. DUDLEY: Maybe I can explain it with an
8 example.

9 CHAIR STETKAR: Let's --

10 MEMBER BROWN: That's on page 2.

11 CHAIR STETKAR: Let's wait.

12 MR. DUDLEY: Okay, let's wait, yes.

13 CHAIR STETKAR: Let's wait because that's
14 one of the -- that's one of my areas of confusion.

15 MR. DUDLEY: Okay.

16 CHAIR STETKAR: And I'm hoping they're
17 going to clear that up.

18 MEMBER BROWN: Okay, all right.

19 CHAIR STETKAR: That obviously touched a
20 nerve with you, too.

21 MEMBER BROWN: A big nerve.

22 CHAIR STETKAR: Okay.

23 MEMBER BROWN: I even woke up last night
24 when I read it.

25 MR. DUDLEY: On slide eight, here are a few

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1 of the things we think we know about implementation and
2 the next slide is a bunch of things that we don't really
3 yet know about implementation of Option 2.

4 But, for Option 2 on slide eight, we believe
5 that we would approve the license amendment likely to
6 authorize the use of the alternative approach. Plants
7 would have to have high quality PRAs to support the
8 effort.

9 I think you'll hear later the scope of the
10 PRA is going to be -- it's sort of an open thing that
11 we're still trying to figure out.

12 The regulatory process would likely be
13 similar to NFPA-805 and the licensees are likely to be
14 able to make some changes on their own if the changes
15 and risks are no more than minimal, but changes with
16 facility changes with larger changes in risk would have
17 to have NRC approval.

18 So, on slide nine, this one addresses the
19 implementation uncertainties and, as I said, we don't
20 know exactly how it's going to work. We intend -- first
21 of all, we know that we're going to have to review all
22 the power reactor regulations and go through them and
23 sort them into a list of rules that is amiable to
24 risk-informing under Option 2 and those rules like, I
25 don't know, maybe fitness for duty or something like

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1 that that really aren't amiable to risk-informing.

2 But there are other uncertainties on
3 implementation and the minimum scope and the technical
4 accuracy of the upgraded PRA to enter into the approach,
5 that's an issue and Joe will give some thoughts on that.

6 Do you have review of the PRA? Do you do
7 certification? Is it just peer review? You know, how
8 do you do that?

9 The selection and scope of permissible
10 design changes, the process that the staff would use to
11 review the design changes, reporting documentation
12 requirements, we haven't figured out. And this whole
13 thing needs to be done in an approach that is transparent
14 both to the NRC and to the public.

15 So, these are some of the things that we
16 have to work out associated with Option 2.

17 That, for the time being, concludes our
18 discussion of Option 2. Joe will give you some thoughts
19 on it later on.

20 But, now on this next slide, I'm going to
21 start -- Chairman?

22 CHAIR STETKAR: No, no, we'll wait for Joe.
23 I'm trying to --

24 MR. DUDLEY: Unless, Joe, you --

25 CHAIR STETKAR: I'll be calm.

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1 MR. GIITTER: If you'd like, I can go ahead
2 and go through it.

3 MR. DUDLEY: Did you want to do it now?

4 MR. GIITTER: I might as well.

5 CHAIR STETKAR: I think it's probably
6 better. Why don't we sort of cover each of the options
7 in detail.

8 MR. GIITTER: Okay.

9 CHAIR STETKAR: That might help us.

10 MR. GIITTER: That would be fine with me.
11 I'll just sit here if it's all right.

12 CHAIR STETKAR: Sure.

13 MR. GIITTER: Okay, just in the way of
14 introduction, as you know, the discussion of Option 2
15 in the white paper is very high level and, you know, we
16 wrote the white paper back in February and there was some
17 struggles trying to get the paper issued. And I
18 apologize for that.

19 I did ask my staff, and the reason I'm
20 asking my staff is my staff are the folks that on a day
21 to day basis have to work with the risk-informed
22 licensing applications. We're in the fire, so to
23 speak.

24 And so, I felt it was important to get their
25 input on some out of the box thinking in some cases on

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1 how we might do things differently in the future.

2 So, we also received feedback at a public
3 -- the recent public meeting on RMRF that there really
4 needed to be more detail in Option 2. And I appreciate
5 that. I agree and it's something we intend to do and
6 put in a SECY paper.

7 We also plan to get some stakeholder input
8 on that, not just at the rulemaking stage but I'd like
9 to have at least one other public meeting with industry
10 to have more dialogue in Option 2 and to further vet some
11 of our thinking on it.

12 Next slide, please?

13 So, the first aspect of Option 2 is that it
14 would be implemented by a rule. Now, it's possible
15 given a little bit of thought to this, and we've done
16 this before, it's possible that on a piloting basis, we
17 could actually have somebody pilot this and use the
18 exemption process as opposed to a rule.

19 We did that with 50.69 in South Texas and
20 I think that worked pretty well. So, that's certainly
21 a possibility.

22 But, in terms of large applicability to the
23 operating fleet, the implementing by rule would make the
24 most sense.

25 We're calling in an alternative to the

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1 current deterministic regulations where, apparently,
2 we used the word voluntary before and I think that caused
3 confusion talking about a voluntary requirement. So,
4 we use the word alternative now which means the
5 licensees may elect to do it or they may not.

6 It would require a suitable model and what
7 we mean by that, for example, for NOP-805, obviously,
8 we've required a fire PRA.

9 If you are going to risk-inform GDC-2,
10 let's say for example, you had ten items in scope and
11 one of them included GDC-2 then we would probably
12 require that you have PRA models for external events,
13 at least those external events that are conducive to
14 modeling, flooding may not be a this point.

15 It was design basis, you might just have an
16 internal events at power PRA, so it depends on what the
17 scope would be.

18 Next slide, please?

19 MEMBER SKILLMAN: Joe, let me ask, it seems
20 to me that when you begin to talk about risk-informing
21 the GDC, you've just jumped into an ocean of
22 permutations and combinations. What's to keep you from
23 getting into a fire fight on the general design criteria
24 regarding electrical power systems or DK heat removal?

25 It just strikes me that the GDC have

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1 provided stability throughout industry. And if we
2 being to say, well, golly, we can kind of risk-inform
3 whether or not we wanted that type of spent fuel cooling
4 system or that amount of DK heat removal, we've begun
5 to chip away at some of the foundational issues that have
6 kept us safe for 50 years.

7 MR. GIITTER: I think it's important to
8 point out that what we would be doing is we'd be
9 risk-informed. We're not going to throw the baby out
10 with the bath water.

11 So, you have safety margin and defense of
12 depth in a risk-informed decision that you would still
13 retain.

14 But, I'm going to pick on something, I'm
15 getting a little bit ahead of myself. But when I
16 referred earlier to spending a lot of time on issues of
17 compliance, of low safety significance, probably one of
18 the more recent examples is tornado missiles.

19 And if you read GDC-2, you interpret it, you
20 have to provide protection against tornados and the
21 safety related structure systems and components have to
22 be able to perform their design basis function, which,
23 in this case, is a double-ended guillotine rupture of
24 the largest pipe coincident with the loss of off-site
25 power, et cetera, et cetera.

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1 The compliance issue we're dealing with, in
2 many cases, the structures themselves are protected.
3 The diesel generators may be protected but you might
4 have an exhaust stack that's not protected.

5 And, the way we've been treating that in
6 compliance space is if you have a diesel generator
7 exhaust stack that's unprotected, the diesel
8 generator's incapable of performing its required
9 function.

10 Now, if you look at that -- so, you know,
11 if you look at that in risk space, even for the areas
12 of the country that have the highest tornado frequency
13 you're talking about a 1E-4 event, you're looking at the
14 probability that the tornado missile actually is big
15 enough, large enough and it actually strikes the target.

16 And then it would have to fail that diesel
17 generator exhaust stack, if it shears it off, it's okay,
18 it would have to crimp it so that it would prevent
19 exhaust from coming out.

20 Now, by the time you look at -- you play this
21 scenario out, you realize this is extremely low
22 probability event.

23 Plus, we have a lot of operational
24 experience to show there have actually been I think
25 seven instances where tornados have hit plants and not

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1 a single safety related SSE has ever been affected.

2 So, on one hand, you have a deterministic
3 criteria that is extremely difficult to meet and if you
4 strictly look at that without looking at it through a
5 risk lens, you can spend a lot of time, you can make
6 decisions to shut plants down over issues that are of
7 very low safety significance.

8 So, I understand what you're saying but I
9 think a lot of our deterministic criteria lends itself
10 to a better decision if you can bring risk insights into
11 operability determinations and even licensing
12 determinations.

13 MEMBER BROWN: So, seven plants have been
14 hit and there wasn't a single safety system that got
15 damaged but, yet, they were designed deterministically.
16 So, isn't that an indication that that system works?

17 MR. GIITTER: Yes, and we're not talking
18 about rolling back deterministic requirements
19 entirely, it's a matter of looking at the -- in making
20 decisions is really what we're talking about. Making
21 decisions about whether something is safe enough,
22 bringing risk insights into that decision making
23 process.

24 CHAIR STETKAR: By the way, before you
25 continue, Joe, for the record, we've been joined by

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1 Member Dr. Dana Powers.

2 MR. GIITTER: Okay, I'm going to go ahead
3 to the next slide. We're on this slide, okay.

4 The benefits of Option 2, we believe there
5 is increased safety benefits to the public. Certainly,
6 if you identify and mitigate plant specific
7 vulnerabilities that can improve plant safety.

8 Reduced burden, there is some non-risk
9 significant portions of the licensing basis that we may
10 determine is no longer necessary.

11 Increased resource efficiencies,
12 licensees may be able to expand self-approval of some
13 changes that might be similar to what we do for NFPA-805.
14 If it's less than 10⁻⁷, for example.

15 And, although good peer review should
16 obviate the need to review the base PRA, what I'll be
17 talking about in a minute may make that review even more
18 straightforward.

19 Operational flexibility, we know from risk
20 managed tech spec -- Risk-Informed Tech Spec 4(b), for
21 example, that licensees can make decisions that provide
22 better operational flexibility without increasing or
23 significantly increasing the risk of a plant.

24 For example, we spent a lot -- the staff
25 spends a lot of time and licensees spend a lot of time

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1 in Notice of Enforcement discretion. It seems like it
2 always happens on a Friday afternoon at 4:00. We'll get
3 a call and it seems like every couple of weeks at least
4 we get a notice. I don't know what the actual
5 statistics are, but that's --

6 My staff is the -- we have somebody on call
7 all the time who does NOAA evaluations. As licensees
8 move to Risk-Informed Tech Spec 4(b) which will allow
9 them to control their allowed outage times and they'll
10 be able to make decisions on how much to increase an
11 allowed outage time based on the plant risk profile at
12 that point in time.

13 We won't need to have a Notice of
14 Enforcement Discretion, the licensee will be able to
15 make those decisions without coming back to the NRC.

16 The whole point of this is that not only
17 does it allow licensees greater operational
18 flexibility, but it allows the staff to ideally focus
19 on those things that are more risk significant and not
20 spend a lot of time on those things that aren't.

21 Next slide, please?

22 MEMBER SKILLMAN: Hey, Joe? Joe, I want
23 to go back to your word picture regarding protection of
24 the exhausts on the emergency diesel generators against
25 a tornadically hurled missile.

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1 I was part of a team that put those
2 protections on a plant and our design case was a Buick
3 coming over the fence at about 50 miles an hour. And
4 when we were doing that modification, we had people
5 laughing at us until about two years later there were
6 pickup trucks sitting on buildings not too far away.

7 You know, so people began to realize, you
8 really can hurl a Buick and you can hurl a Silverado or
9 a Sierra. They'll fly.

10 And I'm reminded of an argument that I've
11 used with John Stetkar or with Dennis Bley. It's the
12 passenger ship that has 5,000 people and it's got a seat
13 on the lifeboat for every soul on board, but when you
14 look at the data, there hasn't been a large cruise ship
15 sinking for many years.

16 So, one can say, well, if it's 5,000 people
17 and so many trips per year, the likelihood of having the
18 need for one of those seats for a soul has diminished
19 to 1-8, 1-9, 1-10. So, let's get rid of all lifeboats
20 and all life preservers.

21 But, of course, the flip side of the
22 argument is if there is a hull loss, you can have a huge
23 consequence event.

24 So, I guess I'd like to push back a little
25 bit on the idea that taking the case of the protection

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1 on the diesel engine exhaust, you'd really have to have
2 the missile in the right location and it would have to
3 crimp the exhaust so that the engine would no longer be
4 operable.

5 The flip side is, no matter what happens,
6 if you've got a great big cage up there, you're protected
7 and you can count on that engine presuming that it
8 starts.

9 Where in the discussion is there a
10 recognition of the value of simply having defendable,
11 defense in depth that the operators know is there for
12 the event, whatever it might be?

13 I understand you can whittle away with a
14 probabilistic argument and say, you know, we can get by.
15 We can probably wing it here. We can make it.

16 Then there's the other side of that that
17 says, I know I have the protections in place that I need
18 for whatever the event might be whether it's a tornado
19 or a straight wind or whatever it might be.

20 MR. GIITTER: Yes, I just want to go back
21 to something I said earlier and what we do is
22 risk-informed. So, we don't throw out those aspects.
23 We retained events in depth. We look at that safety
24 margin.

25 So, let's use the same example, let's say

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1 that you do have a situation where a Buick or whatever
2 gets hurled and it crimps the exhaust stack. It's
3 possible and I think, you know, I would agree with you,
4 that's a concern. You can't just say, well, our diesel
5 generator doesn't function.

6 So, then you have -- and I'm just making
7 this up -- but you might have procedures that have
8 somebody go out to the building with a saw and saw the
9 exhaust stack so that it functions.

10 Or, you want to make sure -- that's probably
11 a terrible example. That's more --

12 But, probably a better example is you look
13 at it from a risk perspective that if I do lose that
14 particular diesel, do I have a station blackout diesel?
15 You know, do I have FLEX equipment that I can bring in
16 to provide backup power?

17 I mean that would be looking at it from a
18 defense in depth perspective.

19 Looking at it from a safety margin
20 perspective, you might find that there's only a certain
21 class of missiles that would actually be large enough
22 to actually to crimp that stack. Okay?

23 And it might be that you run the TORMIS code
24 or you look at it, you know, from, again, maybe from a
25 probability perspective. You can get a better idea of

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1 what that risk might be. It may be that you -- I know
2 you can't completely protect against tornado missiles,
3 but it may be that exhaust stack is behind a building
4 and that it's impossible for the Buick to make it past
5 the building and that the exhaust stack, even though
6 smaller missiles would be able to hit it, you know, it's
7 unreasonable for larger missiles to hit it and the
8 smaller missiles aren't capable of crimping it.

9 I mean that's sort of an analysis. But
10 it's not just kind of blindly saying well, it's not
11 protected, it's inoperable sort of approach.

12 So, I don't know if that helps or not.

13 MEMBER SKILLMAN: I understand your
14 response. Thank you.

15 MR. HARRISON: This is Donnie Harrison.
16 Can I make a comment? If I'm on. There I am.

17 Donnie Harrison from the staff.

18 I'll just point out there's some of the risk
19 staff that actually disagree with Joe's position partly
20 because the frequency of the event. He's using 10-4 as
21 the design basis but you can have straight winds in the
22 10-2 range that could pick up some of this stuff to crimp
23 the piping and it's likely to crimp because it's up
24 against a wall.

25 So, you're going to have to look at it at

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1 a site specific. But to generically say the design
2 basis is the starting point for the analysis, I think
3 some staff would disagree with that. You'd have to look
4 at the whole spectrum including the straight winds in
5 the 130 mile an hour range, which are much more likely
6 to occur.

7 So, if you take that perspective, you
8 actually might not be able to screen these hazards out.

9 I'll also point out, and this goes back to
10 Option 1, there already exists a 1983 safety evaluation
11 that allows licensees to use the TORMIS code in those
12 situations to come in and have those things removed from
13 their licensing basis if they can show the risk is small
14 enough.

15 So, there's already a framework for
16 addressing tornados. So, anyway.

17 CHAIR STETKAR: I think the danger that
18 we're getting into is as soon as you bring up
19 illustrative examples are always good and as soon as you
20 bring up a single example, everybody wants to focus on
21 it.

22 I like to use the examples of Godzilla and
23 meteorites because I've seen Godzilla in a movie so,
24 therefore, perhaps Godzilla exists. But in more
25 practice, we don't design against meteorites. We don't

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1 design against meteorites.

2 Does that mean meteorites have zero
3 frequency of occurrence? No, it doesn't. They might
4 be more likely than a Buick flying in a tornado or a
5 straight line wind and bouncing off a building and
6 hitting an exhaust stack at a particular plant.

7 The fact of the matter is, we don't design
8 against meteorites. Why don't we? Because everyone
9 accepts the fact that the frequency and the consequences
10 of a meteorite strike on a nuclear power plant must be
11 acceptable, except nobody's quantified that.

12 So, when you talk about your design
13 criteria and your deterministic defense in depth, there
14 are de facto -- bad term -- there are things that people
15 accept as fundamental notions that may not have a
16 quantitative basis.

17 Where there are other things that people
18 accept as absolutely required that may be
19 quantitatively so small that you're really wasting your
20 time on them. And that, in a general sense, is what,
21 I think, Joe's talking about rather than arguing about
22 whether it's a straight line wind or a tornado or whether
23 it's a Buick or whether it's a, you know, part of my
24 grandmother's house or something like that.

25 MR. GIITTER: Yes, and I agree. You have

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1 to look at it on a plant specific basis. It's hard to
2 generalize the risk without looking at it on a plant
3 specific basis.

4 Okay, so, I kind of lost track of where I
5 was.

6 In terms of the desirable features of the
7 implementing regulation, it would be
8 performance-based. It would allow risk amendments to
9 the license without the need for an exemption. We
10 talked about that already.

11 It would have objective acceptance
12 criteria for risk defense in depth and safety margin
13 going back to the risk-informed aspect. And it would
14 allow licensees to fully achieve the benefits of burden
15 reduction commensurate with the risk significance.

16 And examples of that would be what we've
17 done with 50.69 and the ISI, risk-informed ISI.

18 And then, finally, it would require
19 licensees to address vulnerabilities without requiring
20 the NRC to impose a back-fit.

21 Now, let me give an example of that because
22 I know there was some questions about the
23 vulnerabilities issues and I'll talk a little bit about
24 that in a future slide. But, I would fall back on the
25 experience that we had with NFPA-805.

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1 We did have some licensees that were in
2 compliance with Appendix R. But when they did their
3 fire PRA, they found significant risk outliers.

4 One example I can think of was where there
5 was an inverter right below some cables and a remote
6 shutdown panel nearby and it was a very highly risk
7 significant configuration at the plant.

8 And so, what they identified was moving the
9 inverter and adding incipient detection to that room or
10 to that area to reduce the risk. But it was such a risk
11 significant configuration that my staff jumped on a bus
12 and along regional staff and went to the site to make
13 sure we really understood what the risk significance
14 was.

15 And those are insights we wouldn't have had
16 without doing the fire PRA, you know. So, technically,
17 they were in compliance with Appendix R, yet, there was
18 this risk vulnerability that revealed itself.

19 So, these are the kind of things we're
20 talking about as they were to do a PRA and identify a
21 significant risk vulnerability, we would expect them to
22 take some sort of an action to address that.

23 Possible rule content, scope, the current
24 regulations and aspects of a licensing basis that might
25 be risk-informed, it would just be, you know, as Dick

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1 mentioned, there are some things that aren't conducive
2 to risk-informing and there are some areas where we
3 think some current regulations that can be
4 risk-informed.

5 For each item and scope, you would identify
6 the PRA scope, level of detail and technical adequacy,
7 the appropriate risk metrics, defense and depth
8 elements and safety margins.

9 In other words, it would be composed of a
10 number of different, for example, risk metrics or
11 defense in depth elements that would define what that
12 has to include, what has to be looked at.

13 And then, the third item, acceptance
14 criteria for risk defense in depth and safety margin is,
15 what would be acceptable? What would be our criteria
16 for accepting that?

17 To a certain extent, the improvement
18 activity, too, that Dick talked about will help us
19 define what the appropriate risk metrics defense in
20 depth and safety margins would be.

21 The next slide, please?

22 CHAIR STETKAR: Joe?

23 MR. GIITTER: Yes?

24 CHAIR STETKAR: Before you leave that one,
25 and again, this is, I'll admit, picking on examples but

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1 sometimes examples help.

2 In the description of Option 2, in this
3 particular area where you talk about the scope in which
4 parts of the regulations may be applicable, which parts
5 may not be, there's a footnote that says not all NRC
6 regulations are amiable to being risk-informed.

7 MR. GIITTER: Right.

8 CHAIR STETKAR: And the examples, you say,
9 for example, occupational radiation exposure
10 requirements in 10 CFR Part 20, Fitness for Duty
11 Requirements in Part 26 and Emergency Preparedness
12 Requirements in Section 50.47 and Appendix E would not
13 be subject to alternative risk-informed compliance
14 approaches.

15 And I guess, you know, thinking as hard as
16 I could, it's not immediately clear to me why fitness
17 for duty could be risk-informed. Although I suspect
18 some people might argue that, perhaps, some elements
19 could.

20 But, it's not at all clear to me that why
21 occupational radiation exposure requirements couldn't
22 be risk-informed and it's certainly not clear to me why
23 emergency preparedness requirements couldn't be
24 risk-informed.

25 So, where you're thinking --

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1 MR. GIITTER: I think probably a better
2 qualifier would be that they can't easily be
3 risk-informed. And I'll maybe go through the examples,
4 emergency preparedness, I would think you'd want to have
5 a Level 3 PRA for that to do that.

6 CHAIR STETKAR: But I think, in my sense,
7 what you're talking about, again, trying to keep the
8 conversation as broad in terms of rulemaking and policy,
9 is that there may very well be certain parts of the
10 regulations that are extremely difficult but some of the
11 examples tend to keep focusing me back to that Level 1
12 internal event at power, you know, mind set that might
13 be a trap.

14 MR. GIITTER: Okay. That's a good
15 comment. I understand your comment.

16 So, I think we probably need to explain that
17 a little bit better.

18 CHAIR STETKAR: Again, sometimes if you
19 put, you know, examples in they might detract from the
20 general thought.

21 MR. GIITTER: Yes, yes, okay. Good
22 comment.

23 Okay, so the definition of vulnerability in
24 terms of defense in depth or safety margin, the criteria
25 would include at first identifying the vulnerabilities.

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1 And I think to a large extent, they're going to be
2 self-evident when you do the PRA.

3 And then, once you've identified the
4 vulnerabilities, you'd have to add an event or accident
5 sequence possibly to the plant licensing basis if it
6 revealed something that should be designed against.

7 And then, the next step, of course, is what
8 action do we take given that it's not part of the
9 licensing basis? Would it require an analysis, plant
10 modification? Procedure change?

11 And then, finally, determining the
12 pedigree of the engineering analysis and treatment of
13 the SSE. So, it may be that if you do find something
14 that's a risk outlier as part of your new licensing
15 basis, you would address it but it may not necessarily
16 be using the same conventional approach you did for a
17 design basis accidents under the deterministic
18 approach.

19 CHAIR STETKAR: A concept similar to
20 regulatory treatment of non-safety systems?

21 MR. GIITTER: Yes.

22 CHAIR STETKAR: Or some of the new design
23 certifications, something like that?

24 MR. GIITTER: Yes.

25 CHAIR STETKAR: Okay.

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1 MR. GIITTER: And, in fact, this is
2 actually an idea that was envisioned in NUREG-2150, the
3 idea that you might identify accident scenarios that
4 aren't currently addressed by your licensing basis.
5 And the treatment for those might be a little different.

6 And, you know, some examples, NFPA-805
7 example I used, I think it was an IPE that was done for
8 a plant that was discovered there were safety related
9 switch gear in the turbine building that was below lake
10 level. You know, you can find those kind of
11 vulnerabilities as a result of PRA.

12 And, in that case, the licensee made design
13 modifications to address it. That's the kind of thing
14 we're talking about.

15 Next slide, please?

16 The criteria for self-approval of changes,
17 we talked a little bit about this to the licensing basis.
18 Could use a risk-informed 50.59 process, possibly a
19 risk-informed definition of operability.

20 It would also specify the update of the PRA
21 periodicity. A corrective action and reporting
22 requirements we expect would be part of that.

23 Next slide, please?

24 The staff has learned a lot of lessons from
25 doing the NFPA-805 review and I think we've had some

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1 discussions in the past about some of those lessons.

2 And so, as we look forward, I think it's
3 important to try to make changes based on those lessons.
4 We don't want a repeat and we know for sure that if we
5 don't change some things that nobody's going to be
6 interested in going with an approach where you'd
7 risk-inform a larger set of the currently deterministic
8 requirements.

9 So, there is two approaches I'm going to
10 talk about. The first is an effort that's been
11 undertaken by separate NRC and Industry Risk-informed
12 Steering Committee working groups on PRA technical
13 adequacy.

14 And the third one is kind of an out of the
15 box thought on the PRA certification concept. And I'll
16 talk about both of those.

17 Next slide, please?

18 Under objectives, there were three
19 different objectives that the Risk-informed Steering
20 Committee looked at. This is both the internal NRC
21 Risk-informed Steering Committee and the industry
22 Risk-Informed Steering Committee, and the way it works
23 is they have -- we have separate working groups, but they
24 have common public meetings on a regular basis and they
25 report back to a Risk-Informed Steering Committee

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1 that's headed by Bill Dean, the NRR Office Director and
2 it has Deputy Office Directors on the committee.

3 One of the biggest lessons learned from
4 NFPA-805 is that we had difficulty dealing with new
5 methods, what we call new methods. In essence, a new
6 method, at least a simplified way of explaining, is one
7 that the NRC hasn't reviewed.

8 So, the process that the working group has
9 envisioned, and this is really almost a subject of a
10 separate briefing so I'm going to provide discussion of
11 it at a high level, but the process involves a vetting
12 panel that would consist of senior technical experts
13 from NRC and industry that would evaluate the method and
14 decide which acceptance process would be used.

15 There's four criteria that were
16 considered, the source, whether it's from NRC, EPRI,
17 utility, an owners group.

18 The pedigree, whether it's undergone -- has
19 been formally accepted by the NRC or it hasn't gone, on
20 the other extreme, there would be no independent peer
21 reviews, so, there's a range of pedigree possibilities.

22 Maturity is the method new, never been
23 applied or is something that's commonly used in
24 complexity. Is it a simple, intuitive method or is it
25 complex that requires integration of multiple

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1 disciplines?

2 So, based on a combination of these four
3 criteria, the vetting panel would make a decision in
4 which process to use.

5 The second objective regards the facts and
6 observations that the peer review identifies. And
7 right now, the NRC and industry guidance really don't
8 tell you how to close out an observation from a peer
9 review.

10 The idea is that the licensee would retain
11 and report the F&Os or they would retain the F&Os, report
12 them out to NRC and until they're reevaluated by another
13 peer review, they wouldn't be closed out.

14 And, it's because of that, the NRC
15 generated a lot of RAIs during the NFPA-805 review
16 asking licensees how they dispositioned their F&Os. In
17 fact, that was a source of a number of the RAIs.

18 So, this second bullet, the working group
19 is looking at options for more efficient and effective
20 meanings of closing out F&Os.

21 And then the third, is --

22 MEMBER BLEY: Can I ask you a little about
23 that?

24 You indicated you've had trouble dealing
25 with new methods. But some of that trouble strikes me,

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1 there is a difference between a large scale method
2 methodology and some calculational model.

3 And I can see for the large scale models you
4 really need to get a review to fully understand what's
5 going on.

6 But for some of the calculational schemes,
7 and some of which I think came up in 805, although we
8 haven't reviewed that directly, a plan like you're
9 talking about might really help because there are things
10 that good engineers ought to understand and be able to
11 evaluate without having had a formal review process on
12 the calculational scheme.

13 I'm calling it that but it's kind of any
14 small scale part of the calculation.

15 MR. GIITTER: Yes, and that's the idea here
16 as we're trying to come up with a more efficient and
17 effective way of dealing with F&Os. And, you're right,
18 some of them may be -- that's one of the options that's
19 being looked at is some of the F&Os might be addressed
20 by the licensee or could actually be addressed by the
21 initial peer review.

22 But, a lot of times, the peer review will
23 just identify the F&Os and nothing will come of them.
24 It'll be open-ended.

25 Sometimes the licensee will address them,

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1 but maybe not do a very good job documenting how they
2 address the F&Os.

3 So, really, what we're looking at is a
4 better process, a well understood and defined process
5 for dealing with F&Os.

6 MEMBER BLEY: I like that you're doing
7 that. If memory serves me right, much or at least some
8 of the review problems on 805 happened when you hadn't
9 even had the peer reviews yet, I think. I'm not sure
10 if that's true, but I think that's what we'd heard.

11 MR. GIITTER: Yes, usually before we -- a
12 requirement of submitting an application is the peer
13 review would have been done for the fire PRA and possibly
14 the base PRA.

15 And then the last point here, evaluate
16 additional gaps in peer review process, one of the gaps
17 I'll talk about is a reviewer quals. A lot of times we
18 found out that the peer review reviewers weren't
19 qualified, or at least we had questions about their
20 qualification.

21 So, the idea is that by implementing these
22 three recommendations, and we actually have on Thursday
23 another internal Risk-informed Steering Committee
24 meeting where we're going to discuss the white paper and
25 hopefully make some decisions on where to go forward.

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1 But, by implementing these
2 recommendations, we hope that the regulatory processes
3 associated with verification of PRA technical adequacy
4 for risk-informed licensing applications will be
5 improved.

6 MEMBER BLEY: What does it take to make
7 this happen? This doesn't require the Commission to
8 come down and say --

9 MR. GIITTER: No, no, no.

10 MEMBER BLEY: Okay.

11 CHAIR STETKAR: I was just thinking, Joe,
12 we need to be a little bit sensitive to time this
13 afternoon, but a month ago, May 5th, we had a briefing
14 from the Working Group on Uncertainty.

15 MR. GIITTER: Right. That's what we call
16 Working Group Number 2.

17 CHAIR STETKAR: That's right.

18 MR. GIITTER: This is Working Group Number
19 1.

20 CHAIR STETKAR: This is Working Group
21 Number 1. We've not been briefed by Working Group
22 Number 1 --

23 MR. GIITTER: Right.

24 CHAIR STETKAR: -- primarily because what
25 I had heard was, well, Working Group Number 1 was sort

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1 of just working on fairly straightforward details and
2 there seemed to be a pretty general agreement on how to
3 come to closure there. Is that -- I'll put you on the
4 spot -- is that correct?

5 MR. GIITTER: I won't say an overall yes,
6 but certainly, if you'd like a briefing, we can do that.

7 CHAIR STETKAR: Well, I don't want to waste
8 peoples time, but if you think -- we'll discuss it
9 offline to see whether or not it's worthwhile. It might
10 help reduce some of the discussion going forward in this
11 area if we understood a little bit better where that
12 working group is heading. But we can talk about that
13 offline.

14 MR. GIITTER: The next slide talks -- so,
15 the out of the box approach that my staff came up with,
16 and I'm going to just kind of warn you that this idea
17 really hasn't been fully vetted with the working group
18 or even some of my counterparts in the other division,
19 the risk divisions.

20 But one of the ideas is a Certified PRA
21 model. And it's really a more robust approach to PRA
22 technical adequacy than anything else we've attempted
23 or thought about, I should say. So, it's really more
24 revolutionary than evolutionary.

25 The NFPA-805 experience shows us that an up

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1 front agreement on methods would be very beneficial.
2 So, part of that would be identifying the methods up
3 front with some sort of a process for introducing new
4 methods. And it could be the process that we're working
5 through the working group.

6 The other ideas that the industry peer
7 review, the way we're currently doing them anyway, may
8 change dramatically in that the PRA would actually be
9 certified. And I'll talk about that in the next slide.

10 So, to fully realize the benefits, it might
11 be necessary to have a better defined process for
12 addressing how new methods are addressed or have them
13 approved up front to require PRA analysts to meet the
14 minimum qualification experience requirements. That
15 goes to the third point that the Risk-informed Steering
16 Committee working group was looking at.

17 And then, PRA certification, if you go to
18 the next slide, I'll talk a little bit about that.

19 It's really more in depth than a normal peer
20 review. It would be preferably done by an independent
21 body. Now, that could include NRC people. Actually,
22 this concept is somewhat consistent with, if you're
23 familiar with the phased approach to PRA quality concept
24 that the Commission supported, it's consistent with
25 that idea that you would basically have an approved PRA.

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1 But, it would have to be in depth. It would
2 have to cover the entire model. It would have to ensure
3 that, as I said before, approved methods are employed.

4 And then, you have satisfactory resolution
5 of the review findings, the F&Os, in other words. It
6 would have to be done by this independent body so there
7 wouldn't be any open-ended questions about the F&Os.

8 And then, once it was reviewed, it would
9 become a certified PRA model that a licensee could use
10 to make licensing decisions without the need for further
11 NRC review and approval unless certain thresholds are
12 reached. So, similar to some of the concepts we've
13 talked about earlier.

14 Next slide, please?

15 So, the example scope of an Option 2 rule,
16 this is fairly high level still, but a set of design
17 basis events could be included in the plant specific
18 licensing basis which would reduce the current list of
19 licensing -- excuse me, of design basis events. Or at
20 least you could have some that were risk-informed. And
21 you might add new ones based on new risk information.

22 The other thing that we're looking at is the
23 idea of risk-informing operability determinations.

24 CHAIR STETKAR: Joe, let me -- well, go on,
25 finish the other two bullets. We'll go back to this.

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1 MR. GIITTER: One of the problems you have
2 when you're making an operability determination is
3 you're looking at operability based on deterministic
4 requirements. And this goes back to what I was saying
5 before. I believe that you can, in many cases, use the
6 risk insights to better determine whether something is
7 operable or not.

8 Because when we talk about operability, we
9 looked at it in a relatively narrow and strict sense.

10 The other possibility with the Option 2
11 rule is it could subsume some of the existing
12 risk-informed regulations such as 50.69, 50.488 and
13 others.

14 For example, you may not have to come in
15 with, let's say you wanted to go submit an NFPA-805
16 application or a 50.69 application, rather than submit
17 separate applications, you could submit an application
18 under this new rule envisioned and be able to get the
19 same benefits, if you will, under these other
20 risk-informed rules.

21 In other words, it would be one approach to
22 a number of different areas of the regulation that are
23 currently risk-informed.

24 So, let me go to the conclusion.

25 MEMBER SKILLMAN: Joe, I've got to jump in

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1 here.

2 On this slide 13, risk-informed
3 operability determinations, this -- maybe I'll insert
4 some humor here, but perhaps it's tongue in cheek, but
5 perhaps it's serious.

6 Number one, seal leak off on a PWR kind of
7 a pernicious problem, we've dealt with it for years, I
8 think that the basis for the maximum leak off and tech
9 specs is really dependent upon the manufacturer's
10 testing of the seal package.

11 Most of us know that the seals are robust
12 for probably twice that amount of leakage.

13 CHAIR STETKAR: Were they seal leak off
14 rates in your plant tech specs? There weren't in any
15 tech specs I've ever seen.

16 MEMBER SKILLMAN: Yes, we had a limit.

17 CHAIR STETKAR: You did? Okay.

18 MEMBER SKILLMAN: But where I'm going with
19 this is, I can kind of conjure up in my mind a call to
20 the region at 5:00 on Friday afternoon saying we've got
21 one pump and it's pushing the limit.

22 But guess what we've got? Three more pumps
23 and we've got bookoodles of make up capability and we
24 don't really think we're facing small break LOCA or seal
25 LOCA because we think at the rate at increase of the

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1 leakage, we can probably make it to the next outage,
2 which is an argument you probably heard or something
3 like that in times past.

4 That sounds to me like a very slippery
5 slope. Operability determinations, at least in my
6 mind, need to be crisp. They need to be defensible.
7 They need to be based on not just a realistic assessment
8 of what you're reserve capabilities are, but a very
9 sober assessment of what the consequences are if your
10 risk determination fails.

11 So, when you say risk-informing
12 operability determinations, it seems to me that that is
13 opening a Pandora's box that could just really undo some
14 of the foundations that we've come to depend on.

15 And I guess I'd just like to illicit your
16 thoughts on that.

17 MR. GIITTER: Well, I actually agree with
18 everything you said. I think if you did a risk-informed
19 operability determination, it would have to be
20 realistic.

21 I think some of the problems are that when
22 we look at operability that sometimes we're doing it in
23 a way that's not realistic.

24 In terms of defense in depth and safety
25 margin, that's all part of our decision making criteria

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1 and that would be an essential aspect of how we would
2 decide whether or not something we'd be supportive or
3 not.

4 It's not just on the numbers. In fact, one
5 of the things I try to emphasize is let's not put a lot
6 of emphasis on the numbers. Let's look at it, you know,
7 the numbers give us insights into the relative magnitude
8 of the risk. But, let's look at defense in depth and
9 safety margin.

10 So, hopefully, we're not going to use an
11 argument of numbers to make a decision like the one you
12 came up with without a strong safety basis for it and
13 without it being realistic.

14 MR. HARRISON: This is Donnie Harrison of
15 the staff again, if I can just give a perspective.

16 Risk-informing operability was a topic
17 that came up about a decade ago in response to a licensee
18 that had a poor performing diesel generator. And at
19 that time, it was discussed, could you use a
20 risk-informed approach?

21 And the answer was no. And the reason it
22 was no was operability carries, if you will, a legality
23 to it. If I do a test of a diesel and it passes the
24 performance test, it's operable. That's a
25 designation. It doesn't carry a probability of being

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1 operable, it is operable. If it fails the test, it's
2 inoperable.

3 And so, there's some legality to that. So,
4 unfortunately, Joe didn't have the benefit of vetting
5 some of the slides.

6 So, again, the staff would probably have to
7 go to OGC and have this discussion with them if we were
8 to pursue this because of the tech spec requirements and
9 issues you might get into about operability.

10 You definitely don't want to test a
11 component to failure because you're worried about
12 operability from a risk standpoint that has a high
13 unavailability or a high unreliability. You don't want
14 to them test it until you prove your point.

15 MEMBER SKILLMAN: Yes, and this, in my case,
16 it was just over 10 gallons a minute identified seal or
17 whatever else, down you go.

18 MR. GIITTER: And nobody's proposing we do
19 that. Again, I think there's maybe a misunderstanding
20 about what we mean by risk-informing operability
21 determinations.

22 Right now, when we look at whether a
23 system's operable or not, largely, it's a black and
24 white issue. And largely, it's based on criteria that
25 may not be actually that realistic or that risk

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1 significant.

2 And that's the point is we need to bring
3 realism to our decision making processes. And, you
4 know, what Donnie said is right, we haven't fully vetted
5 this with OGC, that's something we're going to have to
6 do. I understand that there may be, you know, some
7 legal issues. But right now, what I'm proposing to you
8 is the staff's kind of out of the box thinking on an
9 approach to go forward.

10 So, as long as you look at it in that
11 context, yes, we have more work to do, but I think it's
12 important to talk about some of the thinking we've done.

13 CHAIR STETKAR: But, again, and I'll try to
14 be brief, but whenever you bring up specific examples,
15 you always get discussions about specific examples.

16 I'll bring up. The supervisor that
17 designed nuclear station, I can say it's name because
18 it doesn't exist anymore, we had a completely shared
19 component cooling water system between the two units,
20 five pumps. One pump could be in operable
21 indefinitely, two pumps could be inoperable for seven
22 days. If we had more than two pumps inoperable, our
23 technical specifications required us to immediately
24 shutdown and go to cold shutdown.

25 You couldn't do that with two pumps

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1 available. Therefore, from a risk perspective, the
2 worst thing that we could do --

3 MR. GIITTER: Is shutdown.

4 CHAIR STETKAR: -- is shutdown.

5 If I had done a risk-assessment, I could
6 justify operating for a long period of time, not
7 indefinitely with three pumps inoperable.

8 So, there's an example where some holistic
9 risk perspective can help you make better judgments, you
10 know, give -- and I'm just saying, black and white
11 something inoperable.

12 MEMBER SKILLMAN: But that's a case where
13 the tech specs are out of sync with the real
14 configuration that's required to operate to the plant.

15 CHAIR STETKAR: And I think that's some of
16 rather than saying black and white is it operable or
17 inoperable, given the fact that it's inoperable, you
18 know, what ought you to do in terms of a risk perceptive?
19 Is it better to shutdown? Is it better if the diesel's
20 inoperable to operate for the next eight hours because
21 the risk of losing off-site power is relatively low
22 rather than shutting down where you have a chance of
23 losing off-site power because you lose the generation?

24 MEMBER BLEY: I know we have somebody
25 waiting to talk, but I would toss in I'm glad to see

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1 you're thinking about this. And I understand all the
2 points that have been made.

3 Burt often -- not often -- always those
4 operability requirements are designed against design
5 basis accidents. And something, and there are lots of
6 examples you can cite, something might not be operable
7 for that purpose, but operable for anything short of
8 that.

9 And I mean that distinction well thought
10 out and known and could be very helpful when you don't
11 get the design basis accident but something else is
12 going on.

13 MR. GIITTER: And a lot of times when you
14 look at operability, it's against the tech spec
15 requirement.

16 I'm not going to name the plant, but one of
17 the issues we've dealing with lately is a plant was
18 vulnerable to some tornado vessels --

19 CHAIR STETKAR: That seems to be the theme
20 today.

21 MR. GIITTER: It's the common problem
22 right now.

23 But this had to do with they credited some
24 fans in their non-safety mechanical draft cooling tower
25 to be able to get to cold shutdown within a certain

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1 number of hours. And because of this vulnerability, it
2 would have required them a greater amount of time to get
3 to cold shutdown.

4 So, the question was, were they operable or
5 not? And we spent countless number of hours looking at
6 contingency plans in case they considered themselves to
7 be inoperable.

8 The net effect would have been, it would
9 have taken them maybe an extra day or so to get to cold
10 shutdown. Did it affect any critical safety functions?
11 No. It was just, it was because their licencing basis
12 specified that they would be able to achieve cold
13 shutdown in a certain number of hours.

14 So, it's not always, you know, you need this
15 structure system and component to defend against a
16 design basis accident, it may be a matter of you make
17 some assumptions in your licensing basis about how long
18 it takes to get to cold shutdown and you may not be able
19 to achieve that.

20 MR. MIZUNO: Is this operating?

21 This is Geary Misuno, Office of the General
22 Counsel for NRC.

23 And I did want to provide a little bit of
24 historical perspective on the advice that OGC had given
25 to the staff on operability which is, first of all,

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1 there's no legal reason why the NRC could not move from
2 a deterministic approach in terms of defining
3 operability to something that is more risk-informed.

4 The only question is, how one is going to
5 explain that and making sure that we are consistent
6 across the board and that we get a Commission buy in on
7 that given the long history of the interpretation.

8 But, I think in the short discussion that
9 you had here, one has to wonder whether, in fact, a
10 reinterpretation of what operability means is, in fact,
11 really necessary.

12 Because we also told the staff that,
13 really, the question is, given that, if you determine
14 that something is inoperable from a deterministic
15 standpoint, it still remains for the staff to be able
16 to say what is necessary in order to -- once you've made
17 that determination that something is inoperable.

18 And that could be risk-informed. And that
19 can be done right now without any change to our current
20 regulatory approach or inform the Commission. Because
21 the Commission has already told us, we can be
22 risk-informed in dealing with these kinds of things.

23 So, for example, with our tech specs, we
24 could move to a risk-informed concept of what would be
25 the action statement once you've made a deterministic

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1 finding that your SSC is operable?

2 So, there's a lot of flexibility and I think
3 it's ultimately up to the staff and ultimately to be
4 brought to the attention of the Commission to consider
5 what aspects of our regulatory infrastructure we want
6 to call risk-informed and how we're going to explain
7 that.

8 MR. GIITTER: So, let me just conclude real
9 quick.

10 CHAIR STETKAR: Before -- go back to 13
11 because this, if you can answer the question now, it'll
12 help my fundamental confusion.

13 As I read the discussion of Option 2 and as
14 I listened this afternoon, I'm still confused.

15 The first bullet on this slide says, set of
16 design basis events included in the plant specific
17 licensing basis. The current list could be reduced,
18 new events could be added based on risk information.

19 That seems to tell me and some of the stuff
20 that I read in the white paper seems to tell me that
21 Option 2 says on a -- the rule would be written that on
22 a voluntary basis, I, as a plant, could risk-inform my
23 entire licensing basis.

24 In other words, my entire set of licensing
25 basis events, my technical specifications, everything.

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1 Is that the concept of Option 2?

2 MR. GIITTER: I'm going to stop just short
3 of saying the entire licensing basis because I don't
4 think we've evaluated it that much.

5 CHAIR STETKAR: Okay.

6 MR. GIITTER: But I do think there would be
7 a significant subset of a licensing basis, a current
8 licensing basis that may be risk informed.

9 CHAIR STETKAR: Okay, thanks. And let me
10 interject because other things that I read and what
11 other things that I heard this afternoon seemed to say
12 no, Option 2 is targeted only at a selected set of issues
13 like fire protection, like tech specs, like, you know,
14 any other identified focus set of issues but it's not
15 the broad brush.

16 And the reason I bring this up is that if
17 it is the broad brush, if it's intended to be the broad
18 brush, then Charlie Brown's question about the search
19 for additional vulnerabilities, and my comparable
20 question about the search for additional
21 vulnerabilities, to me, makes sense because you're
22 opening up everything.

23 MR. GIITTER: Right.

24 CHAIR STETKAR: If it is only intended to
25 be a selected set of targeted applications, then that

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1 search for additional vulnerabilities, to me, doesn't
2 make any sense at all because you're adding burden --

3 MR. GIITTER: Without, yes.

4 CHAIR STETKAR: -- without any
5 commensurate benefit.

6 MR. GIITTER: Right.

7 CHAIR STETKAR: You know, you're adding
8 benefit, perhaps, in one focused application, but, you
9 know, for NFPA-805, you don't require people to look for
10 seismic vulnerabilities, for example.

11 MR. GIITTER: Right.

12 CHAIR STETKAR: So, if the intent is indeed
13 to be closer to addressing, I'll use the word entire just
14 for an example, to address the entire licensing basis
15 then I get it.

16 But when you -- I'm not speaking very well
17 this afternoon -- in the white paper, I'll tell you, that
18 doesn't come across.

19 MR. GIITTER: Right.

20 CHAIR STETKAR: It seems to in parts, but
21 in other parts, it seems to be --

22 MR. GIITTER: And maybe it's a little
23 confusing --

24 CHAIR STETKAR: -- focused on
25 application.

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1 MR. GIITTER: -- because the concept is
2 that you have a list of things that you could
3 risk-inform. And the licensees may decide they don't
4 want to risk-inform everything. There may be some
5 subset of that.

6 And, you're right, if it's broad, though,
7 you would expect to look for vulnerabilities.

8 CHAIR STETKAR: If this is cast in the
9 sense of rulemaking, we're going to write a rule that
10 says on a voluntary basis, licensees can adopt this
11 however it's characterized, alternative license,
12 risk-informed alternative licensing basis. Then, I,
13 as a licensee, can obviously select which particular
14 areas I feel I might have the most benefit, recognizing
15 that if everything is on the table, I should also, in
16 fairness, look for additional vulnerabilities.

17 And that's fine, that's my value judgment
18 whether I want to adopt this voluntarily, recognizing
19 that everything is on the table.

20 MR. GIITTER: Right.

21 CHAIR STETKAR: It's different, though,
22 than if you say we're going to write a rule that allows
23 licensees on a voluntary basis only to address certain
24 issues that the NRC will identify.

25 MR. GIITTER: Oh, I see. Okay.

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1 CHAIR STETKAR: Which, reading the white
2 paper, I could be led to that conclusion.

3 MR. GIITTER: Okay.

4 CHAIR STETKAR: The NRC will identify
5 certain issues that will be under the scope of Option
6 2 that will then be available to licensees to address.
7 And, oh, by the way, if you address any of these, you
8 have to look for additional vulnerabilities.

9 MR. GIITTER: Yes, that's a good comment.

10 CHAIR STETKAR: So, be careful when you
11 read that.

12 MR. GIITTER: We need to make that clearer,
13 yes.

14 CHAIR STETKAR: Because that was my
15 fundamental area of confusion in the scope of Option 2.

16 MR. GIITTER: Okay.

17 Okay, so just to conclude real quick
18 because I know we're running out of time, the
19 conclusion, I talked about some of the preliminary
20 factors that could be considered in developing an RMRF
21 rule.

22 We envision extensive stakeholder
23 interaction to ensure that benefits are realized but
24 also that unintended consequences are minimized. And,
25 as we just talked about, Option 2 could range from a very

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1 limited application to a fully risk-informed approach.

2 So, that concludes my remarks.

3 CHAIR STETKAR: Are there any other
4 questions regarding Option 2? Comments?

5 MEMBER BLEY: I think I have a question.

6 Let me back up to the one John was just
7 asking about, you don't need it up there.

8 CHAIR STETKAR: Slide 13.

9 MEMBER BLEY: Set of design basis events in
10 the licensing basis, once we start digging into this,
11 we're getting awfully close to what was in the RMRF, I
12 think. And I guess I'll wait until you talk Option 3
13 to clarify for me the real difference between 2 and 3.

14 MR. GIITTER: Yes, I mean I can tell you
15 right now the biggest differences that Option 2 is
16 voluntary, excuse me, bad word, alternative and that it
17 could be implemented, you know, on a graded approach,
18 it's not all or nothing.

19 MEMBER BLEY: Okay, and Option 3 is you're
20 all in?

21 MR. GIITTER: Yes.

22 MEMBER BLEY: Everybody's on?

23 MR. GIITTER: And they're required to be
24 in.

25 MEMBER BLEY: Okay.

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1 CHAIR STETKAR: Anything else on Option 2?

2 If not, I'm going to call for recess and
3 we'll regroup in terms of timing and you may want to
4 think about how you organize the rest of the afternoon.

5 We will recess until 3:05.

6 (Whereupon, the above-entitled matter went
7 off the record at 2:51 p.m. and resumed at 3:06 p.m.)

8 CHAIR STETKAR: We are back in session and
9 we'll continue with the discussion on Option 3, I guess.

10 MR. DUDLEY: Option 3, I'm on slide ten.
11 I'll try to -- we're a little bit behind schedule, so
12 I'm going to try to go through these fairly quickly.

13 Power Reactor Option 3 is to implement the
14 plant specific RMRF approach as described and
15 recommended in NUREG-2150. We would issue a regulation
16 that required all operating reactors to perform an
17 update PRA of a certain quality.

18 And then they would use these PRAs to
19 establish a plant specific licensing basis based on the
20 plant specific risk profile, an NRC specified risk
21 management objective.

22 And so that it's risk-informed and not risk
23 based, we would have an enhanced criteria for
24 determining the adequacy of defense in depth and safety
25 margins and other non-risk factors if, you know, if

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1 there are any.

2 So, based on the risk profile, a licensee
3 would implement the plant specific licensing basis by
4 deciding how the risk objective would be met. They
5 would then have to ensure that the necessary protections
6 are in place to meet the risk management goal,
7 demonstrate the adequacy of defense in depth and safety
8 margins.

9 They'd have to establish a risk-informed
10 decision making process and establish a monitoring
11 feedback and a reporting process.

12 On continuing Option 3 on slide 11, so, each
13 plant's licensing basis would consist of technical
14 requirements based upon plant specific attributes and
15 applicant selected design elements and rationales for
16 why their technical requirements adequately address
17 risk and defense in depth.

18 It would have an FSAR level description of
19 the plant specific attributes and the design elements
20 and constraints that must be maintained. And it would
21 have a process for maintaining the validity of those
22 rationales or the technical basis throughout the
23 facilities operating lifetime.

24 It would -- Option 3 would require both the
25 NRC and licensees to use a structured risk-informed

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1 decision making process. And licensees would be
2 required to use that process with monitoring and
3 feedback to ensure that the plant specific licensing
4 basis was consistent with the risk profile of the plant
5 which could change over time.

6 So, that's my discussion of -- that's the
7 discussion of Option 3. And so, we've discussed right
8 now the three different RMRF implementation options for
9 nuclear power reactors.

10 Are there any additional questions? We've
11 already had quite a few on Option 2.

12 CHAIR STETKAR: Yes, and only one. And
13 this is, again, to try to better understand the
14 distinction between Option 2 and Option 3.

15 I wanted to ask Joe when he was up, but I
16 understand what Option 3 is.

17 Let me phrase it this way, Option 3
18 discusses the design extension or sometimes it's called
19 design basis extension, in some places it's called
20 design enhancement, you know, that category of events.

21 And those events, as I understand it, could
22 be current design basis events that are determined to
23 be less risk significant. They could be additional
24 events that are identified by licensees that weren't in
25 the current design basis event category.

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1 But, anyway, it's that intermediate
2 treatment category of events.

3 Option 2 doesn't discuss that notion but
4 wouldn't it also apply under Option 2 if indeed Option
5 2 has an intent to examine, I used the word before and
6 I'll keep it up, the entire licensing basis of the plant?

7 MR. DUDLEY: Well--

8 CHAIR STETKAR: So, wouldn't that
9 intermediate category of events by implication also
10 apply under Option 2?

11 MR. DUDLEY: I think it would, yes.

12 CHAIR STETKAR: Thanks. That's all I
13 wanted to make sure is that I was understanding.

14 MR. DUDLEY: It may be, depending on the
15 scope of the PRA under Option 2, you might identify more
16 or less.

17 CHAIR STETKAR: Sure, absolutely. As I
18 said before, it's up to the particular licensee who
19 wanted to adopt Option 2 to define what the scope of
20 applications or events, whatever they want to do.

21 But, in principle, if a licensee came in and
22 said I want to redefine my set of licensing basis events,
23 they could indeed have a set of design basis events, a
24 set of whatever you want to call them, other events and
25 ones that are not subject to any oversight.

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1 MR. DUDLEY: Right.

2 CHAIR STETKAR: Okay, thanks. That
3 helps.

4 MEMBER BLEY: That little discussion got
5 me thinking a little more.

6 You know, under the RMRF, I see how you come
7 up with the complete set of licensing basis events and
8 the next category as well.

9 Under Option 2, if you go in and start
10 looking at design basis events, what I'm hanging up on
11 is the current process we have comes up with those from
12 a variety of original sources. It came up with this as
13 a reasonable set of design basis events.

14 And that thinking gives us some confidence
15 that it's complete and a good enough set to cover us.

16 Under RMRF when you develop the full set,
17 there's this structured process to come up with them so
18 that you, again, you have confidence you have a complete
19 set.

20 If we go in and start going after them one
21 at a time, either adding something or taking something
22 away, you probably haven't worked this out, but what
23 kind of process would we envision to make sure that we're
24 not just whittling away, but we're being balanced about
25 it and we're keeping a complete set of the important

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1 events or something that approximates a complete set of
2 the important ones?

3 MR. DUDLEY: I mean, if a licensee shows
4 that certain design basis events are not risk
5 significant, then I think, and demonstrates that
6 clearly with a quality upgraded PRA, then I think we
7 would probably be amiable to reducing or eliminating
8 some of those requirements.

9 MEMBER BLEY: The thing I'm kind of hanging
10 on is --

11 MR. DUDLEY: On the other hand, it would
12 have to be the search for vulnerabilities and so, and
13 this is -- none of this has been vetted or just thoughts.

14 MEMBER BLEY: Right.

15 MR. DUDLEY: But, it seems like maybe under
16 Option 2, there's a minimum scope of the PRA upgrade that
17 you would have have for entry into the process so that
18 if that, say you only wanted to change three things in
19 your plant but you might have to do a little bigger PRA
20 update than just for those three things.

21 So that then the search for vulnerabilities
22 that you performed had some meaning and you had indeed
23 done a well intended search for, you know,
24 vulnerabilities such that if we let you reduce some
25 requirements, you either looked and found some other

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1 ones that you needed to mitigate or you showed that you
2 didn't have any other things that needed mitigation.

3 MEMBER BLEY: Yes, I think that's going to
4 be important to work out if we should ever go this route.

5 MR. DUDLEY: Yes.

6 MEMBER BLEY: Because, you know, we want to
7 make sure we look and if we start using the PRA, we want
8 to see what else it told us and there might be things
9 that are there that we should be paying more attention
10 to before we start whittling away on one after the other.

11 MR. DUDLEY: Right, right.

12 MEMBER BLEY: Okay.

13 MR. DUDLEY: I'll go next -- yes, the next
14 topic goes to Section II of the white paper. This is
15 almost, well, it's a different subject but it is yet
16 related.

17 Section II is the reevaluation of power
18 reactor improvement activities from Near-Term Task
19 Force Recommendation 1. And Recommendation 1 was to
20 establish a logical systematic coherent regulatory
21 framework that appropriately balances defense in depth
22 and risk considerations.

23 We provided our recommendations to the
24 Commission in SECY-13-0132 in December of 2013. This
25 SECY paper recommended three regulatory framework

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1 improvement activities and they are.

2 To establish a new design basis extension
3 category of events and associated requirements and to
4 ensure that design basis extension rules address all the
5 regulatory attributes that are not specified in advance
6 like they are for design basis requirements.

7 And this would mean performance goals,
8 treatment requirements, documentation requirements,
9 changes of processes and reporting requirements.

10 Improvement Activity 2 recommended in SECY
11 13-0132 was to establish Commission expectations for
12 defense in depth. And this is power reactor safety.

13 A definition of defense in depth and
14 criteria for the adequacy, determining when you have
15 adequate defense in depth.

16 And Improvement Activity 3 was to clarify
17 the role of voluntary initiatives.

18 The Commission's SRM in response to SECY
19 13-0132 did direct the staff to evaluate the
20 implementation status of certain safety significant
21 voluntary initiatives. So they took some action on
22 Improvement Activity 3.

23 But the Commission, on Improvement
24 Activities 1 and 2 deferred their decision to be made
25 later on in the context of the Commission direction on

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1 risk management regulatory framework.

2 To kind of accelerate this process, the
3 staff is going to make recommendations for a risk
4 management regulatory framework and associated
5 recommendations for how Improvement Activities 1 and 2
6 should be addressed under each of the options for the
7 RMRF.

8 So, slide 14 is the reevaluation of the
9 design basis extension category. The staff's thinking
10 now is that it really isn't necessary to create this
11 design basis extension category.

12 And for Option 1, RMRF implementation
13 Option 1, maintain the existing framework and
14 implementation Option 2, implement the risk-informed
15 alternative licensing basis, what the staff has decided
16 it could do is to develop clear internal rulemaking
17 guidance to ensure that we had consistent criteria for
18 specifying all those different regulatory attributes
19 that I mentioned previously, whenever any regulation,
20 whenever we write any new regulation.

21 And this would, of course, it's most useful
22 for beyond design basis requirements. But, if we had
23 internal guidance that just said each rule has to
24 address these criteria, then it would make -- then the
25 staff would be sure that whenever we were regulating

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1 beyond the design basis, that we had the rule specified
2 all the appropriate regulatory attributes that the
3 licensees really need to know to fully implement that
4 regulation.

5 We believe we could do this internal
6 guidance using existing resources as part of routine
7 guidance updates. And, if we did that, there's really
8 no need to go out and spend resources to formally define
9 this new category because the major purpose for having
10 the category is just to make sure that rules that were
11 beyond design basis were complete and consistent and
12 specified all the appropriate regulatory attributes
13 that needed to be dealt with for regulations that are
14 not within the design basis.

15 But for Option 3, implantation Option 3
16 which is the NUREG-2150 approach, 2150 said we should
17 establish the design enhancement category instead of a
18 design basis extension category. So, if the Commission
19 chose Option 3, then we would go forward and we would
20 implement the design enhancement category as specified
21 in NUREG-2150.

22 But, since Option 3, with everybody having
23 to do a PRA and it would take a long time to implement
24 that option, probably more than ten years, the staff
25 would still go ahead and write this internal rulemaking

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1 guidance so that we had something to make sure that any
2 rules that we issued in the interim period, that they
3 were complete in terms of all necessary regulatory
4 attributes.

5 Slide 15 is -- yes?

6 MEMBER BLEY: If you have the authority and
7 decided to do Option 3, how would you get there? Would
8 you end up doing something just like Option 2 for the
9 first many years or would it be some other approach?
10 How would we possibly transition from where we are now?

11 MR. DUDLEY: From where we are to Option 3?

12 MEMBER BLEY: Yes.

13 MR. DUDLEY: Well, we'd write a rule that
14 says every plant has to complete a PRA by such and such
15 a date and it would certainly not be a short term. It
16 would be in some number of years in the future.

17 And then we would also include in that
18 regulation how we have to include the criteria, the risk
19 management criteria that licensees should ensure that
20 their plants meet.

21 And it would be difficult to like write a
22 regulatory guide that tells licensees how to go about
23 implementing this.

24 MEMBER BLEY: The part I can't quite
25 envision is how we go one day from the way we are now

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1 to now we've got everything in place, we've got all the
2 things worked out and tomorrow, we're in the new regime.

3 It almost seems to me you would do something
4 like Option 2 to get there and you'd go after the design
5 basis events kind of a few at a time and work this out.

6 MR. DUDLEY: It would be a tough, you know,
7 you make a good point. That's a tough hurdle. You
8 almost can't get there from here. You have to go
9 somewhere else first.

10 CHAIR STETKAR: It's a little bit, if I
11 look at your second sub-bullet, you know, under -- it
12 said for Option 1 and Option 2, we don't need to
13 establish a design basis extension category. Or I'll
14 call it a design enhancement category because I'm not
15 -- I don't want to quibble over words, semantics.

16 But, you're asserting that under Option 2,
17 you believe that the staff, I think if I interpret that
18 second sub-bullet correctly, that the staff could
19 develop appropriate regulatory guidance for someone who
20 adopts Option 2 to determine how that middle ground set
21 of events would be populated.

22 And Dennis raised the concern about, you
23 know, the search for other risk significant events. I
24 talked about dropping design basis events into that
25 category.

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1 You seem to say that, well, if I -- under
2 Option 2, we don't need specific rulemaking to do that
3 because the staff could develop guidance on how to do
4 that. You'd have to do that for Option 3, too, wouldn't
5 you?

6 That's part of, I think our problem in terms
7 of how do you get from where we are today to Option 2,
8 I can see a little bit better path. Option 3, I don't
9 know how you get there without going through something
10 that looks like Option 2.

11 Because as soon as you say that Option 2
12 indeed will allow someone to develop that middle set
13 without putting any specific words on it of events, then
14 the staff and the industry will have to understand some
15 basic guidance on what it means, right?

16 MR. DUDLEY: We've specified criteria for
17 risk criteria and if a design basis event was not risk
18 significant, it could then be removed into that --

19 CHAIR STETKAR: Next category?

20 MR. DUDLEY: -- other category that we're
21 not going to formally establish.

22 And, but if, also, if there were
23 vulnerabilities, plant specific vulnerabilities of a
24 particular threshold, then they would also become
25 regulated in the equivalent of that same category.

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1 But, I mean we just don't really need to
2 define formally that category as to -- and how to -- well
3 --

4 CHAIR STETKAR: You don't need to define
5 specific -- are you saying you don't need to define
6 specific events that would go in that category?

7 For example, station blackout event would
8 be in that category but Event X and Z would not be in
9 that category.

10 MR. DUDLEY: This is plant specific, so I
11 mean by establishing the risk criteria, the category
12 would implicitly be defined.

13 CHAIR STETKAR: Right, okay. But you
14 would have to do that for Option 2 also, wouldn't you?

15 MR. DUDLEY: Yes.

16 CHAIR STETKAR: Okay.

17 MR. DUDLEY: Yes.

18 CHAIR STETKAR: Okay.

19 MR. DUDLEY: Okay, on slide 15 is our
20 reevaluation of Improvement Activity 2 which was
21 establish Commission expectations for defense in depth.

22 Right now, the staff recommends that the
23 Commission authorize the resources for the staff to go
24 out and establish the Commission's expectations for
25 defense in depth under all three options.

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1 Under Option 1, the existing framework, we
2 need better defense in depth guidance.

3 Under Option 2, when you rely more on risk
4 informed activities, you even more need good guidance
5 on defense in depth.

6 And, under Option 3, when you rely fairly
7 heavily on risk activities, you need even more to come
8 up with better criteria for the definition of and the
9 adequacy of defense in depth.

10 So, we believe that the Commission should
11 approve this activity consistent with the approach that
12 the staff recommended originally in the Recommendation
13 1 SECY paper. We are, though, going to reevaluate the
14 Recommendation 1 paper, said we would do this in a policy
15 statement and right now, we'll just kind of sit back and
16 I think we'll reevaluate and determine if a policy
17 statement is the best vehicle to do that or if some other
18 regulatory tool or regulatory guide should be what we
19 use to establish the Commission's expectations for
20 defense in depth.

21 Clearly, the Commission would have to
22 approve this and we would make some -- and then we would
23 need to make conforming changes throughout the rest of
24 our regulatory guides and I think regulatory analysis
25 guidelines also that mention defense in depth to make

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1 sure that all of our guidance is consistent with these
2 well defined Commission expectations.

3 And those are Improvement Activities 1 and
4 2.

5 Okay, next, Mary Drouin will talk about
6 Section III of the white paper which is the agency wide
7 risk management policy statement.

8 MS. DROUIN: Okay.

9 CHAIR STETKAR: Mary, before we go through
10 this, back in -- I've lost my notes here again --
11 February of this year, we had a briefing on a white paper
12 that had a conceptual example of this policy statement
13 that was produced in November of 2013.

14 This white paper, seems to me, much less
15 informative than the previous white paper. I'm
16 assuming that was intentional.

17 MS. DROUIN: Well, let me tell you the
18 difference of the two.

19 The thing that we produced a year ago, you
20 know, we get caught up with the words policy statement.

21 We get caught up with the term policy
22 statement. And if you look at the document that gets
23 published in the Federal Register and we call that
24 entire document a policy statement. In essence, only
25 a very small part of it is the actual policy statement.

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1 So, when we created that document over a
2 year ago, we were creating the whole thing. You know,
3 we were giving you the background discussion. You
4 know, all of those kinds of things that you typically
5 find in that entire document.

6 And when you looked at the part that was the
7 actual policy statement, it really wasn't all that
8 long.

9 CHAIR STETKAR: That's right.

10 MS. DROUIN: So, a lot of the information
11 you found interesting, which I thought was also
12 interesting, was in all these other discussions.

13 CHAIR STETKAR: That's right.

14 MS. DROUIN: And that policy statement was
15 focused strictly at defense in depth. It was not a
16 policy statement --

17 CHAIR STETKAR: No, not the defense in
18 depth, we've seen a couple of presentations. This is
19 in particular a briefing we had on something called
20 White Paper on a Conceptual Example of a Proposed Risk
21 Management Regulatory Framework Policy Statement Draft
22 Work in Progress dated November 8, 2013, ML 13273A517.

23 And that was risk management regulatory
24 framework policy statement with -- it was relatively
25 short but with the background information surrounding

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1 it.

2 MS. DROUIN: You know, you caught me
3 completely off guard, I'll just have to be honest,
4 because I'm trying to remember. I mean I was probably,
5 I'm sure the primary author and I am just totally
6 forgetting.

7 CHAIR STETKAR: Okay. I was -- the only
8 reason I wanted to bring it up, and I'm not trying to
9 be -- I was curious because many of the concepts that
10 we're going to be discussing here shortly were in that
11 other white paper, but they were presented more crisply
12 as if they were prepared for a Federal Register Notice.
13 And it did, in fact, include a draft policy statement,
14 which, as you said, is relatively short.

15 MS. DROUIN: Okay. What you will --

16 CHAIR STETKAR: It was focused -- however,
17 it was focused on power reactors, not the broader -- no,
18 no, as a matter of fact, it also addressed the broader
19 issues.

20 MS. DROUIN: It was an agency wide.

21 CHAIR STETKAR: It was agency wide.

22 MS. DROUIN: I'm going to have to go back
23 and look at it. But maybe what has happened is that what
24 you see here, it's in the form of, well, it's in
25 everything.

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1 CHAIR STETKAR: It is.

2 MS. DROUIN: However, if you took out
3 everything that's on those slides and collapsed it down
4 into text and almost took it word for word, that is what
5 would be the actual policy statement.

6 CHAIR STETKAR: Except in the white paper
7 itself, it's still primarily bulletized, if you will,
8 without bullets. A policy statement could include
9 something like this. A policy statement could include
10 something like this.

11 These additional considerations could be
12 made without the kind of coherent presentation that was
13 in that previous white paper. And I was just curious
14 whether, you know, that was a conscious -- it seemed to
15 me stepping back from something that seemed to be
16 focused down to an actual statement and stepping back
17 from that to say, well, perhaps we need to think about
18 these issues before we get around to writing something.

19 MS. DROUIN: Well, it's more of the
20 Commission has not given us the approval to develop a
21 policy statement yet.

22 CHAIR STETKAR: That's true.

23 MS. DROUIN: So, that's kind of, you know,
24 this thin line we're walking on of giving them enough
25 information so that they understand, you know, when we

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1 recommend that a policy statement be developed, what we
2 mean by that.

3 So, trying to give them enough information
4 and, you know, we have the option and has not been
5 decided, you know, whether we take, you know, what we
6 put in bullet format and actually translate it and say,
7 okay, here could be an example of such a policy
8 statement. So, we've presented it more in bullet
9 format.

10 CHAIR STETKAR: Okay. I just got confused
11 because the title of that enclosure, too, is an example
12 of an agency wide risk management policy statement.
13 And I thought we had one, but it seems like we backed
14 off from that.

15 MR. DUDLEY: You know, I --

16 MS. DROUIN: I don't think we've really
17 backed off. We've just gotten more focused.

18 MR. DUDLEY: I thought you got less focused
19 is my point. I thought didn't take the 2013, talked
20 about risk management regulatory framework and it
21 talked about defense in depth. And it kind of tried to
22 formulate defense in depth as something across the
23 agency.

24 And I thought we kind of took that out of
25 the more recent example because we got some comments

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1 about how are you doing to do defense in depth even, you
2 know, consistently across all regulated areas and are
3 these concepts all applicable?

4 And so, I thought that the current example
5 kind of downplays defense in depth and it just says we're
6 going to have to specify defense in depth. But, we
7 didn't get into the level of detail that the previous
8 one did.

9 MS. DROUIN: Well, the guidance we got from
10 senior management was to step back but not -- but only
11 step back right now to start at a higher level.

12 CHAIR STETKAR: Okay.

13 MS. DROUIN: And give a more higher level
14 visional aspirational type of statements. And that's
15 where we should start from.

16 CHAIR STETKAR: Okay, okay, good.

17 MS. DROUIN: So, it's not that every star
18 has been lost.

19 CHAIR STETKAR: We probably pushed you
20 that way, too.

21 MS. DROUIN: But it is let's start more
22 with this visionary aspirational type statements which
23 is what we've done.

24 CHAIR STETKAR: Okay. Good. And you're
25 right, that the current version of this does not spend

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1 as much energy discussing defense in depth, that
2 particular issue.

3 MS. DROUIN: That is correct.

4 CHAIR STETKAR: Thanks, that helps. That
5 helped me, thanks.

6 MS. DROUIN: Okay. So, you know, that
7 gets immediately into, you know, the third bullet which
8 we're viewing, you know, one of the biggest things is
9 that this policy statement would establish by policy.

10 You know, we had earlier discussions where,
11 you know, today, we have various aspects and elements
12 of a risk management of a regulatory framework. But we
13 really don't have a true risk management regulatory
14 framework and a policy statement.

15 Again, it states by policy, it's a major
16 tool for communicating to all our stakeholders, both
17 internal and external, this is the Commission's policy.

18 So, then given that, this is what, in trying
19 to capture this visionary aspirational type of policy
20 of what would constitute not in getting to the details,
21 but to, you know, tell our stakeholders that we have this
22 risk management regulatory framework. You know, what
23 does that mean?

24 And so, starting at the highest level, you
25 know, it would be applicable to all regulatory programs.

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1 It would be an approach to ensure adequate protection.
2 And in a risk management approach, safety and security,
3 you know, they're ensured by understanding the risk,
4 using that risk information, ensuring that defense in
5 depth is adequate.

6 So, it's not that we deleted defense in
7 depth, again, we're starting from these very high level
8 type of statements.

9 So, then going on to the next level, and
10 there are five elements to the risk management approach,
11 you know, what was used as structured process and these
12 are the things that you saw directly out of, you know,
13 2150.

14 It's things that we use today. You would
15 identify your issues. You identify options, et cetera.
16 We would ensure that we have appropriate regulatory
17 controls and oversight.

18 The risk management approach would employ
19 risk-informed decision making, you know, in which risk
20 insights are considered together with other factors.

21 So, these are not surprising statements
22 but, you know, we're now making these statements as part
23 of policy.

24 Slide number 20, and this is probably one
25 of the more significant statements is that it would

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1 recognize, you know, the difference of there's
2 different risk methods and tools, you know, that can be
3 used here, depending on the program area whether you're
4 dealing, you know, with reactor safety or you're dealing
5 with medical devices, et cetera.

6 And some of these, you know, they have to
7 be commissariat with how you're going to use it. And
8 so, the policy statement, you know, would, you know,
9 acknowledge that.

10 And the approach, you know, would consider
11 input from stakeholders and other interested parties
12 would be a major piece.

13 So, then the last --

14 CHAIR STETKAR: By the way, Members, make
15 sure you do turn your mics on when you -- because
16 everything we do say is on the record and the only way
17 we can pick it up is when you turn them on. But leave
18 them off normally.

19 MS. DROUIN: So, the next level, you know,
20 gets into the technical analyses to support the risk
21 management approach. And, you know, again, restating
22 by policy, it would be based on saying sound data,
23 information and methodologies including consideration
24 of uncertainties.

25 You know, it would use techniques or

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1 combinations that are appropriate for the hazard and the
2 complexity of the issue. It would be realistic as
3 practicable. You know, and it would promote and
4 utilize advances in science and technology as
5 practical.

6 And then, you know, again, bringing us
7 back, the risk management approach, when implemented,
8 would be tailored to the specific regulated activity as
9 appropriate.

10 So, you know, this is first coming back to
11 the Commission to give them an idea at a high level what
12 this policy statement would entail.

13 In implementing that, you know, we would
14 envision that there would be perhaps some implementing
15 policy statements. I mean there could be, for example,
16 a defense in depth policy statement implemented to
17 support this.

18 You know, the different program areas might
19 have implementing policy statements. Or, you know, it
20 may just go directly to regulatory guides or whatever.
21 But the main purpose of this policy statement, again,
22 is to just to state by policy, and I can't emphasize that
23 enough, that the NRC uses a risk management regulatory
24 approach.

25 CHAIR STETKAR: My only question when I

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1 listen to you is, I think there is a danger in issuing
2 numerous policy statements because we have examples of
3 policy statements that have been issued by the
4 Commission going back 20, 30, 40 years, 30 years anyway,
5 that kind of get lost.

6 And the more policy statements that you
7 issue, I think the less weight is assigned to them and
8 they do tend to get lost in the fuzz after a while. So,
9 when you say perhaps there might be several policy
10 statements issued, I'm not sure that necessarily a good
11 idea.

12 MS. DROUIN: Okay, when I say --

13 CHAIR STETKAR: That's my own opinion.

14 MS. DROUIN: Okay, when I say several, what
15 I mean is that in implementing such a policy statement,
16 you know, how materials would do it versus how reactors
17 would do it could be quite different.

18 And so, the materials arena may elect that,
19 you know, I need to get into a policy statement that is
20 strictly unique and associated only with materials.

21 MEMBER BLEY: I think I tend to lean toward
22 what John said and I would think those things, if you
23 have a really good high level policy statement, those
24 things could be almost implemented as guidance rather
25 than going --

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1 MS. DROUIN: Yes, they could.

2 MEMBER BLEY: You wouldn't need new policy
3 statements as long as this one's thorough and, you know,
4 global in its structure. And I think the things --

5 MS. DROUIN: I'm saying we just haven't
6 closed the door there.

7 And so, last, because this does not just
8 affect reactor safety, this is a global policy statement
9 for the agency, you know, we do have to -- oh sorry, I
10 skipped slide 22, I was going directly to 23.

11 In 22, again, if the Commission, you know,
12 does tell us to go forward, you know, we will follow the
13 normal process for doing a policy statement. You know,
14 we will have numerous interactions with the public. We
15 will have formal public review and comment period.

16 So, we're not going to do anything
17 different in how we would go forward in doing the policy
18 statement.

19 Then, in the last slide, because, again,
20 this is across the agency, we had to interact with the
21 Agreement States and we gave them a copy of the white
22 paper in advance. And the organization did provide us
23 with some comments.

24 They thought that the policy statement
25 would be a useful way. They couldn't endorse -- state

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1 or -- they couldn't state of endorse the concept that
2 there is a general understanding of the terms
3 risk-informed and defense in depth. And I'm not
4 surprised by that but these are, you know, issues that,
5 you know, are easily overcome.

6 Also, a risk management approach is already
7 being performed with our current regulatory system.
8 Good news.

9 And then they had a specific comment on some
10 of the words in there about the policy statement should
11 say to review current risk and practices and provide
12 recommendations for enhancement.

13 So, these, of course, would all be comments
14 that we would take into consideration and, of course,
15 we would be working with the organization as a policy
16 statement would be developed.

17 And so, that's all I had to say really on
18 the policy statement part.

19 MEMBER BLEY: Gong back to the
20 Organization of Agreement States comments, did this
21 come out of a public meeting or is this just something
22 they sent to you?

23 The reason I'm asking is I'd be interested
24 in the discussion. I would hope a fair number of the
25 individual states understand this very well and maybe

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1 the smaller ones maybe not so much.

2 And I wondered if you had a feel for that?

3 MS. DROUIN: Again, this came in via
4 writing.

5 MEMBER BLEY: It was a written comment?

6 MS. DROUIN: Yes.

7 MEMBER BLEY: Okay.

8 MS. DROUIN: They have certainly been
9 invited to the public meetings. And once again, if we
10 do move forward, whatever our process is to interact
11 with the Agreement States, I'm not the right person to
12 ask that. We will do what's necessary.

13 MEMBER BLEY: Okay. I mean I've run
14 across some of those. Some of them are pretty
15 sophisticated about this stuff and that some of those
16 statements really would surprise me. Others no.

17 And maybe it's the preponderance of them
18 who were the no.

19 MEMBER RYAN: The Organization of
20 Agreement States really kind of is a coalescence of all
21 the Agreement States. And they're very active and they
22 meet on a regular basis and they discuss these and
23 similar issues I think they're in agreement in some the
24 same meetings I've been to.

25 So, I think the sense of it, Dennis, is just

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1 right. They're very active in trying to understand
2 what regulations may be floating down their way and then
3 how they need to prepare for it or not prepare for it
4 based on that.

5 And the other part of it which you hit on,
6 too, is that Agreement States vary quite a bit in their
7 programs based on their individual activities. I mean
8 you'd see a lot different program for a metropolitan
9 hospital area than you would from an environmental mill
10 tailings pile. You know, so that's a broad range of
11 things to think about.

12 So, I second your view that, you know, just
13 making sure that you understand that range of activities
14 and, you know, do you cover it well and do you cover them
15 all the same? Or how do you get that done would be a
16 good thing to think about.

17 CHAIR STETKAR: I think Dennis's point
18 beforehand, if the policy statement, again, policy
19 statement's pretty high level, if that's crafted very
20 carefully to elaborate the agency's, the Commission's
21 policy, then many of the details about how that policy
22 implemented, whether it's a mill tailings issue or
23 medical isotopes or whatever, you know, is worked
24 through in terms of specific guidance for particular
25 applications.

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1 You don't necessarily have to put in a
2 policy statement, you know, all of that detail.

3 MEMBER RYAN: That was my point, you don't
4 have to parse it out into little bits. You can kind of
5 have it --

6 MS. DROUIN: And that's our aim and that's
7 what, you know, we're trying to do here and when we craft
8 it, what we have here, that was -- it wasn't just the
9 reactor people looking at it, it was all the program
10 areas had input to what you're seeing now.

11 And we all of us felt it was high enough
12 level that it could be implemented by any of the program
13 areas at the agency.

14 That's all I have.

15 CHAIR STETKAR: As always, interpret 30
16 seconds of silence or less as move on.

17 MR. DUDLEY: I just have a few slides left
18 in the staff's presentation.

19 We held a public meeting on RMRF on May
20 27th. We had about 40 total people, 26 in person and
21 14 in the webinar to participate.

22 There were a number -- I'm going to give you
23 -- summarize some comments made by NEI. But NEI is
24 here, maybe they'd rather tell you themselves.

25 But NEI at that meeting, as Joe has already

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1 told you, was concerned about the lack of implementation
2 details on Option 2. And without those details, it's
3 really hard for them to know what safety benefits and
4 costs would be associated with Option 2.

5 And at that meeting, they also suggested
6 that we not present our recommendations to the
7 Commission without having more details on the how Option
8 2 processes would work.

9 NEI also stated that they didn't think
10 Option 3 should be implemented at existing operating
11 reactors.

12 And regarding the agency wide policy
13 statement, NEI said that they didn't believe that the
14 development of the policy statement appeared to be an
15 efficient use of existing resources.

16 We also -- pardon me?

17 MEMBER BLEY: Is there more to that
18 statement?

19 CHAIR STETKAR: NEI will be up.

20 MR. DUDLEY: Mike Tschiltz is nodding his
21 head, I'll let him.

22 MEMBER BLEY: That'll be good.

23 MR. DUDLEY: I'll let him provide that to
24 you.

25 Let's see, okay, so the -- also the Union

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1 of Concerned Scientists had some comments and Dr. Lyman
2 who represented them was concerned that he didn't want
3 Option 2 to be pursued because he thought it would result
4 in inconsistent requirements being applied to
5 individual plants across the country.

6 And to him, this would exacerbate the
7 patchwork of different requirements that he believes
8 NTTF Recommendation 1 was supposed to eliminate. He
9 thinks that Option 2 would make it worse.

10 He also suggested that clear and consistent
11 requirements could be applied across the industry by a
12 new effort to kind of reevaluate the Independent
13 Planning Examinations, the IPEs and the IPEEEs, but on
14 a consistent and disciplined basis across the industry.

15 So, those were his comments.

16 MS. DROUIN: Can I just -- I would like to
17 add a clarification.

18 We did have other comments by other
19 individuals and I don't want people to think that the
20 other individuals who made comments that, you know, we
21 did not hear their comments or not take their comments
22 in consideration, we certainly will.

23 These were the more significant ones in
24 terms of really affecting, you know, what we needed to
25 go back and look at.

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1 CHAIR STETKAR: Well, at least as I
2 understand it from this final slide, at least the
3 comments you received orally at that public meeting?

4 MR. DUDLEY: Yes, I mean --

5 CHAIR STETKAR: You're still three days
6 away.

7 MR. DUDLEY: Right, right. Hopefully,
8 they're resubmitted in writing. But, so, the 30-day
9 public comment period that we Noticed in the Federal
10 Register will expire on June 11th. We will then review
11 thoroughly all the public comments.

12 We'll meet with this subcommittee in
13 October and I believe now the full committee meeting is
14 in November. We will get a letter from this committee
15 and our plan is to provide the RMRF SECY paper to the
16 Commission by December 2015.

17 Now, Joe Giitter mentioned today that we
18 might have another public meeting. So, that's not
19 really factored into these slides and I don't know
20 whether that will affect our schedule or not or whether
21 we will actually get approval to have another public
22 meeting.

23 But that, I guess that completes the
24 staff's presentation.

25 CHAIR STETKAR: Great. And miraculously,

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1 we're back on schedule.

2 Are there any other comments or questions
3 for the staff?

4 If not, thank you and I know this --
5 honestly, this presentation helped me an awful lot for
6 questions that I had reading through the paper. It was
7 very useful. I learned quite a bit from it. So, thank
8 you.

9 If there are no other questions or comments
10 for the staff, we'll have NEI come up and let Mike --

11 Let's recess for five minutes-ish. That's
12 an appropriately vague period of time.

13 (Whereupon, the above-entitled matter went
14 off the record at 3:55 p.m. and resumed at 3:58 p.m.)

15 CHAIR STETKAR: We are back in session.

16 We're going to hear from NEI. Mike?

17 MR. TSCHILTZ: Okay, thank you.

18 My name is Mike Tschiltz. I'm the Director
19 Risk Assessment at NEI and I coordinated the industry's
20 comments on the paper, so I'll go over what our issues
21 are.

22 We basically tried to cover all of the
23 issues that were discussed in the white paper.

24 So, first of all, Option 1 for maintaining
25 the current framework. At this point in time, I think

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1 it's the industry's preferred option based upon the
2 current available NRC information.

3 We think that there can be benefit to
4 enhancing the guidance for determining the adequacy of
5 defense in depth in the integrated decision making
6 process. That's something that I think Doug True
7 talked the ACRS about not too long ago about Working
8 Group 2's efforts and we think this fits in well with
9 that to deal with defense depth, uncertainty and
10 aggregation.

11 We think that there could be benefit to
12 streamlining the current approval processes for risk
13 and formalize this amendment request.

14 And we don't believe that there's any
15 additional work needed in this area for development of
16 the design basis extension category. We agree with the
17 staff's recommendation on that point.

18 For Option 2, the risk-informed
19 alternative licensing basis, I think that there was
20 initial interest in this as being an option for
21 operating plants.

22 But, based upon the current information,
23 people are unwilling to say that they would pursue this.

24 I guess it could be a preferred option for
25 some new plants where a full scope PRA is already

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1 required. But we found that the white paper lacks
2 sufficient detail concerning the scope and process for
3 how Option 2 would be implemented.

4 MEMBER BLEY: Can I interrupt you on that?

5 MR. TSCHILTZ: Certainly.

6 MEMBER BLEY: I'd be interested in
7 learning a little more. I mean we certainly have raised
8 issues with the detail in Option 2. But, you know,
9 under the different ways it could come out, are there
10 -- do you have any hint about, you know, are there one,
11 two, a few utilities, a fair number, who might be
12 interested in that if they better understand it?

13 MR. TSCHILTZ: Well, I don't really have a
14 good feel for that. I would say that the utilities that
15 are more risk-informed and are pursuing the
16 risk-informed applications at this point would be more
17 likely to be inclined to accept this approach.

18 So, I would judge my response based upon
19 those groups of utilities that are doing that. So, I
20 don't think it's widespread.

21 That being said, I think there is -- we are
22 seeing some resurgence in interest in risk-informed
23 applications for Tech Spec 4(b) Initiative for 50.69.
24 And I think that's because some of the pieces are in
25 place now for the portions of the PRA that is necessary

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1 to perform those applications and people are trying to
2 get the full benefit of the effort that's been put into
3 developing the different parts of the PRA to support
4 those applications.

5 MEMBER BLEY: Okay. I guess I'm not
6 trying to paint you into a corner at all, I'm just
7 curious because I never know quite what it means as
8 spokesman for the industry when you give us results sort
9 of like these and how broad the base is for the comments.

10 Is it the licensees send you comments and
11 then you kind of coalesce them or are there meetings --

12 MR. TSCHILTZ: So, for this --

13 MEMBER BLEY: -- that lead to this?

14 MR. TSCHILTZ: For this specific activity,
15 we had a rather short time frame to establish our working
16 group. There was a public meeting on May 27th and now
17 this meeting and the comments are due on June 11th. So,
18 we really don't have the opportunity to put together a
19 large group.

20 I solicited representatives from the PWR
21 and BWR Owners Groups to provide comments as well as
22 several other well recognized people in the risk
23 community that could provide meaningful insights about
24 the white paper.

25 So, it was a relatively small task force

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1 that was put together to develop these comments.

2 MEMBER BLEY: Okay.

3 MEMBER REMPE: But to go back to what's on
4 the slides --

5 CHAIR STETKAR: Joy, Joy, turn your mic on.

6 MEMBER REMPE: What's on the slide says not
7 preferred option at this point for the operating plants.

8 And what Dennis asked was a bit different
9 and your response implied, well, maybe someone might be
10 interested. Did any of the folks you talked to say, oh,
11 I might be interested or did they just say not preferred
12 option?

13 MR. TSCHILTZ: No, at this point, with the
14 level of detail that's in the white paper, no one could
15 go back and make the case to their management that they
16 would want to pursue this because it's not defined in
17 enough detail for people to understand.

18 I think Dick covered in his summary of ANI
19 comments at the public meeting that it wasn't in enough
20 detail so someone could make a safety or a safety benefit
21 or a cost estimate of what pursuing this option would
22 involve.

23 You know, I think the ACRS was on to one of
24 the other issues concerning the vulnerabilities
25 assessment. You know, if you pursued an Option 2 in the

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1 very limited scope, would it then open up a full scope
2 review of everything covered under the PRA for a
3 vulnerabilities assessment when your risk application
4 would be very, very small focused effort.

5 That's the way it's --

6 MEMBER BROWN: That's the way it seemed to
7 read, the white paper.

8 MR. TSCHILTZ: Yes, sir.

9 MEMBER BROWN: That's why I asked the
10 question.

11 MR. TSCHILTZ: So, there would be benefit
12 to more discussion in the white paper on that issue how
13 that would be covered. Because, clearly, that would be
14 something that people would be concerned about.

15 MEMBER BLEY: Are you going to get to what
16 it would take to make this more attractive or is this
17 about what you have to say about it?

18 MR. TSCHILTZ: Yes, I don't think that we
19 would be at the point where we tried to define how we
20 think it should work.

21 I'll note that, you know, when looking at
22 Option 1 versus Option 2, it's hard to imagine that the
23 staff would do things significantly different in
24 reviewing a risk-informed application under Option 2
25 than they would for Option 1.

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1 And that being that they would need to be
2 the applicable industry guidance, the endorsing NRC
3 guidance and this takes a number of years and a lot of
4 effort to usually develop those for the risk-informed
5 applications.

6 And then the level of review that the staff
7 would be conducting for those type of applications would
8 also be very important as to whether people would want
9 to pursue them.

10 NFPA-805, I hate to use it as an example for
11 any of the risk-informed applications, but there's a
12 detailed review. You know, I think industry's
13 expectation is that if you have a PRA that meets the
14 standard and has N-1.200 and it's been peer reviewed and
15 the F&Os are addressed, then you should be able to use
16 that without a detailed NRC review of the PRA.

17 So, there's a lot of undefined details here
18 that really make a difference I think and as to whether
19 this would be something that people would want to
20 pursue.

21 And clearly, it's a voluntary initiative,
22 so if the NRC was going to put the effort into developing
23 all these details, we think it's very important that
24 they work closely with the industry so it would be
25 ultimately come out with a product that the industry

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1 would voluntarily adopt as opposed to something they
2 said, well, this is developed kind of in isolation by
3 the NRC.

4 And, not to criticize the staff here,
5 they're trying to meet a deadline. That deadline seems
6 to preclude a lot of detailed interactions with the
7 industry on what should be in the SECY paper, what the
8 options should be, what the detail associated with those
9 options are.

10 So, I think that's it on Option 2.

11 For Option 3, I think it's clearly not a
12 preferred option. I mean the way the white paper's
13 scoped, it's for the existing fleet of plants, operating
14 plants.

15 So, and in the white paper, it's
16 characterized as taking longer than ten years to adopt
17 this approach.

18 And, I think the things that are making it
19 unappealing are the regulatory uncertainty associated
20 with this approach. You're basically having to rewrite
21 or redefine what's in your FSAR using a risk-informed
22 approach.

23 And the cost benefit, again, is unclear.
24 If you were going to undertake the effort to do all fo
25 that which would be very significant amount of time and

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1 resources, you would want to have the cost benefit
2 better defined.

3 CHAIR STETKAR: Mike, I -- this says, well,
4 don't adopt Option 3 because it's going to take a long
5 time to put that in place.

6 What about new reactors coming down the
7 line that probably won't be operating in ten years from
8 now?

9 MR. TSCHILTZ: So --

10 CHAIR STETKAR: Would this type of
11 framework be useful for them? Because you have to put
12 the framework in place beforehand so that people
13 understand what regulatory framework they're going to
14 be licensed under.

15 MR. TSCHILTZ: Right. So, we asked that
16 question, I think. So, it would be the group of
17 reactors beyond the SMRs I think that we would be talking
18 about as this being a viable option for it. At least
19 that's the feedback that I got from the new reactor group
20 at NEI who did pulse the industry to figure out where
21 people would be.

22 I think one of the things with the SMR is
23 the short review time that's scheduled with the design
24 certification. So, people, I don't think, want to tie
25 anything associated with that up with this process.

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1 But the in the generation beyond that, I
2 think there is some interest in pursuing that. As to
3 whether it needs to be considered in the context of the
4 RMRF or whether it's a rulemaking support that design
5 review for that certification, that's a different
6 issue.

7 But, I think that there is some interest in
8 pursuing that for that generation of new reactors.

9 CHAIR STETKAR: Okay, thanks.

10 MR. TSCHILTZ: So, the regulatory process
11 issues, I think I covered a little bit, Option 2 being
12 a voluntary initiative and the importance of industry
13 involvement in this.

14 Option 3, I think Dick Dudley alluded to
15 this a little bit in his discussion that there doesn't
16 seem to be a clear basis for making Option 3 a
17 requirement.

18 I for the staff to be able to do that, they'd
19 have to make the case that the existing regulations
20 didn't provide adequate protection for the fleet and I
21 think that would be a difficult case to make. So, I
22 don't think making it a requirement is supported.

23 So, the staff's plans for issuance of a
24 Commission paper, we had the public meeting on May 27th.
25 We provided some feedback there. The industry will

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1 also provide written comments by the June 11th deadline.

2 But, our understanding was the next
3 opportunity for any industry insights into what was
4 happening with the SECY paper was when the draft SECY
5 paper is made available for the ACRS prior to the
6 November meeting.

7 So, there was not going to be any other
8 opportunity for the industry to weigh in to determine
9 what, you know, where the staff was heading with these
10 options. So, clearly, voting for any other or
11 advocating any option other than Option 1 at this point
12 in time would not be a prudent move for us.

13 There were a couple of other issues that
14 were kind of bundled into the Federal Register Notice.
15 One of these things, I know that this is an issue that
16 I think the ACRS asked about previously.

17 I know it was brought up in the context of
18 the subsequent license renewal, SECY paper and Dan
19 Dorman's disposition of Joe Giitter's nonconcurrence in
20 the paper mentioned that this may be something that
21 could be considered in the risk management regulatory
22 framework paper and that is whether this risk-informed
23 alternative should be required for any plant that's
24 pursuing subsequent license renewal beyond 60 years.

25 And when we look at this, we basically

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1 determined that we don't think that this option has any
2 direct connection to extending plant life and it's not
3 uniquely relevant to plant life. The PRA doesn't
4 provide any greater insights on years 61 through 80 than
5 it does 1 through 60.

6 The existing regulatory processes for
7 license renewal assessed and managed plant aging and
8 making this a requirement would effectively bypass the
9 NRC process for establishing the requirements.

10 And I realize this would be supposedly
11 subsequent license renewals, not a requirement so you
12 could finesse that into not being a back-fit. But I
13 would say that NRC process would, in most cases, require
14 them to consider the benefit of doing this.

15 For the design basis extension, we agree
16 with the staff's assessment and recommendation. We
17 don't think that this is necessary for Options 1 and 2
18 and Option 3 is TBD in the future if anybody would be
19 adopting, we think Option 3, at this point, is a
20 non-viable option except potentially for that next
21 generation of plants that's out there.

22 So, for defense in depth, I think we agree
23 that -- and support the revision of guidance documents
24 to ensure consistent application of defense in depth in
25 regulatory decision making. And I think we believe

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1 that fits in well with the efforts we have underway with
2 the Risk-Informed Steering Committee Working Group 2
3 that's been addressing uncertainty and is going through
4 the risk-informed decision making process to deal with
5 this issue along with aggregation is the right place to
6 deal with it.

7 We do believe that industry should be
8 involved in these and have interactions on the
9 development of the increased or improved guidance on
10 defense in depth. But we don't see a direct benefit
11 from the development of a defense in depth policy
12 statement.

13 I think defense in depth is fairly well
14 understood at a high level. Where the challenges are
15 is in implementing and in a consistent way. So, the
16 detailed guidance, I think, is where we think could be
17 where there's the most benefit to gain from this.

18 CHAIR STETKAR: Mike, on the first issue
19 there, the design basis extension or whatever you want
20 to call it, if indeed Option 2 were palatable to the
21 industry, is there a fundamental disagreement with the
22 notion that there could be two different categories of
23 event s that are regulated differently?

24 In other words, do the design basis events
25 that have tech specs and things like that and, we'll call

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1 it a second tier of events that are still subject to some
2 level of oversight, not defined right at the moment?

3 MR. TSCHILTZ: No, I think conceptually, I
4 don't think there is. I think we are headed in that
5 direction right now with mitigating strategies where
6 there is --

7 CHAIR STETKAR: Yes, there is direction.

8 MR. TSCHILTZ: So, the mitigating
9 strategies rulemaking actually would implement
10 something effectively that.

11 CHAIR STETKAR: Into that?

12 MR. TSCHILTZ: Or the same as that.

13 CHAIR STETKAR: As I've said, in the
14 current -- some of the new reactor designs, the RTNSS,
15 you know, category is akin to that. Not necessarily for
16 design basis events but certainly structure systems and
17 components.

18 MR. TSCHILTZ: Okay.

19 CHAIR STETKAR: I just wanted to find out
20 whether that it was something more fundamental up at
21 that time. Thanks.

22 MR. TSCHILTZ: Okay. So, I think the
23 example policy statement, the observation, our
24 observation is written at a very high level. I guess
25 policy statements are.

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1 In our public meeting discussions with the
2 staff, I think you heard very similar things to what we
3 heard about this would potentially cascade down into
4 other policy statements written by other -- some of the
5 other program offices.

6 So, it seemed to be a significant effort and
7 just an observation that overall, is that policy
8 statements do require a significant amount of staff
9 resources, and especially this one since it would
10 cascade over into different offices. It involves
11 interacting with agreement states and could take years
12 to develop.

13 So, looking at it from a cumulative effects
14 type of perspective, the benefit associated with the
15 dedication expenditure of all those resources for this
16 policy statement, at this point in time, I think is
17 questionable from our perspective.

18 MEMBER BLEY: This one surprised me when
19 the staff read it to me and when you put your slide up.
20 Now that you've talked, I see you focused on this idea
21 that perhaps there could multiple layers of policy
22 statements and all of that.

23 And I would agree with you, that could get
24 out of hand and might not be helpful.

25 But, given the letter NEI wrote to the

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1 Commissioners not too long ago, that NRC maybe has lost
2 its way in dealing with these risk-informed issues.

3 It kind of surprises me that you wouldn't
4 be in favor of the high level policy statement to say
5 this Commission is really on board and you and the staff
6 ought not be, you know, trying to out guess us and decide
7 we don't look in this direction any more.

8 I'll leave it at that, but it did catch me
9 by surprise.

10 MR. TSCHILTZ: I think our response would
11 be that the issues that we're experiencing really aren't
12 going to be fixed by a policy statement. I think we
13 believe that the existing PRA policy statement has stood
14 us in good stead and this isn't going to provide a lot
15 of additional insights or value beyond what the existing
16 policy statement has for existing reactors.

17 And the other thing, and I don't know how
18 closely this policy side statement would be tied to a
19 risk management regulatory framework, but it doesn't
20 appear that there's any impetus or initiative for this
21 to carry over in the near-term to the other program
22 offices.

23 Because the way it's written right now, is
24 we'll try it out with, at least my understanding is,
25 we'll try it out for the existing fleet of operating

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1 reactors and then, based upon those experiences, this
2 will cascade potentially over to the other program
3 offices so they can adopt this kind of approach.

4 Using that, we have plenty of time to
5 determine whether or not it's a good point or we should
6 adopt a new policy statement that would back up this type
7 of approach.

8 The other thing, it seems to me kind of
9 almost misleading to come up with a policy statement
10 that talks about a risk management regulatory framework
11 when you really don't have any plans to implement one.
12 So, just an observation.

13 So, the recommendations were to maintain
14 the current framework, Option 1, for operating plants
15 and then implement improvements in the Reg Guide 1174
16 for defense in depth. That's what our recommendations
17 would be for proceeding at this point.

18 CHAIR STETKAR: Great. Any further
19 questions or comments for Mike? Joy?

20 MEMBER REMPE: Yes. In light of this last
21 slide, why don't you give it stronger in stronger in your
22 comments on Option 2 and say, instead of saying there's
23 not enough details, say as long as it's voluntary, we
24 don't have anyone interested and you don't need to
25 pursue this anymore instead of leaving the door open

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1 that they should -- the staff should be trying to flesh
2 out more details with Option 2?

3 MR. TSCHILTZ: That's a good question. I
4 think there is some looking back over the history of how
5 this has evolved over the past couple of years, I think
6 initially people were interested in Option 2 and thought
7 Option 2 would be a benefit.

8 But, for the process that's been laid out
9 for us so far, which I explained involved the white
10 paper, the public meeting, the June 11th public comment
11 with no staff response to the comment, the next
12 opportunity for any insight into where the staff was
13 heading on this would be the availability of a draft SECY
14 paper going to the Commission in November and really no
15 opportunity for the industry to engage unless they
16 wanted to write a letter to the Commission at that point
17 on the draft SECY paper.

18 There's really no opportunity for us to
19 engage in the process and I think if the staff were to
20 change that, I think you would have maybe a different
21 recommendation there.

22 But at this point, we don't see any option
23 for us to influence or make sure that this option would
24 be something that someone would want to pursue. And
25 absent that, I think it's a waste of resources for the

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1 staff to pursue that option.

2 I think that's why it's written the way it
3 is.

4 MEMBER REMPE: Okay. Thank you.

5 MR. TSCHILTZ: Any other questions?

6 CHAIR STETKAR: Anything else for Mike?

7 If not, thank you very much. That's pretty
8 clear. I'm assuming there'll be a lot more elaboration
9 in NEI's written comments. So, we'll be interested in
10 seeing those.

11 We can open the bridgelines.

12 While we're getting the bridgelines open
13 for comments, I'll ask if there is anyone in the room
14 who'd like to make any comments? If so, come up to the
15 mic and identify yourself.

16 Apparently not.

17 Ah, there's some noise in the speakers
18 here, so, again, I'll invoke our high tech way of
19 confirming the bridgeline is open, if someone is out
20 there, please just say hello so we can confirm that the
21 bridgeline is open. Anyone?

22 UNKNOWN PARTICIPANT: Open.

23 CHAIR STETKAR: Thank you.

24 Now, if there's anyone out there who would
25 like to make a comment, please identify yourself and do

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1 so.

2 MR. HOFFMAN: Ace Hoffman.

3 CHAIR STETKAR: Great. Mr. Hoffman,
4 you'd like to make a comment?

5 MR. HOFFMAN: Yes. If I understand it
6 correctly when you were talking to some of the
7 deterministic regulations and move to probabilistic
8 regulations, do we no longer think that missiles are
9 likely to be blown in the tornado over the fence, bounce
10 off the control room diagonally into the pipe and then
11 cause a guillotine break.

12 But, on the other hand, there are
13 thousands, tens of thousands of specific events that
14 might happen.

15 So, if we're going to be starting to
16 eliminate the ones that somebody decides are obviously
17 not going to happen, let's make sure that we add in the
18 ones that have been recognized as obvious that were
19 probably not seen 20 years go, ISIS, for example, or al
20 Qaeda or Stuxnet or big parts inside of computer
21 machinery or inside of any kind of machinery within a
22 normal problem part, but endless wars going on and the
23 guided missiles that no one could have dreamed of. The
24 civil disturbances we've been detecting even in
25 Baltimore, the laser weapons, the electromagnetic

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1 pulses from the sun. There's electromagnetic pulse
2 weapons. There's drones, there's jumbo jets being used
3 as weapons.

4 These are all probably beyond design basis
5 accidents. So, I think we need to make sure that we're
6 including all the things we realize, even large
7 earthquakes and tsunamis, and then go ahead and take
8 Edsels out, I don't know.

9 Thank you very much.

10 CHAIR STETKAR: Thank you, Mr. Hoffman. I
11 appreciate those comments.

12 Is there anyone else out on the bridgeline
13 who'd like to make a comment?

14 I heard some beeping, I just want to make
15 sure that nobody's trying to say something. Is there
16 anyone else who'd like to make a comment?

17 If not, we will reclose the bridgeline and
18 I thank the public for your comments.

19 As usual, as summing up a subcommittee
20 meeting, I like to go around the table and see if any
21 of the Members have any closing comments that they'd
22 like to make and I'll start with Dick.

23 Dr. Powers?

24 MEMBER POWERS: I'm wondering if we're not
25 seeing some of the limitations on risk assessment

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1 because earlier today, we had the subcommittee meeting
2 in which we were looking at risk assessments to where
3 there no risks.

4 And so risk assessment became kind of a
5 useless tool for the regulatory framework. And here,
6 we see an imposition of a risk assessment that elicits
7 no interest because it's hard to understand the
8 benefits.

9 I wonder if we're not seeing some of the
10 limitations of risk in the regulatory process here?

11 My only comment.

12 CHAIR STETKAR: Thank you.

13 Dr. Bley?

14 MEMBER BLEY: Every time I think I've
15 figured out where this is heading, we have a new meeting
16 and a new document and I say, oh, that's a little new
17 direction.

18 I appreciate today's meeting. It
19 clarified many things. We heard a few more things to
20 think about and I appreciate all the presentations and
21 discussions and comments from other people as well.

22 CHAIR STETKAR: Mike?

23 MEMBER RYAN: Dennis already, sir?

24 CHAIR STETKAR: No.

25 MEMBER RYAN: I'd thought Dennis's

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1 summation was quite good. I agree with the views on the
2 presentations. I think were very helpful for me to
3 understand what people are thinking about and what they
4 were thinking about moving forward.

5 So, I think those two points in particular
6 were worthwhile to me and I hope will be worthwhile for
7 us as a group to hear what they've got to say and maybe
8 probe those kind of forward looking activities that
9 they're engaged in from this point forward.

10 Thank you.

11 CHAIR STETKAR: Thank you.

12 Ron?

13 MEMBER BALLINGER: Northing more.

14 CHAIR STETKAR: Charlie? If you're going
15 to say something, turn your mic on.

16 MEMBER BROWN: I made my comments, the two
17 specific items I wanted to cover. I don't need to
18 reiterate.

19 CHAIR STETKAR: Okay. Joy?

20 MEMBER REMPE: I just wanted to reiterate
21 my thanks to everyone on their presentations and it was
22 helpful. And I'll look forward to when it comes back
23 to us again in October.

24 CHAIR STETKAR: Great. Thank you.

25 And I, too, thanks a lot to the staff for

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1 summing things up. As I said, it helped me an awful lot
2 to sort out some of the information that's in the white
3 paper.

4 Joe's not here anymore, but thanks to Joe.
5 Joe? You're here? Oh.

6 MR. GIITTER: I'm hiding back here.

7 CHAIR STETKAR: Joe's hiding. Thanks to
8 you also for your insights.

9 It sounds like this is, as Dennis said, is
10 evolving. I think from what we heard from the staff and
11 what we just heard from NEI that the next couple of
12 months are a pretty important time in this process and
13 I hope that the staff, you know, considers whatever
14 comments come in seriously, considers what you heard
15 today from NEI pretty seriously and that we don't
16 necessarily get caught up in something that's purely
17 paper schedule driven --

18 MR. GIITTER: And I completely agree.

19 CHAIR STETKAR: -- and miss some
20 opportunities.

21 So, I'll just end my comments that way.

22 MR. GIITTER: I completely agree.

23 CHAIR STETKAR: Thank you.

24 And with that, if there's nothing else, we
25 are adjourned.

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1 (Whereupon, the above-entitled matter went
2 off the record at 4:30 p.m.)
3
4
5
6
7



Staff Recommendations Regarding a Risk Management Regulatory Framework

ACRS Subcommittee Meeting

June 8, 2015

Outline of NRC Staff Presentation on Risk Management Regulatory Framework (RMRF)

- Background
- Discussion of Staff White Paper
 - Implementation Options for Power Reactors
 - Re-evaluation of Improvement Activities 1 and 2
 - Example of potential agency-wide policy statement
- Summary of May 27, 2015 public meeting
- Next Steps

Background

- NRC staff is working to provide the Commission with three related items for their consideration:
 - Evaluation of options for enhancing the risk management approach used to ensure nuclear power reactor safety
 - Reevaluations of two power reactor safety “improvement activities” from Fukushima Near Term Task Force Recommendation 1 that the Commission deferred
 - Possible development of an over-arching, agency-wide policy statement using the risk management approach to ensure safety and security
- White paper (ML15107A402) released on May 6, 2015
- *Federal Register* notice (80 FR 27191) published on May 12, 2015
 - www.regulations.gov Docket ID NRC-2013-0254
 - Comment period ends June 11, 2015

Discussion of Staff White Paper

- White Paper discusses three related items:
 1. Evaluation of options for enhancing the risk management approach used to ensure nuclear power reactor safety (Section I)
 2. Reevaluation of two power reactor safety “improvement activities” from Fukushima Near Term Task Force Recommendation 1 that the Commission deferred (Section II)
 3. Possible development of an over-arching, agency-wide policy statement using the risk management approach to ensure safety and security, including an example of what such a policy statement might include (Section III)

Section I: Options for Enhancing the Risk Management Approach for Nuclear Power Reactor Safety

Staff's evaluation determined that

- Safety Goals for the Operation of Nuclear Power Plants (51 FR 30028),
- Existing Probabilistic Risk Assessment (PRA) Policy Statement (60 FR 42622),
- Extensive experience with risk-informed regulation and risk-informed decision-making

... have already established a de-facto RMRF.

- Section I evaluates 3 power reactor implementation options to increase use of risk information
 - Option 1 – Maintain Current Framework
 - Option 2 – Establish a Risk-Informed Alternative Licensing Basis
 - Option 3 – Establish a Plant Specific Risk Management Regulatory Framework

Power Reactor Option 1 – Maintain Current Framework

- No extensive revision of NRC's regulatory framework
- The current power reactor regulatory framework meets the RMRF criteria in NUREG-2150
 1. Mission – Public health and safety; common defense and security; protect the environment
 2. Objective – Manage the risks via current regulations, guidance, and oversight (including defense-in-depth, safety margins, single failure criterion, fail-safe design, reactor oversight program, etc.)
 3. Goal – Provide sufficient risk-informed and performance-based protections to ensure risks are acceptably low (utilizing Commission's Safety Goal Policy Statement and subsidiary risk metrics)
 4. Decisionmaking Process that includes monitoring and feedback (e.g., LIC-504, "Integrated Risk-Informed Decision-Making Process for Emergent Issues;" Regulatory Guide 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis;" Generic Issues Program; Operating Experience Program; Accident Sequence Precursor Program; Industry Trends Program, etc.)
- Not a "do nothing" option -- staff would continue to make safety improvements (based on risk insights or other considerations) whenever necessary using existing regulatory processes
 - Fukushima Near-Term Task Force Recommendation 1 Improvement Activities 1 and 2 enhancements

Power Reactor Option 2 – Risk-Informed Alternative Licensing Basis

- Maintain existing generic regulatory structure
- Issue rule allowing licensees who upgrade PRAs to apply for approval of a risk-informed alternative licensing basis for certain deterministic regulations of low safety benefit for that plant
 - Licensees allowed to select a plant-specific set of design changes/compliance issues of low risk-significance that would deviate from current deterministic requirements **and** must search for and mitigate all plant-specific risk vulnerabilities meeting NRC-specified criteria
 - New information on mitigation of risk-significant events and/or accident sequences (risk vulnerabilities) must be documented in the plant's updated Final Safety Analysis Report in accordance with 10 CFR 50.71 (e) requirements
 - Mandatory monitoring and feedback (as described in RG 1.174) to ensure changes in risk remain acceptable throughout the lifetime of the facility
 - Staff requested public comments on potentially requiring licensees requesting subsequent license renewals (exceeding 60 years) to perform PRAs and look for and address risk vulnerabilities

Power Reactor Option 2 – Risk-Informed Alternative Licensing Basis (continued)

Implementation:

- NRC approval of license amendment would authorize use of alternative approach
- Plant licensees are expected to have high quality PRAs to support this risk-informed alternative licensing basis approach
- Regulatory process for licensees to self-approve certain plant-specific changes would likely be similar to NFPA-805 approval process, i.e., risk-informed changes allowed to license requirements without prior NRC approval if risk increase (Δ CDF) is “no more than minimal” (e.g., $< 1\text{E-}7/\text{year}$)
- Facility changes with risk increases “more than minimal” (e.g., $> 1\text{E-}7/\text{year}$) require NRC approval

Power Reactor Option 2 – Risk-Informed Alternative Licensing Basis (continued)

Implementation uncertainties:

- Staff has not developed implementation details for this approach
- Staff intends to review all power reactor regulations and develop list of rules amenable to risk-informing under Option 2
- Other implementation uncertainties include:
 - Minimum scope/technical accuracy of upgraded PRA for entry into the alternative approach
 - Certification/review of PRA?
 - Selection and scope of permissible design changes
 - Process for staff review of design changes
 - Reporting and documentation requirements
 - Ensure transparency (NRC and public) of processes

Power Reactor Option 3 – Plant-Specific RMRF from NUREG-2150

- Issue regulation requiring PRAs and that licensees establish plant-specific licensing basis based on:
 - Plant-specific risk profiles
 - NRC-specified risk management objective
 - Enhanced criteria for determining adequacy of non-risk factors (defense-in-depth, safety margins, etc.)
- Based on the risk profile, licensees would implement the plant-specific licensing basis by:
 - Determining how the risk objective is met
 - Ensuring that the necessary protections are in place to meet the risk management goal
 - Demonstrating the adequacy of non-risk factors (defense-in-depth, safety margins, etc.)
 - Establishing the risk-informed decision-making process
 - Establishing the monitoring/feedback and reporting process

Power Reactor Option 3 – Plant-Specific RMRF from NUREG-2150 (continued)

- Each plant's licensing basis would consist of:
 - "Technical requirements" based upon plant-specific attributes and applicant-selected design specific elements/constraints
 - Rationales (technical bases) why the technical requirements adequately address risk and defense-in-depth in light of the plant-specific attributes and design specific elements/constraints
 - FSAR-level description of the plant-specific attributes and applicant-selected design specific elements/constraints that are the inputs/assumptions for the above rationales (technical bases) which must be maintained
 - Process for maintaining the validity of the rationales (technical bases) throughout the operating lifetime of the facility.
- Structured, risk-informed decision-making process used by both NRC and licensees
- Licensees would be required to use the structured process with monitoring and feedback to ensure that the plant-specific licensing basis remains consistent with the risk profile of the plant, which could change over time.



Questions?

Section II: Reevaluation of Power Reactor Improvement Activities

- Recommendation 1 was to establish a “logical, systematic, and coherent regulatory framework for adequate protection that appropriately balances defense-in-depth and risk considerations.”
- The NRC staff provided its evaluation of Recommendation 1 on December 6, 2013, in SECY-13-0132
- SECY-13-0132 recommended 3 regulatory framework improvement activities
 1. Establish new design-basis extension category **and** ensure that design-basis extension rules address all regulatory attributes (performance goals, treatment requirements, documentation requirements, change processes, and reporting requirements)
 2. Establish Commission expectations for defense-in-depth (definition and criteria for adequacy)
 3. Clarify the role of voluntary initiatives
- Commission’s May 19, 2014 SRM on SECY-13-0132
 - Directed the staff to evaluate the implementation status of certain safety-significant voluntary initiatives (Improvement Activity 3)
 - Directed staff to reevaluate objectives of Improvement Activity 1 (new design-basis extension category) and Improvement Activity 2 (adequacy of defense-in-depth) within context of Commission direction on the Risk Management Regulatory Framework
- Staff will provide its reevaluations of Improvement Activities 1 & 2 in RMRF SECY paper

Reevaluation of Improvement Activity 1: Establish Design-Basis Extension Category

- Staff now believes creating new design-basis extension category is not necessary
- For Option 1 (maintain existing framework) and Option 2 (risk-informed alternative licensing basis)
 - Staff would develop clear internal rulemaking guidance to ensure consistent criteria for specifying performance goals, treatment requirements, documentation requirements, change processes, and reporting requirements whenever new regulations (especially beyond design-basis) are developed
 - Develop guidance using existing resources (routine, periodic guidance updates)
 - Developing internal rulemaking guidance on addressing all pertinent regulatory attributes would eliminate the need to establish new design-basis extension category of regulations
- For Option 3 (plant-Specific RMRF)
 - Instead of design-basis extension category, staff would establish design-basis enhancement category of events/requirements (per NUREG-2150)
 - Because implementation of NUREG-2150 approach would take longer than 10 years, staff would still need to develop clear internal rulemaking guidance for interim use until Option 3 fully implemented

Re-evaluation of Improvement Activity 2: Establish Commission Expectations for Defense-in-Depth

- Staff recommends taking action to establish Commission expectations for defense-in-depth
 - Option 1 (Maintain Existing Framework),
 - Option 2 (Risk-informed Alternative Licensing Basis), and
 - Option 3 (Establish Plant Specific Risk Management Regulatory Framework)
- Develop a definition of and decision criteria for determining adequacy of defense-in-depth (DID) for power reactor safety
 - Consistent with the approach recommended in SECY-13-0132
 - Reevaluate the need for a DID policy statement for power reactor safety
- Develop or revise to conform existing power reactor safety regulatory guidance, as appropriate



Questions?

Section III: Agency-wide Risk Management Policy Statement

- The consideration of risk and tailoring regulations and oversight to manage these risks is inherent in current NRC programs. The various regulatory approaches
 - have evolved separately (for reactors, materials, and other NRC program areas) based on their own individual attributes and characteristics
 - the various regulatory approaches are sometimes described using inconsistent terminology
- *If the Commission directs that it be developed*, the risk management policy statement could improve and make more consistent the regulatory framework used for all program areas
- The policy statement would establish **by policy** that the NRC uses a risk management approach; as such, the policy statement would establish an aspirational vision for the agency to improve existing agency policies and practices as guided by this vision

Example Policy Statement Concepts

- Applicable to all NRC-regulated program areas (radiological safety and security) and could be composed of:
 - A risk management approach would be used to ensure adequate protection of public health and safety and promote the common defense and security for all NRC regulatory activities
 - In a risk management approach, safety and security are ensured by:
 1. Understanding the risk associated with NRC-regulated activities
 2. Using that risk information to support regulatory decisions, and
 3. Ensuring that defense-in-depth is adequate

Example Policy Statement Concepts (continued)

- The risk management approach would:
 1. Use a structured process to identify issues, identify options, analyze, deliberate, implement decisions, and monitor the effectiveness of regulatory programs to make improvements as necessary
 2. Ensure appropriate regulatory controls and oversight are in place recognizing the variety of risks associated with different uses of radioactive materials, and
 3. Employ risk-informed decision-making, in which risk insights are considered together with other factors commensurate with their importance to public health and safety and common defense and security

Example Policy Statement Concepts (continued)

- The risk management approach would (cont'd):
 4. Recognize the wide range of risk methods and tools in assessing the risk that would be consistent the complexity, hazard and technology of the regulated activity
 - These methods and tools would include, for example, the use of PRAs, integrated safety analyses, failure modes and effects analyses, vulnerability assessments, or more qualitative methods and engineering judgment, as appropriate to the regulated activity
 5. Consider input from stakeholders and other interested parties

Example Policy Statement Concepts (continued)

- The technical analyses supporting the risk-management approach should:
 1. Be based on sound data, information, and methodologies, including consideration of uncertainties
 2. Use techniques or combinations of techniques appropriate for the hazards and complexity of the issue
 3. Be as realistic as practicable, and
 4. Promote and utilize advances in science and technology, as practicable
- The risk management approach, when implemented (e.g., use of a structured decision process, establishment of risk goals, development of risk analyses), would be tailored to each specific regulated activity, as appropriate

Agency-wide Risk Management Policy Statement

- *If the Commission directs the staff to proceed with an agency-wide policy statement,*
 - The NRC staff would follow the normal regulatory process to develop the policy statement for Commission approval
 - This process would involve stakeholder input through public comment periods and public meetings

Agency-wide Risk Management Policy Statement

- Agreement States previewed the White Paper before it was released to public
- Organization of Agreement States provided comments:
 - Policy statement would be a useful way to provide the Commission's expectations for a Risk Management Regulatory Framework
 - "We cannot state or endorse the concept that there is a general understanding [in the radioactive materials program] of the terms *risk-informed* and *defense-in-depth*."
 - "[A] risk management approach is already being performed with our current regulatory system and IMPEP [Integrated Materials Performance Evaluation Program] process"
 - Policy statement should say to "review current [risks and practices] and provide recommendations for enhancement."



Questions?

Public Meeting on RMRF

May 27, 2015

- Well attended (26 in person; 14 via webinar)
- Industry stakeholders concerned about the lack of implementation details on Option 2.
 - Nuclear Energy Institute (NEI) stated that without additional details of how the Option 2 process would work, it is very difficult to assess safety benefits and costs
 - NEI said NRC should not present its recommendations to the Commission without having developed more details regarding how the processes would work
 - Option 3 should not be implemented at existing plants
- Agency-wide policy statement – NEI said development did not appear to be an efficient use of existing resources

Public Meeting on RMRF (continued)

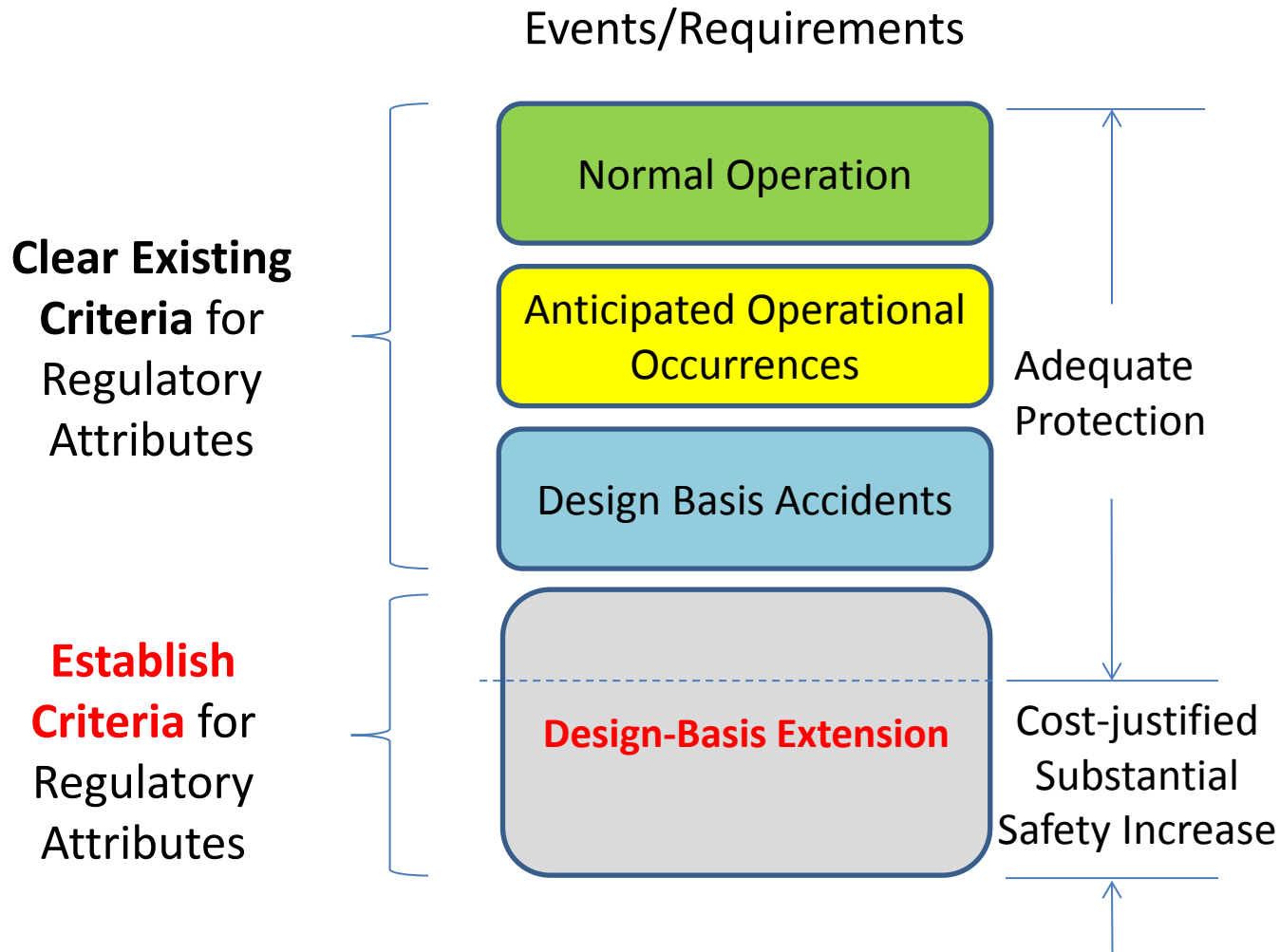
- The Union of Concerned Scientists (UCS) stated that Option 2 should not be pursued because it would result in inconsistent requirements being applied to individual plants across the industry and would further exacerbate the “patchwork” of different requirements that Near-Term Task Force Recommendation 1 proposed to eliminate
- UCS suggested that clear and consistent requirements could be applied across the industry by a new effort to reevaluate the Independent Plant Examinations (IPEs) and Independent Plant Examinations – External Events (IPEEEs) on a consistent basis across the industry

Path Forward on RMRF

- Public comments due on June 11, 2015
- Review public comments
- Meet with ACRS subcommittee (Oct.) and full committee (Nov.)
- ACRS letter
- Provide RMRF SECY paper to Commission by December 18, 2015

Backup Slides

Improvement Activity 1- Establish Design-Basis Extension Category



NUREG-2150 Design Enhancement Category

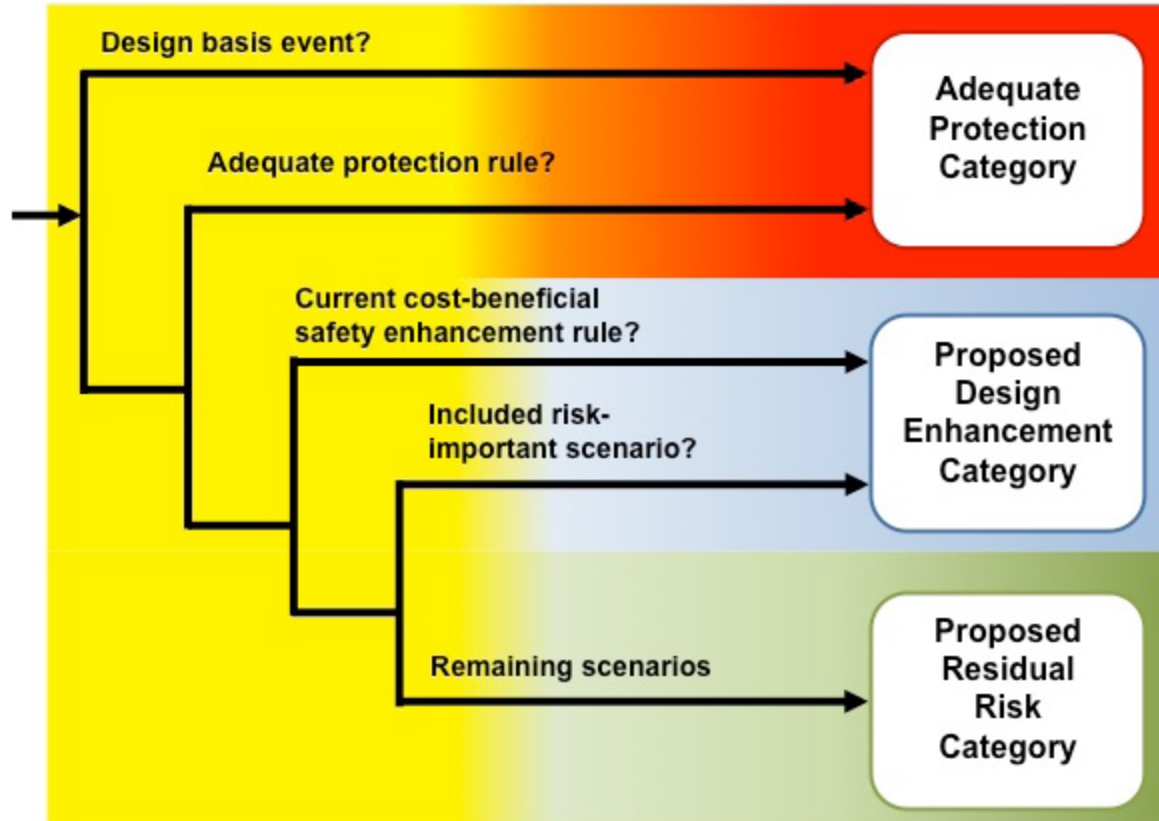
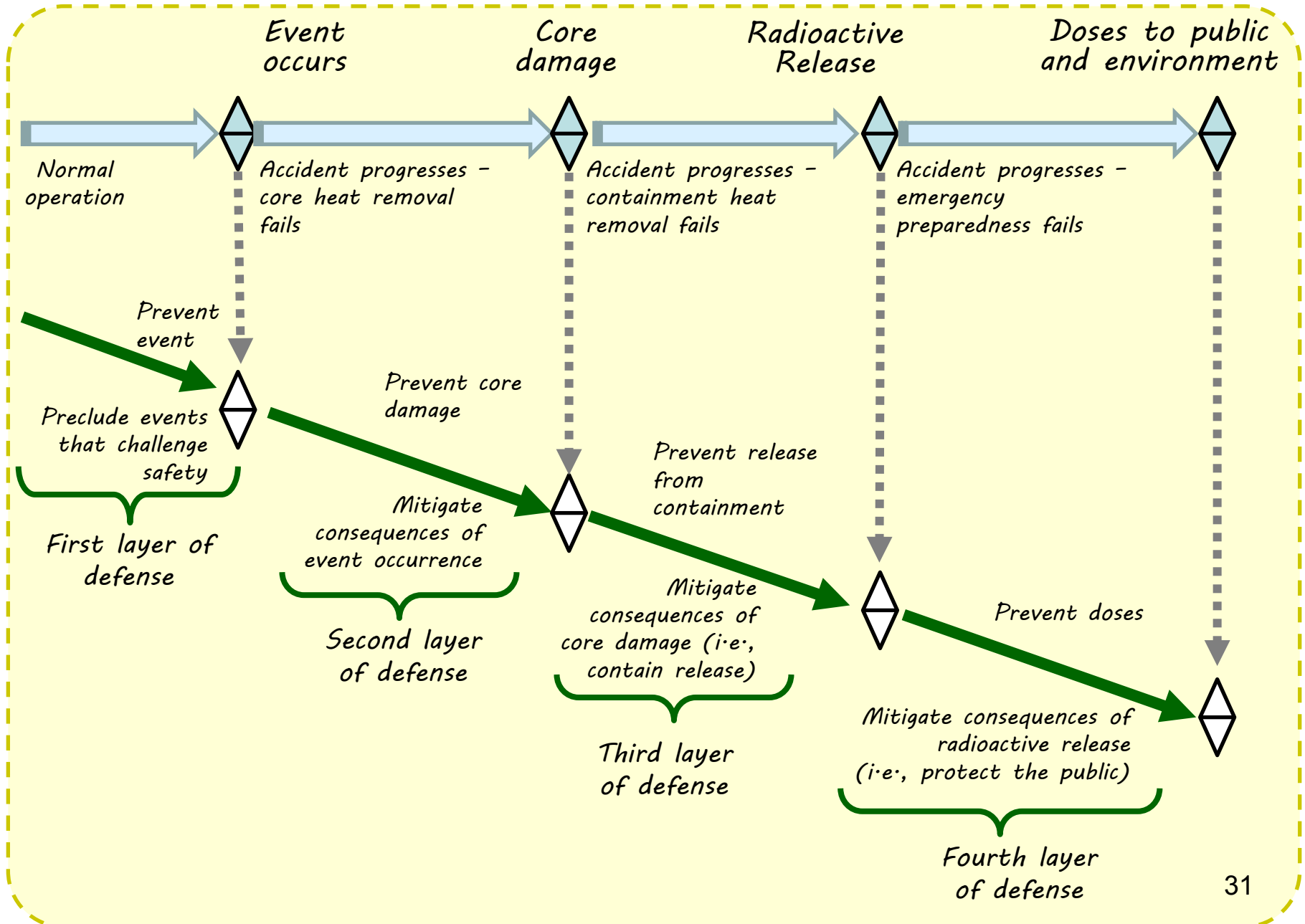


Figure 4.2-1 Regulatory Framework for Nuclear Power Reactors

Nuclear Power Reactor Safety DID May Consist of Four Levels



Definitions

To ensure a common understanding of this example policy statement, it is important to know the differences between the terms “risk management,” “risk assessment”, and “risk-informed approach.”

- *Risk management* is the recognition of the threat or danger involved with the use of nuclear materials and establishing controls and oversight to manage the potential threat or danger. That is, it is coordinated activities to direct and control an organization with regard to risk. [From ISO 31000, “Risk Management – Principles and Guidelines”]
- *Risk assessment* is the evaluation of what can go wrong, how likely is it, and what would be the consequences? This consideration may be addressed either qualitatively or quantitatively. [From SRM-SECY-98-144, “White Paper on Risk-Informed and Performance-Based Regulation,” March 1999]

Definitions (continued)

- *Risk-informed approach* to regulatory decision-making represents a philosophy whereby [quantitative and qualitative] risk insights are considered together with other factors to establish requirements that better focus licensee and regulatory attention on design and operational issues commensurate with their importance to public health and safety. A risk-informed approach enhances the deterministic approach which is used to define many of the design and operational requirements for NRC licensees. Risk-informed approaches lie between the risk-based and purely deterministic approaches. *[From SRM-SECY-98-144, "White Paper on Risk-Informed and Performance-Based Regulation," March 1999]*

NUREG-2150 Hierarchy and Structured Decision-making Process

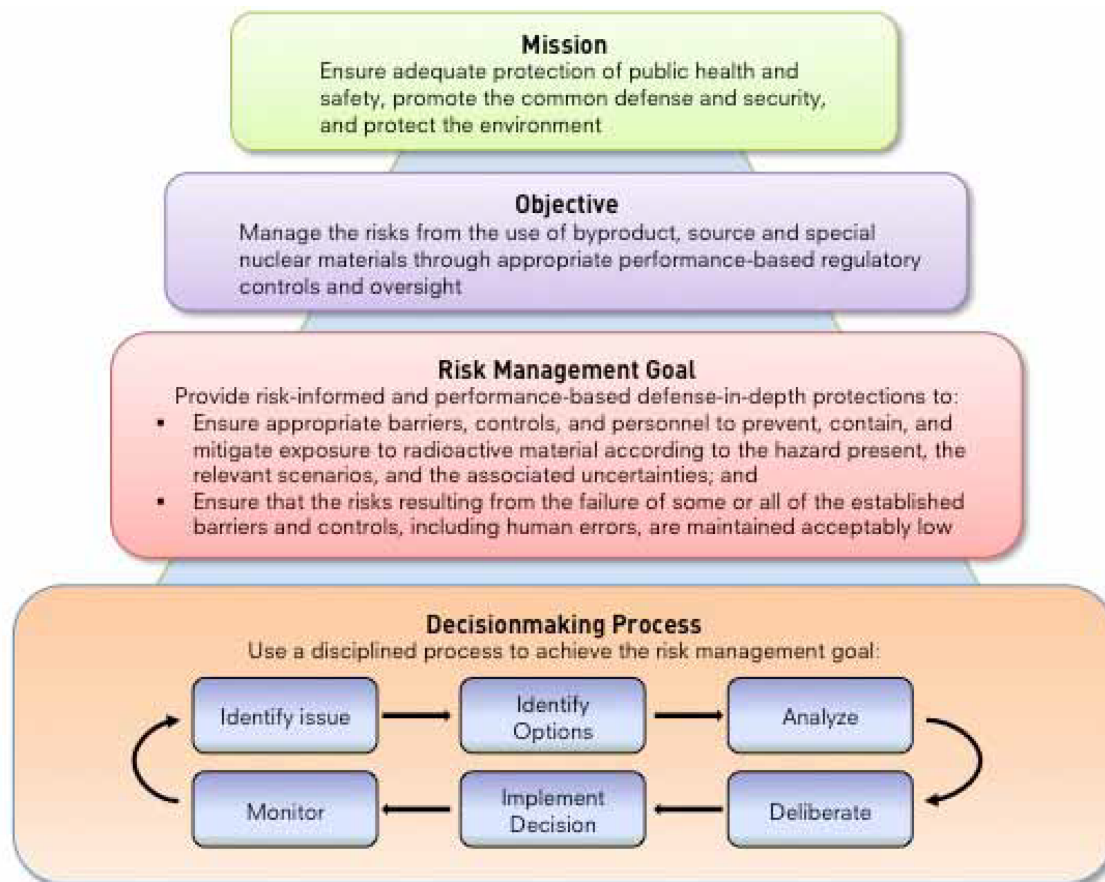


Figure ES-1 A Proposed Risk Management Regulatory Framework

A stylized blue graphic on the left side of the slide, consisting of a solid blue circle and several intersecting elliptical orbits, resembling a celestial or atomic model.

Risk Management Regulatory Framework – *Thoughts on Option 2*

ACRS Subcommittee Meeting

Joseph Giitter, Director, NRR/DRA
June 8, 2015

Introduction

- Option 2 is described in the “white paper” at a high level
- Feedback at a recent public meeting suggested more details on scope and process for Option 2 were needed.
- The rule would be developed with extensive stakeholder interaction to ensure that the benefits are realized and that unintended consequences are minimized

Option 2: Risk-Informed Alternative Licensing Basis

- Implemented by rule
- Alternative – Licensees may elect to adopt or not
- Requires a “suitable” PRA model
 - Provide plant-specific risk insights (search for and mitigate risk-significant events and/or accident sequences)
 - Allow risk informing of certain accidents and transients included in their licensing basis
- *Need more detail to inform external stakeholders (purpose of this presentation)*

Benefits of Option 2

- Increased safety to the public (identifies and mitigates any plant-specific vulnerabilities)
- Reduced burden (some non-risk significant portions of the licensing basis may be removed)
- Increased resource efficiency
 - Licensees may be able to expand self-approval of some changes
 - Risk-informed amendments would not require review of the base PRA (already reviewed)
- Operational flexibility for licensees (e.g., risk-managed Technical Specifications)

Desirable Features of the Implementing Regulation

- Be performance based
- Allow risk-informed amendments to the license without the need for an exemption
- Have objective acceptance criteria for risk, defense-in-depth, and safety margins
- Allow licensees to fully achieve the benefits of burden reduction commensurate with risk significance
- Require licensees to address vulnerabilities without requiring NRC to impose a backfit.

Possible Rule Content

- Scope – Current regulations and aspects of the licensing basis that may be risk-informed
- For each item in the scope:
 - Appropriate PRA scope, level of detail, and technical adequacy
 - Appropriate risk metrics, defense-in-depth elements, and safety margins
 - Acceptance criteria for risk, defense-in-depth, and safety margin

Possible Rule Content (cont.)

- Definition of “vulnerability” (in terms of risk, defense-in-depth, or safety margin) and the criteria for:
 - Identifying vulnerabilities
 - Adding an event or accident related to identified vulnerabilities to the plant’s licensing basis
 - Determining what action (e.g., analysis, plant modification, procedure change, etc.) should be taken to address the vulnerability
 - Determining the pedigree of the engineering analysis and the treatment requirements for SSCs that prevent or mitigate the consequences of the events or accidents related to the vulnerability

Possible Rule Content (cont.)

- The criteria for self-approval of changes to the licensing basis (a risk-informed 50.59; possible risk-informed definition of OPERABILITY)
- PRA update periodicity
- Corrective action and reporting requirements

Lessons Learned

- Lessons learned from major risk-informed applications (e.g., NFPA-805) requires new approaches to address PRA technical adequacy
- Separate NRC and Industry Risk Informed Steering Committee (RISC) working groups (WG) on PRA Technical Adequacy
- PRA "Certification" Concept

RISC WG Recommendations

- Objectives
 - Develop a process for making new methods available for risk-informed regulatory applications
 - Improve process for documentation and closure of Peer Review Facts and Observations (F&Os)
 - Evaluate additional gaps in peer review process
- Desire is that implementing recommendations will substantially improve the regulatory processes associated with verification of PRA technical adequacy for risk-informed licensing applications

“Certified” PRA Model

- A more robust approach to PRA technical adequacy may be needed to support a broad application of this rule
 - NFPA 805 experience shows that an up-front agreement on “methods” would be very beneficial
 - Industry “peer” review may not provide acceptable level of assurance that PRA is appropriate for broad changes to the licensing basis or identification of vulnerabilities
- To fully realize benefits, it may be necessary to:
 - Specify acceptable methods
 - Require PRA analysts to meet minimum qualification and experience requirements
 - Require “certification” of the PRA model (next slide)

PRA “Certification”

- More in-depth than peer review
- Preferably done by an independent body
- Must:
 - Be in-depth
 - Cover the entire model
 - Ensure that approved methods are employed
 - Ensure satisfactory resolution of the review findings
- Outcome: a “certified” PRA model that a licensee could use to make licensing decisions without the need for further NRC review and approval unless certain thresholds are reached

Example Scope of an Option 2 Rule

- Set of design bases events included in the plant-specific licensing basis
 - The current list could be reduced
 - New events could be added based on risk information
- Risk-informing operability determinations
- Scope might subsume some existing risk-informed regulations (e.g., 50.69, 50.48(c), etc.)

Conclusion

- Preliminary factors that could be considered in developing an RMRF rule.
- Extensive stakeholder interaction necessary to ensure that the benefits are realized and that unintended consequences are minimized.
- Option 2 could range from a very limited application to a fully risk-informed approach.

Industry Comments on Risk Management Regulatory Framework (RMRF) White Paper

Michael Tschiltz
Director of Risk Assessment
NEI



NUCLEAR ENERGY INSTITUTE

nuclear. clean air energy.

RMRF: Options 1, 2 and 3

- Option 1 – Maintain Current Framework
 - Industry preferred option based on current available NRC information
 - Enhance guidance for determining the adequacy of defense in depth in a truly integrated decision-making process
 - Streamline current approval processes for risk informed license amendment requests
 - No additional work needed to develop design-basis extension category
- Option 2 – Establish a Risk Informed Alternative Licensing Basis
 - Not preferred option at this point *for operating plants* in time based on current available NRC information
 - Could be a preferred option for new plants (full scope PRAs already required)
 - White paper lacks sufficient detail concerning scope and process
 - Unable to assess potential benefits and costs (no examples in white paper)
 - Unclear how this will differ significantly from Option 1 for staff review/guidance
- Option 3 – Establishing a Plant Specific Risk Management Regulatory Framework
 - Not preferred option
 - Expected to take longer than 10 yrs
 - Regulatory uncertainty high
 - Significant resources and time to develop and implement
 - Cost/Benefit unclear (cumulative effects)

RMRF: Options 1, 2 and 3

- Regulatory Process Issues
 - Option 2 - Voluntary Initiative (limited industry involvement); difference in process between Options 1 and 2 is unknown
 - Option 3 - Unclear basis for making it a requirement
 - Staff plans for issuance of Commission paper
 - Do not involve additional public interactions beyond May 27th meeting
 - Staff will consider but not address public comments
 - Next opportunity for involvement is Nov 2015 when staff discusses draft SECY with ACRS

RMRF: Options 1, 2 and 3

- Should Option 2 (Risk Informed Alternative Licensing Basis) be required for plant life extension beyond 60 years?
 - Requiring this Option has no direct connection to extending plant life (not uniquely relevant to plant life extension)
 - PRA doesn't provide any greater insights on plant life for years 61-80 than years 1-60
 - Other existing regulatory processes are focused on assessing /managing plant aging
 - Effectively bypasses NRC process for establishing new requirements (backfit)

Improvement Activities 1 and 2

- Design-Basis Extension

- Agree with staff's assessment/recommendation
 - Implementing rulemaking guidance make it unnecessary to establish a design-basis extension category
 - Not needed for Options 1 and 2
 - Option 3 plant specific design enhancement category of events and accidents based upon risk criteria (TBD)

- Defense-in-Depth

- Support the revision of guidance documents (e.g., RG 1.174) to ensure consistent application of defense-in-depth in regulatory decisions
- Support the development of decision criteria for determining the adequacy of defense-in-depth in an integrated risk-informed decision-making process
- Need to have industry involvement and interaction/public comment
- Do not see the direct benefit of the development of defense-in-depth policy statement

Agency-Wide Risk Management Policy Statement

- Example Policy statement at very high level
 - Question if this is effective use of limited resources (multi-office effort)?
 - Higher priority should be to address issues related to risk informed decision-making (e.g., uncertainty, defense in depth, aggregation)
 - Policy Statement covers all NRC program areas
 - however at present no apparent intent or resources to put in place a Risk Management Framework for other program areas (white paper) in the near-term and 10 yrs to develop Option 3 for existing reactors.

Recommendations

- Maintain current framework (Option 1) for operating plants
- Implement improvement activities for RG 1.174 (Defense-in-Depth)