

Official Transcript of Proceedings
NUCLEAR REGULATORY COMMISSION

Title: Advisory Committee on Reactor Safeguards
 Reliability and PRA Subcommittee Meeting

Docket Number: (n/a)

Location: Rockville, Maryland

Date: Monday, November 3, 2014

Work Order No.: NRC-1193

Pages 1-498

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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

(ACRS)

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RELIABILITY AND PRA SUBCOMMITTEE

+ + + + +

MONDAY

NOVEMBER 3, 2014

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ROCKVILLE, MARYLAND

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The Subcommittee met at the Nuclear
Regulatory Commission, Two White Flint North, Room
T2B1, 11545 Rockville Pike, at 8:30 a.m., JOHN W.
STETKAR, Chairman, presiding.

COMMITTEE MEMBERS:

JOHN W. STETKAR, Chairman

RONALD G. BALLINGER, Member

DENNIS C. BLEY, Member

DANA A. POWERS, Member

JOY REMPE, Member

STEPHEN P. SCHULTZ, Member

GORDON R. SKILLMAN, Member

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DESIGNATED FEDERAL OFFICIAL:

MIKE SNODDERLY

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P R O C E E D I N G S

8:33 a.m.

CHAIRMAN 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'm John Stetkar, chairman of the subcommittee. Members in attendance today are Steve Schultz, Dick Skillman, Dana Powers, Dennis Bley, Ron Ballinger and Joy Rempe.

MEMBER POWERS: That brought him to an abrupt halt. You can stun Jim.

CHAIRMAN STETKAR: I lost my place. It doesn't say what it's supposed to say here. Mike Snodderly of the staff is a designated federal official for this meeting.

Former Commissioners Apostolakis and Magwood, in a memorandum dated November 5th, 2012, proposed an initiative intended to enhance safety by applying probabilistic risk assessment to determine the risk significance of current and emerging reactor issues and in an integrated manner on a plant-specific basis.

The staff requirements memorandum dated February 6th, 2013 the commission approved an

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1 initiative to further explore the idea.

2 The commission also directed the staff to
3 develop a notation vote paper for commission
4 consideration that provides approaches for allowing
5 licensees to propose to the NRC a prioritization of the
6 implementation of regulatory actions as an integrated
7 set and in a way that reflects their risk significance
8 on a plant-specific basis.

9 The purpose of today's meeting is to
10 discuss the status of this initiative with industry
11 representatives and the NRC staff. This is an
12 informational briefing.

13 The committee plans to review and comment
14 on the notation vote paper currently scheduled for
15 March 2015 with an associated subcommittee meeting in
16 February 2015.

17 This meeting is open to the public with the
18 exceptional portions that may be closed to protect
19 information that is unclassified safeguards pursuant
20 to 5 USC 552(b)(3).

21 Rules for the conduct of and participation
22 in the meeting have been published in the Federal
23 Register as part of the notice of this meeting. The
24 subcommittee intends to gather information, analyze
25 relevant issues and facts and formulate proposed

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1 positions and actions as appropriate for deliberation
2 by the full committee.

3 A transcript of the meeting is being kept
4 and will be made available as stated in the Federal
5 Register notice. Therefore, it is requested that all
6 speakers first identify themselves and speak with
7 sufficient clarity and volume so that they can be
8 readily heard.

9 I'd ask everyone to check your little beepy
10 devices and please turn them off. We received no
11 written comments or requests to make oral statements
12 and understand that there may be individuals on the
13 bridge line today who are listening in on today's
14 proceedings.

15 The bridge line will be closed on mute so
16 those individuals may listen in. At the appropriate
17 time later in the meeting, we'll have an opportunity
18 for public comments from the bridge line and for members
19 of the public in attendance.

20 First of all, I want to say before we start
21 the meeting that we're really interested in this
22 initiative.

23 I'm glad that we finally got together.
24 We've been trying to organize this meeting for the
25 better part of six or eight months now and this is our

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1 first opportunity to really have some interactions with
2 the people who are out there doing their work and I hope
3 we'll have a really productive exchange.

4 With that, I'll call upon John Butler of
5 NEI to open the presentations. John?

6 MR. BUTLER: Great. Thank you. Again,
7 my name is John Butler. I am a director of strategic
8 programs at NEI.

9 With me at the table this morning is Jim
10 Chapman to my far right of Curtiss-Wright Scientech and
11 my near right is Don Dube of Erin. Both Jim and Don
12 were very instrumental in the development and putting
13 into practice the process we're going to be talking with
14 you today about.

15 So I'm glad that they're joining me here
16 in case the questions get deeper than the surface on
17 the process.

18 What we'd like to do today or at least start
19 off today is give you a quick overview of the process
20 so we'll give you that overview. But in talking with
21 Chairman Stetkar what you really want to hear is or what
22 he wants to hear is from the pilot.

23 So we've arranged for three of the six
24 pilot plants to come before you this morning and give
25 you the experience that they had this summer in going

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1 through the process for their plants. So Palisades,
2 Hatch and Robinson are the three pilots who are prepared
3 to come and discuss with you.

4 Following that, if there's time I'd like
5 to have all six of the pilots come up here and kind of
6 provide, you know, an opportunity for you to ask any
7 questions of any of the pilots that went through the
8 process. So if we have time we'll go through that panel
9 discussion.

10 The - as was pointed out, this was really
11 put into focus with the COMSECY that Commissioners
12 Apostolakis and Magwood put forward and in that they
13 put very simply they stated that nuclear safety is
14 advanced when licensees and the staff focus their time,
15 attention and resources on issues of greater safety
16 significance at each plant and that's what we're trying
17 to accomplish with the process we're going to be talking
18 with you about.

19 We think the prioritization process that
20 we've put together has an opportunity not only to assess
21 the plants but also has - we have an opportunity to apply
22 that prioritization process early on within our
23 discussions with NRC staff on various emerging issues.

24 We hope that the earlier we apply this
25 process the easier it will be on plant licensees because

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1 a lot of that prioritization will have already been
2 considered in the issues when it reaches individual
3 plant licensees.

4 Now, our quick run-through of the time line
5 that we've used in developing this process - once the
6 process was developed sufficiently we started off with
7 some tabletop exercises.

8 The first tabletop exercises were on
9 generic issues or issues that had a generic quality and
10 we put together a panel that would go through and
11 evaluate these issues to assess them on a generic sense,
12 identify which aspects of the issue were of primary
13 importance - what you had to then focus on when you
14 looked at this on a plant-specific basis.

15 We then went through some plant-specific
16 tabletops at three different sites in the
17 February-March time frame. This was with a small
18 number of issues just to kind of test out the process.

19 We then went through another set of
20 exercises with generic issues and all this led up to
21 our initiation of the actual pilot at six different
22 sites during the summer of this year.

23 That process took several months and
24 toward the end of that process we realized that the
25 issues that we were evaluating we had not fully

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1 exercised some of the attributes of the process so we
2 set up a - set up tabletops to look at EP - emergency
3 preparedness - rad protection and security in a little
4 bit more detail.

5 So we kind of ginned up some exercises that
6 would challenge those aspects of the process a little
7 bit - to a greater degree and we did that in September
8 of this year. We completed all the pilot exercises
9 early October and have been trying to pull together our
10 lessons learned.

11 We've revised the guidance document to
12 incorporate not only NRC staff comments on the process
13 but the lessons learned from the pilot exercises and
14 we are prepared to issue a revised set of guidance
15 incorporating those lessons learned.

16 CHAIRMAN STETKAR: John, on those
17 follow-up tabletops did you use the same panels that
18 each - I'm assuming you ran them through the six sites
19 or am I - bad assumption?

20 MR. BUTLER: No. The follow-up tabletops
21 were done here in Washington -

22 CHAIRMAN STETKAR: Okay. So the - okay.

23 MR. BUTLER: - with expertise on those
24 various areas from NEI and NRC staff.

25 CHAIRMAN STETKAR: So they were like the

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1 initial tabletops?

2 MR. BUTLER: Yes.

3 CHAIRMAN STETKAR: Okay. Thank you.

4 MR. BUTLER: What I'd like to do now is
5 turn it over to Don Dube to kind of take us through a
6 quick overview of the guidance.

7 MR. DUBE: Thank you, John. Thanks for
8 the invitation. I do want to recognize before
9 beginning that my good friend and colleague, Jim
10 Chapman, of many, many decades is - you know, plays an
11 equal part in the development of the process.

12 In the interest of making this flow, I'll
13 be presenting an overview of the process but I want to
14 recognize that. I know you're here mainly to listen
15 to the pilot plant results.

16 So in the interest of time I'll be going
17 through this - the process overview a little bit
18 quickly. But if there's any questions, please stop me.

19 So on the first slide on the overview,
20 nuclear safety impact is the primary focus and we were
21 sure to do that right from the beginning. In fact, of
22 all the categories we spent most time on nuclear safety
23 impact.

24 We decided to try to work within existing
25 processes here at the NRC. So we used thresholds that

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1 are similar to the significance determination process
2 except for we're looking at the reverse perspective.

3 Of course, an SDP is looking at performance
4 deficiency so there's perhaps a change of risk that
5 increases risk as a result of an inspection finding.

6 Here we're going in the opposite direction
7 because if a particular plant modification was
8 implemented how much risk reduction would there be but
9 we're using the same order of magnitude threshold so
10 that fits in with the third bullet there.

11 We're looking at broad categories spanning
12 a decade of risk in our categorization. We adapted
13 some of the screening questions from the 50.59 change
14 process and there's a Guidance Document 9607.

15 We adapted those to screen a number of
16 questions and provide questions as utility goals to do
17 the process.

18 We have some definitions of more than
19 minimal that are consistent with Reg Guide 1.174 on
20 risk-informed changes to the licensing basis and the
21 50.59 guidance, and cost benefit is a factor but it's
22 kind of a tiebreaker, if you will, that's done at the
23 end.

24 And one of the important things we did as
25 a result of the tabletop exercises and the lessons

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1 learned is we allowed for an adjustment for personnel
2 burden reduction.

3 We had a number of - well, we had a hundred
4 samples from the pilot plants and a number of cases -
5 things like security measures or radiological
6 protection measures, fire protection, what have you.

7 We weren't capturing modifications that
8 would reduce those burdens and so we got feedback from
9 the pilots and we said yeah, you're right.

10 So that's one of the things we did feedback
11 in from the lessons learned and we can talk about that
12 if you will.

13 MEMBER SKILLMAN: Don, two questions on
14 that slide, please.

15 MR. DUBE: Yeah.

16 MEMBER SKILLMAN: Third bullet, decade of
17 risk - would you explain what decade of risk means in
18 that context?

19 MR. DUBE: We have categories of nuclear
20 safety importance - high, medium, low, very low and next
21 to none, and the high category spans the decade of
22 change in core damage frequency or change in large early
23 release frequency. The next decade would be medium and
24 so on and so forth.

25 MEMBER SKILLMAN: Okay. So that's really

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1 LERF and CDF?

2 MR. DUBE: Yeah.

3 MEMBER SKILLMAN: Okay. One more
4 question.

5 MR. DUBE: Sure.

6 MEMBER SKILLMAN: On the last bullet -
7 those who are out in the industry know that sometimes
8 a change to a pipe pump valve instrument isn't the
9 greatest risk. The greatest risk is a change in the
10 program. It is very obscure - for instance, a slight
11 change in how you implement your QA program.

12 Maybe the one that embeds the most latent
13 risk is your mini-mods program where your plant people
14 can make very slight changes and unintentionally create
15 a large risk for the facility.

16 MR. DUBE: I see.

17 MEMBER SKILL MAN: To what extent were
18 program changes considered?

19 MR. DUBE: Program changes can be
20 considered in here. In fact, we had some examples with
21 NFPA 805, for example. They are more qualitative than
22 quantitative, of course.

23 The other thing, and Jim might add some
24 words, is we can - we do capture if it's a negative
25 impact on risk - of an increased risk -

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1 MEMBER SKILLMAN: Okay. Thank you.

2 MR. DUBE: - that's captured.

3 MEMBER SKILLMAN: Thanks. Okay.

4 Thanks.

5 MR. DUBE: Thank you. Next slide. You
6 know, I don't want to spend a lot of time on block
7 diagrams and the process but let me give you a 15-second
8 overview.

9 There's two aspects. If there's a issue
10 that has generic implications there's something called
11 the Generic Assessment Expert Team. That's industry
12 leaders and subject matter experts meeting to discuss
13 what is the issue and what is the potential risk
14 reduction - characterize it.

15 But then we may not assign a particular
16 importance to a particular issue. We may span an issue
17 and we had some good examples on tornado missile issues
18 where we found certain categories of plants.

19 It was a small risk issue but there is older
20 generation of plants where it may have been a greater
21 issue and we discussed this and so an output from that
22 team was a generic characterization.

23 But we identified classes of plants where
24 the risk may span, you know, one or more orders of
25 magnitude.

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1 MEMBER BLEY: Don?

2 MR. DUBE: The purpose of that is to
3 provide that information to the plant specific. Yes?

4 MEMBER BLEY: Although this is the plant
5 process for scheduled prioritization it sounds like
6 that first box is an industry or NEI organized effort
7 on generic issues.

8 MR. DUBE: Yes.

9 MEMBER BLEY: Is that right? Okay.

10 MR. DUBE: We exercised that in May on
11 three topics and our talk went very well.

12 CHAIRMAN STETKAR: Don, when I read
13 through that I guess why - you know, what is the value
14 added from that initial industry screening and -

15 MR. DUBE: I think a lot of value.

16 CHAIRMAN STETKAR: - organization?
17 Well, a lot of value in terms of - I guess what I'm
18 interested in looking at the plants how influenced am
19 I as a plant by that effort that I would hope that I'm
20 not influenced at all.

21 MR. DUBE: I think you'll hear from the
22 plants. I found out some of the - there are some
23 generic issues. For example, one of the issues that
24 we looked at was enhanced drug testing for specific
25 designer drugs.

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1 CHAIRMAN STETKAR: Okay.

2 MR. DUBE: And we did kind of a generic
3 assessment on that and that's applicable across the
4 board to all the plants so why should you have 60
5 licensees reinventing the wheel.

6 So that's an example that lends itself very
7 well to generic assessment. One that was in between
8 was enhanced reactor coolant pump seal design.

9 These are the circ flow - for example, seal
10 designs - where we found that there could be a
11 plant-specific aspect to it but there was a strong
12 generic aspect.

13 And then there's, on the other extreme,
14 very plant-specific flooding issues where the best you
15 can do on something like that is say these are the things
16 to look for at the plant. But maybe you ought to hear
17 from the plant representatives themselves.

18 MR. CHAPMAN: That's - yeah. Exactly.

19 MR. DUBE: I thought there was a lot of
20 value added.

21 MR. CHAPMAN: This is Jim Chapman, and the
22 simplistic view is it provides really good examples for
23 the plants so they can learn from those examples.

24 CHAIRMAN STETKAR: Well, what I'm
25 concerned about, I guess, is that we have a lot of

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1 experience of the industry telling the individual
2 plants what's important for them.

3 MR. CHAPMAN: I understand.

4 CHAIRMAN STETKAR: And the initial
5 emphasis on this was to get to a very plant-specific
6 use of risk information and a structured prioritization
7 process to make sure that we highlighted the
8 differences between the individual units and each of
9 their, you know, plant-specific risk profiles, how
10 their influence - how they influence decisions about
11 these relative issues.

12 Quite honestly, to be, you know, blunt,
13 that's my biggest concern about this - the industry's
14 prescreening is how much does that influence the
15 individual plant's decision process -

16 MR. CHAPMAN: Right. Well, you'll hear
17 from -

18 CHAIRMAN STETKAR: - either explicitly or
19 implicitly because of the way that the issue is
20 structured from that industry exercise.

21 MR. CHAPMAN: I think you'll be pleased
22 when they speak.

23 MR. DUBE: Yeah, I think you will, too, and
24 we'll get to an example of the buyer-in open phase issue
25 spanned. The GAET found that it could span a large

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1 spectrum depending on very plant-specific -

2 CHAIRMAN STETKAR: Well, I mean, a lot of
3 the issues - that's true. The issue that you brought
4 up about the seals very - at a very high level sounds
5 generic.

6 At a very plant-specific level, you know,
7 can be very, very different depending on what the plants
8 have done, you know, in terms of modifications or
9 original design.

10 MR. DUBE: You'll see as part of the
11 presentation - I think John's going to present it - when
12 we aggregated the results among all the pilot plants
13 there were examples where everything fit in line.

14 Other examples where they broadly spanned
15 decades of risk reduction and we could explain it and
16 that's the only one.

17 CHAIRMAN STETKAR: And you're going to
18 present that roll up?

19 MR. CHAPMAN: Yes.

20 CHAIRMAN STETKAR: Good.

21 MR. BUTLER: I wanted to point out one
22 thing. One of the values of the Generic Assessment
23 Expert Team process that I hope to see come into flavor
24 is to demonstrate its applicability and when it's used
25 on emerging issues to kind of direct how those issues

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1 should be addressed.

2 CHAIRMAN STETKAR: See, those kinds of
3 words - you have to be careful when you say those kind
4 of words to me because to direct how these issues should
5 be addressed is precisely my concern.

6 MR. BUTLER: To inform how those issues
7 should be addressed. But you - hopefully you can
8 understand what I'm - what I'm talking about.

9 CHAIRMAN STETKAR: I understand the
10 concept.

11 MR. BUTLER: The more informed you are -

12 CHAIRMAN STETKAR: What I'm - what I'm
13 interested in is the practice.

14 MR. BUTLER: The more informed you are
15 early in the process the better off you'll be and that's
16 what we're trying to accomplish.

17 MR. CHAPMAN: I think you'll find that we
18 stressed in the training sessions early on what the
19 safety people in this room know, that all risk is site
20 and plant specific and I was extremely impressed with
21 the pilots. They put really, really good people on it
22 and they thought that way. So you can ask them.

23 CHAIRMAN STETKAR: Just make sure you
24 speak up, Jim, because we -

25 MR. CHAPMAN: That's the first time I've

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1 been asked to speak louder.

2 CHAIRMAN STETKAR: - you have to use your
3 big boy voice - big boy voice today.

4 MR. DUBE: Okay. One more block on here
5 that I want to spend any time on is that plant IDP -
6 plant-specific importance characterization.

7 Each of the pilot plants put together an
8 IDP multi-disciplinary and I sat in on a couple of the
9 IDP deliberations and the aggregation and I - you know,
10 I have a utility background of 16 years.

11 That was the first time I've seen a heavy
12 discussion on risk impact of a proposed modification.
13 I mean, very focused on okay, what is this project going
14 to do and what's it going to do for risk and with risk
15 being - nuclear safety risk being the primary focus and
16 I thought of all the - of all the activities that was
17 the most impressive and, again, you'll hear from them.

18 So we kind of talked about this. Let me
19 just go through this slide quickly. It's consistent
20 with a number of processes. The integrated decision
21 making panel is - mimics some existing decision making
22 panels on 5065 - that's maintenance rule - 50.69 is
23 characterization of system structure and components
24 and RITS 5(b) is risk-informed tech specs.

25 So what's get prioritized? Actions

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1 addressing regulatory issues and findings,
2 plant-initiated actions addressing equipment, the
3 safety implications.

4 This is reliability and you'll hear some
5 examples where - very good examples where because of
6 the - because of the need to implement so many
7 regulatory issues that this one component here that has
8 reactor trip impacts, safety impacts has not been given
9 the attention that it needs because of all these other
10 regulatory-driven issues.

11 And why not, and we put it on an equal
12 footing and you'll find - you'll see some interesting
13 examples where a number of plant initiatives really
14 should be high priority but had not been - you know,
15 in the background there for some period of time. So
16 that's an important one. What doesn't get
17 prioritized general, you know, operations and
18 maintenance - you know, you do this maintenance
19 activity on a particular pump every quarter or some
20 periodic basis - general facilities maintenance.

21 If there's an immediate action for
22 continued safe operations that's not going to get
23 prioritized. You just fix it. If there's an
24 immediate repair for continued power production, like
25 your main transformer just failed, you're not going to

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1 go through this process.

2 You got to replace that. There's one
3 other that's not on this slide that we added lately as
4 a result of the Hatch pilot.

5 There are some major programs out there and
6 what comes to mind would be things like extended power
7 upgrade, license renewal, maybe some generator
8 replacement.

9 These are major multi
10 hundred-million-dollar projects that get their own
11 cost benefit evaluation by some corporate financial
12 organization.

13 They're justified based on their own cost
14 benefit. These probably are not good candidates to go
15 through this process and we found that out with Hatch.

16 We have five importance categories or five
17 categories: nuclear safety - that's mainly reactor
18 core but spent fuel as well - we're not going to be
19 worried necessarily with safety of low-level waste
20 storage, for example; security includes cyber,
21 emergency preparedness, radiological protection and
22 the reliability of structure systems and components and
23 I want to emphasize at first the thought was was this
24 reliability of the plant - was this megawatt hours
25 production and really it isn't.

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1 It may - it may involve reliability of
2 balance of plant systems but these balance of plant
3 systems if you don't maintain them could institute a
4 reactor trip.

5 So that's an important category and I think
6 we'll see maybe a dozen examples of such structure
7 systems of components evaluations and how important it
8 is.

9 Let me just give you one example at Hatch.
10 They had the reactor core isolation cooling controller
11 obsolete - you know, very concerned with it. You know,
12 the RCIC is a MSPI system.

13 It has high risk imports in the maintenance
14 rule, it's tech spec, you name it, and we felt that it's
15 important.

16 You know, if you just go through the - your
17 PRA model and do a Delta CDF it's very hard to give a
18 accurate measure of the risk impact of maintaining
19 something that's obsolete or one-for-one replacement.

20 Yet, we felt that there should be an
21 importance categorization for that where you're
22 maintaining, you know, very important safety-related
23 equipment and I think you'll see a number of examples.

24 So on the safety importance - next slide
25 - we have a progressive screening process. Jim was

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1 very instrumental - Jim Chapman - in developing it. We
2 have a three-step process.

3 In step one it's intended to be a 30-minute
4 screening. In the practice it ends up being a little
5 bit longer than that but is there any impact of the -
6 or is there an adverse impact of the proposed change
7 and what - that's asking a series of questions very much
8 like 50.59 and saying, you know, do I even need to look
9 at this issue or is it, you know, repaving the parking
10 lot or refurbishing the cafeteria or lunch room.

11 Probably 90 percent of the time in round
12 numbers it'll screen in and you'll move on to step two
13 but there are those cases where we say why are we even
14 looking at this - it's not a good candidate to
15 prioritize.

16 In step two you ask a series of questions
17 - very similar questions to step one. There's five
18 questions but just asking is there more than minimal
19 impact and the definitions of minimal impact we have
20 a qualitative definition and a quantitative definition
21 that are very similar to some of the 50.59 questions.

22 And then if you make it through there
23 you're at a kind of a decision point and we did it
24 deliberately.

25 If there's quantitative PRE information

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1 and you can - the licensee can go in and give yourself
2 or use the PRA model and get a change in core damage
3 frequency or a change in large early release frequency,
4 come up with a quantitative result, you could skip step
5 3-A which is more of a qualitative thing and go right
6 to step 3-B, quantitative.

7 Or you could do step 3-A, come up with a
8 qualitative and say I'm not sure that that makes sense.
9 If I have some PRA let's maybe take a look at the
10 quantitative results.

11 Again, it's progressive screening in terms
12 of you got a half hour effort and a couple hour effort,
13 a half day effort or maybe a day effort and it's
14 purposely done that way to be efficient.

15 Coming out of those processes you say - you
16 characterize the nuclear safety importance as very low,
17 low, medium and high and again that's entirely
18 consistent with the SDP - significance determination
19 process - you know, bands of risk reduction. Go ahead.

20 MEMBER SCHULTZ: Don, is it prescribed who
21 makes this determination in the process?

22 MR. DUBE: Yes. The subject - if there's
23 an issue - enhanced reactor cooler pump seal
24 replacement - you'll have a subject matter expert
25 present to the integrated decision making panel, which

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1 is that multi unit - a multi disciplinary group
2 typically.

3 Our experience is two or three SRO
4 equivalence, maintenance, radiological protection,
5 security, engineering, safety analysis, PRA. He will
6 present - propose something and they will ask a series
7 of very tough questions that justify that and if
8 necessary they will fine tune it and change the reports.

9 MEMBER SCHULTZ: And they're moving
10 through that guidance information associated with that
11 questioning approach?

12 MR. DUBE: Yeah. Yes. And it worked
13 very well. I observed a number of them so that's -
14 ultimately they have the decision.

15 MEMBER REMPE: When I looked ahead I saw
16 some of the plants had brought in people from other
17 plants. Is that recommended or is that just -

18 MR. DUBE: I don't - do you recall?

19 MR. BUTLER: Yeah. I think it was
20 Robinson brought in some of their corporate personnel
21 to assist.

22 MEMBER REMPE: Mm-hmm. Generally it's
23 people from the plant?

24 MR. BUTLER: Generally I think it was
25 plant personnel.

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1 MR. DUBE: Yeah. I mean, you can augment
2 it with subject matter experts. If you have at the
3 corporate office some experts on, I don't know,
4 in-service inspection of piping or something you can
5 bring them in.

6 CHAIRMAN STETKAR: Don, this notion of the
7 screening on more than a minimal impact what's your
8 notion of minimal may be different than my notion of
9 minimal.

10 How do you - how do you struggle with that,
11 especially if you have - I understand if you have a full
12 scope PRA. I can - I can run it through there and get
13 some quantitative information.

14 But the vast majority of the plants don't
15 have that. So if I don't have numerical basis how do
16 I as a typical nuclear power plant engineer operations
17 maintenance understand what minimal may mean?

18 MR. DUBE: Well, good question. We
19 pulled a lot of the qualitative guidance on that right
20 from 50.59 guidance document in NEI and so there's a
21 qualitative definition and a quantitative definition.
22 Jim, you want to go ahead?

23 MR. CHAPMAN: Yeah. In 50.59, because
24 sometimes you can just target the assessment to a
25 component if you're going to change a component and the

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1 NSB has been implementing 50.59 for as long as I can
2 remember.

3 And so a couple of pieces of 50.59 are can
4 you attribute to the change a discernible difference.
5 If the answer is no, it's less than minimal.

6 Also, the 50.59 guidance has a
7 quantitative value if the change is less than 10
8 percent. That's less than minimal so it screens.

9 We also invoked if you have the PRA
10 information Reg Guide 1174 - yeah, 1174 - less than 1
11 percent change and less than 10 percent change. I'm
12 pretty sure on those numbers. We can look them up.

13 And so far that has worked effectively.
14 The whole key in steps one and two - the reason step
15 one has taken more than 30 minutes it's where the
16 subject matter expert and the IDP, really, you have to
17 make sure they understand the issue and the proposed
18 resolution, which is absolutely critical.

19 Anyone that's - many of you have I'm sure,
20 if not all, in decision analysis is make sure you really
21 understand the issue and the proposed resolution - what
22 are the impacts.

23 And the screening questions - not
24 screening questions - the larger questions basically
25 also out of the SDP but they're common sense and we

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1 wanted to make sure you didn't have to be a PRA expert
2 to understand them.

3 Change an initiating event. Change the
4 mitigation system reliability availability capacity.
5 Consequence - defense in depth. Oh, and safety margin,
6 and this is - and work that way through so that if you
7 do do a PRA analysis in step three Bravo you've actually
8 understood what you should change in the model and you
9 can also come to grips with the scope. You're right
10 - not everybody has an all-seeing all-knowing PRA.

11 So I'm pretty comfortable with the minimal
12 because it's worked in the industry basically for
13 decades, and as Member Steven Schultz knows I used to
14 sign 50.59s as did Dr. Schultz. So we know how it works
15 - and did Don Dube. Thank you.

16 MEMBER SKILLMAN: Don, let me ask a
17 question, please. I'm looking at what gets
18 prioritized in your slide eight.

19 MR. DUBE: Okay.

20 MEMBER SKILLMAN: Plant-initiated
21 actions addressing equipment and safety implications.
22 In your - in your discussion, you mentioned changing
23 the reactor coolant pumps.

24 MR. DUBE: Yeah.

25 MEMBER SKILLMAN: That's a capital

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1 modification.

2 MR. DUBE: Yeah.

3 MEMBER SKILL MAN: That's one that's three
4 years, five years in the making.

5 MR. DUBE: Oh yeah.

6 MEMBER SKILLMAN: So that one I understand
7 how this process could be very valuable and very
8 applicable. You also mentioned making decisions about
9 equipment that might have failed.

10 MR. DUBE: Or are degraded, yeah.

11 MEMBER SKILLMAN: Okay. That sounds more
12 like an issue that comes out of day-to-day plan ops.
13 You're in your corrective action program. You've got
14 a degraded device.

15 What is the - what is your perspective on
16 timing and might some of the presentations later
17 address that?

18 What I'm really concerned about - or not
19 concerned, what I'm thinking about is the event that
20 occurs overnight - the module failure and the RPS, the
21 failure in a ES AS logic device.

22 MR. DUBE: That would not get prioritized.
23 Can we back up?

24 MEMBER SKILLMAN: That gets fixed.

25 MR. DUBE: Next slide.

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1 MEMBER SKILLMAN: Okay. Okay.

2 MR. DUBE: Immediate action necessary for
3 continued safe operation - that's not going to get
4 through this process.

5 MEMBER SKILLMAN: Okay. Now, is there -
6 good. Is there hiding in that bullet the presumption
7 that what is replaced meets the same design
8 requirements as the device that was removed?

9 MR. DUBE: Yeah. Yeah. It's part of the
10 process now.

11 MEMBER SKILLMAN: Okay.

12 MR. DUBE: Now, a change - let's say - take
13 your, you know, channel failure one for one. But to
14 go from analog to digital RPS - reactor protection
15 system - that would go through this process.

16 MEMBER SKILLMAN: Oh, yeah. I mean,
17 that=s a capital upgrade.

18 MR. DUBE: Yeah.

19 MEMBER SKILLMAN: So okay. I'm in line.
20 Thanks.

21 CHAIRMAN STETKAR: I think the example
22 used on the RCIC control is a good example. That's kind
23 of a gray area where you see replacement of a not
24 necessarily obsolete but on the way to obsolete
25 technology with a new technology, not quite as dramatic

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1 as analog to digital, you know, reactor protection
2 safeguards.

3 So there - I'm assuming there is some gray
4 area in there in terms of what you feed into the process.

5 MR. DUBE: Yeah. I mean, we try to give
6 general guidance but in the end each plant is on B

7 (Simultaneous speaking.)

8 CHAIRMAN STETKAR: But, again, that's a
9 plant-specific decision. What you put in this - what
10 you run through this process is up to the plant.

11 MR. DUBE: Yes.

12 CHAIRMAN STETKAR: Okay.

13 MR. DUBE: Okay. Next slide is very, very
14 busy. I could spend the rest of this morning
15 explaining it but again, Mr. Chapman lots of credit for
16 working on this. We benchmarked actually this with
17 some examples and it's - this has withstood the test
18 of 60, 70, 80 evaluations.

19 So I feel pretty good about this matrix and
20 it looks busy but there's - basically it's a two-step
21 process. In the column on the left it says current
22 risks associated with the issues.

23 You'll see the green, white, yellow, red
24 bands. That's consistent, again, with the
25 significance determination process. Remember I said

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1 order of magnitude.

2 So green represents less than ten to the
3 minus six change in core damage frequency. White is
4 ten to the minus six, ten to the minus five and so forth.

5 So in this two-step process if one just
6 wishes to characterize as best possible without running
7 through the whole PRA, I mean, they couldn't use the
8 PRA but first assign what is the existing level of risk
9 associated with a particular regulatory issue or plant
10 initiative and puts it in one of these three major
11 boxes, and if possible we've actually divide into three
12 categories or if it's not quartile it's tritile or
13 something - I don't know - within each color band and
14 says what's the existing level of risk associated with
15 this.

16 And then in the second step if I were to
17 implement a particular fix, and usually there's a good
18 enough characterization of what the plant modification
19 is, how much am I going to reduce that existing level
20 of risk associated with the issue.

21 If it's none and zero times anything is
22 zero - that's why you see it in the second column all
23 those very lows - I'm not getting any benefit, why am
24 I even doing this - to the other extreme, which is high,
25 which is greater than 90 percent reduction in the

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1 existing level of risk associated with that issue.

2 And the interesting thing about this is we
3 found in practice that generally they'll do an
4 evaluation and they may come up in some - one of these
5 boxes.

6 I'll just pick a - let's say this box, for
7 example - and the robustness of the process is - even
8 if risk was off by a factor of two or three it's still
9 within the same low category.

10 Or if their assessment of the risk impact
11 was off by some amount they'll find - you'll typically
12 find that they're still characterizing the risk
13 significance - the risk abhorrence the same.

14 And in some cases it might straddle, you
15 know, two importance categories in which case the
16 guidance says well, you go with the higher one if
17 there's any doubt, or if necessary go to step three
18 Bravo which is, you know, use your PRA and spend the
19 time and do a full quantitative analysis.

20 But in practice I think this matrix has
21 worked very well and it's very robust and we'll have
22 examples as the pilot plants get up here.

23 CHAIRMAN STETKAR: So, Richard, I hate the
24 notion of very low highs. So I started thinking in the
25 bottom of the pile, top of the pile, middle of the pile

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1 - that kind of stuff - because this already biases the
2 thought that everything is low or very low importance
3 to safety and there - it's a lot easier to get into those
4 very low and low categories.

5 In fact, I think it's too easy. But we'll
6 see how the pilots did.

7 MR. DUBE: You will be amazed how many came
8 out high.

9 CHAIRMAN STETKAR: Okay.

10 MR. DUBE: Okay. So I won't dwell on
11 that. You know, we're moving along.

12 MEMBER SCHULTZ: So we'll go into the
13 pilots and we'll get some examples but you just said
14 you'll be surprised how many came out high. Can you
15 give us a perspective on that?

16 In other words, in the experience with 80,
17 100 different elements of investigation most came out
18 high? Many came out high? A few came out high?

19 MR. DUBE: Normal distribution with highs
20 on the left and very lows on the right, yeah.

21 CHAIRMAN STETKAR: Well, it'd be
22 interesting. I'm aware - we'll see one that I sat in
23 on and zero came out high for that one out of six.

24 MEMBER SCHULTZ: That's what I'm trying to
25 get an appreciation for.

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1 MEMBER POWERS: I mean, it seems to me that
2 most things should come out low. I mean, the plants
3 aren't melting down like crazy.

4 MR. DUBE: I mean, there's selective
5 choosing here because anything high means that the
6 existing level of risk is greater than ten to the minus
7 four core damage frequency. So but it -

8 MEMBER SCHULTZ: But, see, what I was
9 reacting to you'd be surprised how many are high. That
10 was what I took from your comment.

11 MR. DUBE: I mean, no - let me rephrase
12 that. You would expect none but there were some. Let
13 me put it that way.

14 MR. BUTLER: There were a number of
15 mediums. Not a lot of highs but there were a number
16 of mediums and they were issues that you're not -
17 shouldn't be too surprised that they were mediums.

18 They were changes to address fire concerns
19 with, you know, NFP 805. They were changes to enhance
20 the RCP pump seals. So there weren't - at least I
21 wasn't surprised that they were ranked medium or
22 relatively high for those issues.

23 But by no means were they, you know,
24 majority of the issues. Majority of the issues were,
25 as you would expect, relatively low in importance.

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1 MEMBER POWERS: And it just seems to me
2 that the value of this process is exactly that. You've
3 got a lot of low things and you've got to prioritize
4 when you're going to deal with and the high stuff's
5 going to get - I mean, excuse people for human failure
6 - you know, not recognizing something is high and so
7 it's a good process to find things that are high.

8 But in general those things are going to
9 be taken care of and now you've got to - how low in the
10 low do I go and how do I order how to do that. That
11 seems to me the value of this.

12 MR. DUBE: Okay. I won't spend as much
13 time on security, emergency preparedness and
14 radiological protection but generally there's a nexus
15 with nuclear and public safety on these.

16 Security certainly, emergency
17 preparedness certainly, radiological protection maybe
18 more but personnel safety in many regards. These have
19 two-step processes - a little bit different than the
20 safety importance but they are a two-step processes.

21 We first use a flow chart to assign high,
22 medium, low, very low and step two is how effective is
23 the proposed measure to address and here we use a matrix
24 approach. I don't think we're going to go through
25 those but they are in the backup slides.

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1 MEMBER POWERS: I mean, it strikes me that
2 you made probably a correct decision for this pullout
3 date but we're going to have to come back to that because
4 there's a lot of innovation going on now in the
5 emergency preparedness effort and one cannot imagine
6 that the lessons of Fukushima will be ignored in that
7 area. At some point, we're going to have to go into
8 those kinds of things.

9 MR. BUTLER: I doubt that we - you know,
10 the charts that we have right now for EP and RP and
11 security they've changed during the - based upon
12 lessons learned during the pilot process and no doubt
13 they will change as we learn more. They are areas that
14 aren't quite as mature as our thinking on safety are
15 so -

16 MEMBER POWERS: I'm going through lots of
17 the ETE's and things like that and I at least am learning
18 a lot from going through those, and I know that the staff
19 is doing stuff in that area just going through the
20 analyses that have been done and I'm learning a lot of
21 about that.

22 Maybe the plants already know all this
23 stuff but I'm learning a lot and I know that the staff
24 - like I say, the staff's got a lot of work going on
25 in that area.

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1 CHAIRMAN STETKAR: How did you, in the
2 security area, have kind of longstanding interest in
3 this relationship between safety and security?

4 Did you find in the process that people
5 were struggling with that or did they tend to okay, this
6 is security so we'll put it in the security box and
7 evaluate it according to that and by definition it's
8 not safety?

9 MR. DUBE: No, because every issue goes
10 through all five importance. So you may have a pure
11 security issue or what you think is a pure security
12 issue but it will have to go through nuclear safety
13 evaluation, security, EP, radiological protection and
14 liability. Or you may have a - what you thought is a
15 pure reliability issue. It has to go through all five.

16 So any issue might start out as emergency
17 preparedness but will get evaluated for all five
18 categories. Now, there could be some overlap but
19 that's okay.

20 The way the priority scheme is is, you
21 know, you're not going to get double credit in the sense
22 that you take the highest importance of all of them and
23 with nuclear safety importance being one level above.
24 So yeah, there's overlap but I think that overlap works
25 fine.

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1 CHAIRMAN STETKAR: Okay. Good. Thank
2 you.

3 MR. DUBE: On the reliability importance,
4 I personally think this is one of the most important
5 categories that came up the first tabletop at Excel.
6 It's concerned with aging management, availability,
7 forced outage, power reduction, potential for reactor
8 scram.

9 We had right from the beginning examples
10 where very important equipment - it may not be your
11 emergency diesel generator, it may be something more
12 subtle like circulating water pump motor - but if that
13 pump motor goes certain times of the year you'll have
14 a reactor scram and it needs to get appropriate
15 attention.

16 So we added this category a little bit late
17 in the game but it turns out to be very important.

18 I think it's forward looking with regard
19 to the nexus with safety. We gave the example of the
20 reactor core isolation cooling, control replacement,
21 but there will be - you'll hear a number of other
22 examples where I think it's important that we give these
23 attention.

24 The nexus with safety is - as you're aware
25 there's a number of performance indicators under the

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1 reactor oversight process that measure everything from
2 unplanned scrams and unplanned power changes.

3 Yours truly is very involved with the - has
4 been involved with the mitigating system performance
5 index. That's another measure.

6 Exceeding a threshold in a performance
7 indicator could move a plant into a particular column
8 in the actual matrix and I think there's a strong
9 relationship between the reliability of SSC's and
10 safety.

11 So that's our justification for giving
12 this an important characterization.

13 MEMBER POWERS: A whole lot of this
14 rightly depends on expert opinion, and expert opinion
15 is borne of experience in the areas that I at least claim
16 some expertise. It's because I've screwed up things
17 in so many different ways that I know how you can screw
18 up.

19 It strikes me that one of the areas where
20 I at least have no expertise is in the area of external
21 events because they happen rarely. I stay away from
22 them when they do happen so I have no exposure to them.

23 How do you compensate for that or do you
24 suffer my failing of lack of expertise on the effects
25 of external events?

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1 MR. DUBE: Well, we do have a job aide in
2 there that says - at least asks the question of the IDP
3 in the subject matter expert to look at external events.
4 Fire, in some sense, is an - has been treated as an
5 external event, seismic flooding, what have you - high
6 wind.

7 They need to bring in the appropriate
8 subject matter expert and there's also members of the
9 PRA organization that sit in on the IDP and presumably
10 they have some external event familiarization. They
11 may not be the kinds of person we'd assign fragility
12 analysis in a seismic PRA but external events needs to
13 be considered.

14 MEMBER POWERS: But, I mean, isn't that
15 what you want is somebody with expertise in fragility
16 in the houses?

17 MR. BUTLER: I'll give an example of what
18 happened during the pilot, at least at one of the pilots
19 where they were looking at an issue and had - would have
20 - the seismic risk at the plant would have some impact
21 on the importance of the issue.

22 They went through their evaluation based
23 upon the information they had at that time but
24 recognized that they were in the process of
25 reevaluating the seismic risk at the plant.

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1 So they made an evaluation based upon what
2 they knew at the time but specifically put a note in
3 their evaluation that this be reevaluated, you know,
4 periodically once, you know, further information or
5 further development on the seismic PRA had been
6 completed.

7 So, again, it's a point in time based upon
8 the information they knew but they recognized that they
9 were lacking some information on the issue that would
10 be clarified sometime in the future and they just, you
11 know, made a point to circle back around and reevaluate
12 it when they had that information.

13 MR. CHAPMAN: Both the generic and the
14 plant-specific assessment process have an alternative
15 as follows. One is to develop additional information
16 if there's not adequate confidence in the outcome.

17 The other alternative is to engage the NRC,
18 and when we piloted a tabletop external flooding at the
19 NRC I think last - I think it was last year - December
20 of last year, we concluded the process worked because
21 on external flooding the NRC developed and put together
22 an expert team as did the industry and they worked on
23 an industry process.

24 They got our hands around that topic
25 because there's so much uncertainty, clearly, and it's

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1 all very, very plant and site specific. So the process
2 has it in there.

3 There's a confidence check and there's two
4 alternatives - do more analysis or engage the NRC before
5 you conclude that you have adequate confidence in the
6 outcome, and in the case of that particular pilot they
7 have action to do an update as they gain additional
8 information, correct?

9 So you'll find it in the process and I
10 agree, external assets can be a challenge, that's for
11 sure.

12 MEMBER POWERS: I mean, the problem is
13 that this is risk information and I'm not sure that we
14 have all the information you need here.

15 In particular, I look at the fragile - the
16 order of fragile things that were identified in the
17 IPEEE and make a noncomprehensive comparison to what
18 we observed at a variety of plants subjected to
19 earthquake mostly in Japan, and I don't see a great deal
20 of alignment there.

21 MR. BUTLER: Agree.

22 MEMBER POWERS: And I think it's an area
23 that deserves some more attention because, you know,
24 we may be protecting like crazy things that just never
25 fail in these seismic events and ignoring things that

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1 do fail.

2 We'll have to admit that by and large the
3 Japanese plants have done very well in these
4 earthquakes.

5 MR. DUBE: Okay. After all the
6 importance were determined for those five categories
7 comes time to assign a priority level.

8 Priority one are issues defined by the NRC
9 as adequate protection or if it's high for safety or
10 two or more highs for any of the other four categories
11 - security, EP, RP, reliability - priority two are
12 medium for safety or one high in the other four
13 categories or two or more mediums and so on and so forth
14 - priority three, four and five.

15 So a couple messages from this. First, we
16 toyed around with let's assign so many points for this,
17 so many points for that, and it got real complicated
18 real fast and you need an Excel spreadsheet to come up
19 with the answer.

20 So this is pretty straightforward.
21 Safety is the most important. Adequate protection is
22 the most important.

23 We do give, you know, consideration to the
24 others but generally speaking all things being equal
25 a medium for safety and a medium for radiological

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1 protection, the medium for safety kind of trumps it,
2 if you will. But there's a semi infinite number of ways
3 to do this.

4 CHAIRMAN STETKAR: Semi infinite?

5 MR. DUBE: Yeah. It's like on a
6 one-dimensional plane it's finite in one direction.

7 CHAIRMAN STETKAR: And infinitely - okay.

8 MEMBER BLEY: You didn't talk very much
9 about the security side of this and I guess there was
10 one thing that kind of bothered me on the flow charts
11 that you have in there, and that is wherever you get
12 to the point of saying should we care about this, what's
13 the chance this could have a negative impact - it's
14 would the issue result in core damage - would the issue
15 result in this problem instead of could or some
16 probabilistic thing of it.

17 So it seems like it invites people to say
18 gee, I don't think so and skip over some of those and
19 I don't - didn't look. I don't know if those showed
20 up in any of the tabletops.

21 MR. DUBE: You go to be careful on could
22 versus would and so on and so forth because of
23 safeguards issues. But it's part of the equation.

24 MEMBER BLEY: It just seems like it can let
25 you trip past these.

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1 MR. BUTLER: Well, I wouldn't be too
2 concerned about that aspect of the chart since it has
3 been revised and is no longer phrased in that way.

4 MEMBER BLEY: How is it phrased?

5 MR. DUBE: Do we have the most current?

6 MR. BUTLER: Yeah, actually it's at the
7 end of the presentation. Do you want me to go to it?

8 MR. DUBE: Skip ahead if we got time?
9 You've changed it, right? This is the revised?

10 MR. BUTLER: Yeah. First time in - we've
11 combined the cyber and the physical security into a
12 single flow chart and for the first time it addresses
13 whether or not it affects security key function.

14 If it doesn't then you go down and ask the
15 question on whether it's a administrative action and
16 that determines whether there's none or very low
17 security importance.

18 If it's yes to a security key function you
19 ask whether compensatory measures address the effect.
20 If yes you further ask if the compensatory measures can
21 remain in effect until the issue is or impact is
22 resolved.

23 If yes - and this is something we've added
24 based upon lessons learned from pilots - you look at
25 the cost - whether it's cost beneficial to maintain the

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1 compensatory measure.

2 If yes then you go to low. Every - if you
3 answer no to any of those diamonds you go and ask whether
4 or not if the issue is directly linked to a weakness
5 in target set protection. If no, you go to medium. If
6 yes, you go to high. So it's a much simpler chart.

7 MEMBER BLEY: Okay. Well, and that gives
8 you some focus better than the other one.

9 CHAIRMAN STETKAR: Yeah, that diamond on
10 the target sets gets it.

11 MEMBER BLEY: Yeah. Okay. I mean,
12 there's another nexus between safety and security that
13 you can't talk about much without getting into things
14 you can't talk about, I guess.

15 But that is - scenarios can be affected.
16 In-plant scenarios can be affected one way or another
17 but I guess as long as you have it tied to the targets
18 that's what - probably okay and that will at least flag
19 it to look into more detail with those issues. That
20 helps me.

21 MR. DUBE: So almost - I'm not sure if
22 we're close to the end of this presentation.

23 CHAIRMAN STETKAR: Yes. This is the end.
24 It's very close to the end.

25 MR. DUBE: So the whole purpose of this is

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1 to adjust the licensing and regulatory schedules. If
2 necessary a licensee can process an exemption request.
3 This is no different than current processes.

4 Any licensee can propose exemption or
5 waiver against current regulations but this gives a
6 little more perspective, if you will, and there's
7 guidance already for managing commitment changes, and
8 I think that's it.

9 CHAIRMAN STETKAR: Great. Members have
10 any more questions for the folks up front? What I'd
11 like to do, only because we're now going to start
12 getting into focus things, let me - Mike, can you open
13 up a bridge line?

14 I want to see - because if there are any
15 general questions or comments that we get from the
16 public. Does anybody in the room want to make any
17 comments about at least this level of presentation?

18 The problem is I don't know how much we're
19 going to get into proprietary information as we get
20 through the - I know we've got it structured that all
21 of the plant presentations are open but we could get
22 into a situation where we're open and closed and I don't
23 want to forget about asking for public input. We open?

24 PARTICIPANT: Yes.

25 CHAIRMAN STETKAR: If anyone is out there

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1 please do me a favor and just say hello or something.
2 We have an incredibly sophisticated system here where
3 I have no idea whether we can hear you. So is anyone
4 out there on the bridge line?

5 PARTICIPANT: Yes, I am.

6 CHAIRMAN STETKAR: Thank you very much.
7 Hi, Ruth.

8 PARTICIPANT: Hi.

9 CHAIRMAN STETKAR: Does anyone have any
10 comments at this point? If not, we'll open up the
11 bridge line later on. I just wanted to make sure, as
12 I mentioned, in case we get into this kind of
13 open-closed staccato that I didn't forget to ask for
14 input.

15 And if not, we'll reclose the bridge line
16 and, again, I promise we'll make sure we open it up for
17 comments later in the day. So thank you.

18 Mike, I want to make sure we got that
19 reclosed. And if there's no more comments on this
20 phase let's start to hear from the plants. I guess
21 Palisades is the first up. Is that true?

22 MR. SNODDERLY: Excuse me, John.

23 CHAIRMAN STETKAR: Yeah.

24 MR. SNODDERLY: This is Mike Snodderly
25 from the ACRS staff. It was my understanding that the

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1 presentations by industry starting with Mr. Miksa are
2 intended to be open.

3 CHAIRMAN STETKAR: Yes.

4 MR. SNODDERLY: So we're going to rely on
5 the licensees to tell us if we're - if in the questioning
6 we're starting to probe into areas that they believe
7 are crossing into unclassified safeguards of
8 information they let us know and then we'll close the
9 line.

10 CHAIRMAN STETKAR: Right. That's -
11 that's all.

12 MR. SNODDERLY: But right now we're going
13 to reopen the bridge line so people can listen and we're
14 going to rely on you guys to let us know when you feel
15 we need to close and we will do so. Thank you.

16 CHAIRMAN STETKAR: Yeah, that's what I
17 said. We have no problem closing the meeting. What
18 I - if you do - if we do have a line of questioning that
19 you feel was - is treading on proprietary or security
20 information just let us know that and at the end of your
21 presentation we'll close - we'll close the bridge line
22 and address those issues.

23 I don't want to go open closed, open
24 closed. Just let us know and we'll put it on the list
25 and close it.

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1 MEMBER BLEY: Before you go ahead, I just
2 wanted to follow up on an issue Dana raised about how
3 well many plants have dealt with seismic issues beyond
4 the design point and just point out that there was an
5 IAEA mission at the Onagawa plant after the big
6 earthquake, and Peter Yanev and a great number of other
7 people went with the IAEA.

8 But one of the big things they found was
9 how well things survived beyond where they were
10 designed including things that weren't designed to be
11 seismically capable. So it's worth taking a look at
12 that sometime if you're interested. It's IAEA 2012.

13 MEMBER POWERS: It is pretty clear to me
14 that we have - we may have margins that are
15 unanticipated and when you're in the business of
16 prioritizing activities that's a margin you need to be
17 aware of.

18 If we're relying on things of the vintage
19 of the IPEEEs I think we're looking at a fairly
20 anachronistic database and I think it would behoove us
21 well to more aggressively mine the information that's
22 come from some pretty substantial earthquakes, one here
23 in the United States and a variety of plants in Japan
24 that didn't undergo any core damage but certainly
25 sustained substantial seismic motions.

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1 Just to make sure our fragility
2 perceptions the mental rankings that we rely on and the
3 expertise we're relying on is in fact valid, of course,
4 the problem - you have a twofold problem using Japanese
5 data is they're Japanese designs and the seismic
6 motions are peculiar to those particular earthquakes.

7 CHAIRMAN STETKAR: Jim?

8 MR. MIKSA: Hi. Good morning.

9 CHAIRMAN STETKAR: Good morning.

10 MR. MIKSA: I'm Jim Miksa. I'm
11 representing Entergy Palisades and my current position
12 is the regulatory assurance engineer.

13 Palisades was a pilot plant for the
14 Cumulative Impact Task Force and myself I was the lead
15 at the site for this initiative and this initiative ran
16 from May through September of 2014.

17 So why Entergy, why Palisades?
18 Certainly, Entergy is very interested. We were
19 involved in the cumulative impacts initiative from the
20 start and when the risk prioritization initiative came
21 together and they were looking for pilot plants,
22 Entergy was more than willing to participate in this.

23 If you look at Entergy's corporation we
24 have ten sites, 12 different - 12 reactors. They are
25 both PWR - pressurized water reactors - and BWR -

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1 boiling water reactor - designs and we have also all
2 of the different NSSS designs from General Electric,
3 West Engineering, Westinghouse and B&W.

4 So we pretty much run the gamut. We
5 realized all our plants aren't created or designed
6 equally and different vintages. Also different
7 locations - we have plants in the Midwest, on the East
8 Coast and the South.

9 So we cover a majority of different regions
10 so this really was a good fit for us.

11 Why Palisades? If you look at Palisades
12 we have a lot on our plate. We're dealing with aging
13 management. We are in the period of our extended
14 operation, which ends in 2031, which brings along with
15 it different aging management plans like MRP-227.

16 We have LI 600 inspections that we're
17 required to do. We also are looking at adapting
18 several of the risk informing initiatives - NFP 805,
19 which is the risk informed fire protection program, and
20 we're also doing a risk initiative for our GSI-191
21 containment sump.

22 So that's some examples of some of the
23 items we have going on and we also are dealing with the
24 emergent industry issues with Fukushima and open phase
25 events.

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1 So we are trying to manage our resources
2 and prioritize correctly. So once again this was a
3 good fit for Palisades as it was for Entergy because
4 we have a lot on our plate.

5 How did we apply the pilot at Palisades?
6 First we started out with subject matter expert
7 selection. We had 12 different subject matter experts
8 involved for 20 projects.

9 We picked the most knowledgeable
10 individuals at the site. They were design engineers,
11 system engineers, information technology engineers and
12 project managers.

13 So there's a large gamut of individuals
14 that were involved in this and people that don't
15 typically look at things from a risk perspective. So
16 we'll get that as one of the insights we have from this
17 is extending the risk knowledge to other people at the
18 plant.

19 IDP, the integrated decision panel
20 selection, we had 11 members. It was chaired by the
21 director of Regulatory Assurance and Performance
22 Improvement.

23 We also had senior station managers from
24 engineering, project management, security, radiation
25 protection, regulatory assurance and production outage

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1 and then additionally we had a senior PRA engineer on
2 the panel and our equipment reliability coordinator.

3 So I want to make sure we covered all of
4 the topics that would have nexus to this pilot.

5 CHAIRMAN STETKAR: I didn't hear the word
6 operations.

7 MR. MIKSA: Yes. Our senior manager of
8 operations was involved -

9 CHAIRMAN STETKAR: Okay. Thank you.

10 MR. MIKSA: - on the panel. Several of
11 them had SRO or past SRO experience, like myself. So
12 we had at least four or five panel members with previous
13 SRO or current SRO experience.

14 Training - we conducted training at the
15 site. We took NEI's guidance for their training of the
16 generic panel. We adapted that to Palisades and we
17 provided training to all the subject matter experts and
18 all of the IDP panel members.

19 So everybody went through training and
20 then, additionally, prior to the actual IDP meetings
21 and aggregation meetings we had just in time training
22 to refresh everybody on the process to make sure we had
23 a good understanding of it.

24 MEMBER SCHULTZ: Jim, so the training was
25 on the process or was there a set of information that

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1 was also provided related to risk evaluation and other
2 activities associated with risk prioritization?

3 MR. MIKSA: What I - what I did at
4 Palisades, because I was aware that not everybody was
5 as informed on risk assessment as others, was during
6 the training slides I created, let's say, a diary or
7 glossary of PRA terms to kind of breach discussion
8 topics during the training.

9 So we kind of went through what I call a
10 basic PRA glossary of terms and had the discussions on
11 what things like risk significance importance meant in
12 that. And then we also had the PRA individuals
13 involved to help in that discussion during the
14 training.

15 MEMBER SCHULTZ: And the training time
16 B- give us some appreciation for what that involved in
17 terms of an activity of one of the individuals on the
18 IDP?

19 MR. MIKSA: It was a six-hour training
20 session.

21 MEMBER SCHULTZ: Okay.

22 MR. MIKSA: And -

23 MEMBER SCHULTZ: Without homework?

24 MR. MIKSA: Yeah.

25 MEMBER SCHULTZ: Or opportunity for study

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1 I presume in terms of -

2 MR. MIKSA: Absolutely. The materials
3 were provided ahead of time.

4 MEMBER SCHULTZ: Okay.

5 MR. MIKSA: The guidance documents, and as
6 we get into all the evaluations that were done the SMEs
7 were given to the panel ahead of time so they had plenty
8 of time to review and get ready and prepare for the types
9 of questions they may have during the review meetings.

10 MEMBER SCHULTZ: In terms of
11 the member selection, how would you characterize the
12 experience level of the 10, 12 people that were on the
13 team?

14 MR. MIKSA: On average, 20 years or more
15 experience in industry or at the site. We had
16 individuals like myself with over 28 years experience
17 at the site on the panel.

18 We had those that had experience in other
19 places in the industry. So on average I'd say probably
20 about 20 years experience.

21 MEMBER SCHULTZ: Thank you.

22 MEMBER BLEY: I'd like to probe a little
23 deeper on the training. We didn't talk to the first
24 panel about this and it probably should have come up
25 then.

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1 There's another aspect of training I'm
2 concerned about. Dana talked a little bit about what's
3 meant by expertise for people who are on expert panels
4 and, certainly, that's the technical side of the
5 expertise.

6 There's another side of - that it's where
7 very experienced people often go wrong and that's the
8 process of processing how likely things are and for
9 going beyond long-term experience.

10 I haven't seen that in 20 years. I dismiss
11 it. I'm more interested in things that don't happen
12 in a thousand years of experience. So people have to
13 be conditioned to think beyond their own experience.

14 They've seen a lot of how things work and
15 how they don't work but we're looking to - on each of
16 these questions to think about how could this affect
17 things in ways that we might not have seen but that we're
18 prepared to think about.

19 Does the training dig into this for the
20 expert panels, how to avoid the bias problem of real
21 experts - technical experts - who aren't experts in
22 thinking about likelihood and uncertainty and what
23 might be here and what might not be here?

24 MR. MIKSA: Our experience was that the
25 training touches on it. But until you actually get

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1 into the panel discussions and you have - and the
2 subject matter expert who may be his only project - it
3 may be the biggest thing in the world to that subject
4 matter expert - but when you start asking different
5 questions from different disciplines with different
6 backgrounds and experience you start to realize or we
7 start to realize that there is other importances out
8 there that this can be compared to as a relative
9 importance to what is going on.

10 So I guess going back to your question I
11 think you can only touch on that in training. You can
12 kind of give them the concept in training.

13 But until you actually start going through
14 the discussions in a panel setting is where you really
15 start to get into how probable is this and how does that
16 impact the overall importance of it based on a
17 probability.

18 MEMBER BLEY: One thing we could go into
19 is what are those biases and how do they affect you so
20 that you can think about avoiding them.

21 MEMBER POWERS: In my mind, the best
22 exercise in the move of training nonexperts simply go
23 through and say what does ten to the minus four CDF mean
24 for a hundred plants operating for 40 years. There's
25 a one third chance of core damage of that and that

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1 exercise is illuminating.

2 MEMBER BLEY: I think it is. It's one of
3 the places you can go wrong.

4 MEMBER POWERS: I mean, yeah. I mean, you
5 do just exactly that, what you said. I haven't seen
6 this at our plant ever and that gives me a good .05
7 probability.

8 CHAIRMAN STETKAR: But to a lot of people
9 .95 percent chance is it will never happen.

10 MEMBER POWERS: That's right. That's
11 right.

12 CHAIRMAN STETKAR: Ninety-five percent
13 chance it'll never happen is never.

14 MEMBER SCHULTZ: Could you describe the
15 site lead training that you utilized?

16 MR. MIKSA: The actual lead training that
17 occurred at the NEI offices it was, I believe, a setting
18 that was put together for the generic assessment team
19 type members and kind of just essentially went through
20 the process of B-

21 (Simultaneous speaking.)

22 MEMBER SCHULTZ: Is it on process or is it
23 on facilitation?

24 MR. MIKSA: It was on process.

25 MEMBER SCHULTZ: Okay.

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1 MR. MIKSA: Yeah.

2 MEMBER SCHULTZ: And in terms of
3 facilitation and ability to orchestrate the panel
4 through the process of the investigation, was training
5 provided there or was there an expected -

6 MR. MIKSA: No. It was more of -

7 MEMBER SCHULTZ: - assignment that the
8 individual that had that capability?

9 MR. MIKSA: Other than the individuals
10 that were involved as far as picking who would be
11 probably the best person at the site to facilitate it,
12 there wasn't - there was not any specific guidance or
13 discussion on what traits it would take or how to
14 facilitate.

15 We did lean on each other as pilot members
16 talking to the other - that's the - going to observe
17 I went and observed Robinson's pilot and aggregation
18 before we did our pilots and aggregation. So that was
19 very helpful in me in how to facilitate.

20 CHAIRMAN STETKAR: That's - and that's a
21 good comment. One would think that we have a lot of
22 experience now with expert felicitations and training
23 of the facilitators - selection and training of the
24 facilitators is a really important part of that
25 process. I'm kind of surprised that the guidance

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1 doesn't stress that.

2 MEMBER SCHULTZ: And I'm also - I'm also
3 thinking of whether you may have used a skeptic - you
4 know, someone on the team that was not - someone not
5 part of the team that could, you know, ask some probing
6 questions that the team may not think about because of
7 their focus on their expertise.

8 MR. MIKSA: We did not per se have a
9 devil's advocate but I will say there was a lot of
10 questioning of this process, what value it was going
11 to add at the beginning by quite a few members and I
12 think at the end they were all - everybody was really
13 happy with what the actual insights were we got out of
14 it.

15 MEMBER SCHULTZ: There's the - yeah,
16 there's the aspect of questioning the process and then
17 within the process making sure the right questions get
18 asked through - bore down toward the right results.

19 MR. MIKSA: Right. And I think that was
20 kind of - tried to cover by the different departments
21 and different groups represented at the panel site.

22 So our schedule, once again, May through
23 September. In May, we did the site lead training.
24 Project selected Palisades. Picked 20 projects out of
25 about a list of 200 we currently have in our asset

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1 management plan. Really, our focus was to select
2 projects that would best exercise the process.

3 In doing that they weren't always the one
4 that may at the end add most value to us as far as further
5 action goes. But we really focused on what would best
6 exercise the process.

7 So we looked at things that would maybe
8 fall into safety - nuclear safety, emergency planning,
9 radiation protection, security, reliability - tried to
10 exercise as many categories as we could.

11 So in that respect, some of the projects
12 we actually evaluated were ones that were - already had
13 resources committed to already scheduled to be
14 implemented and so at this point some of those, even
15 though they may be a lower priority, we're going to end
16 up going forward with them just because to take the
17 resource off them now would not be of value.

18 With that, one of our first projects I have
19 three examples here today. The first project - one of
20 the first projects we looked at was incipient
21 detection. This is part of our NFP 05 license
22 amendment.

23 It's a modification at the plant as part
24 of that. It's a very early warning fire detection
25 system which is meant to detect fires prior to them

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1 causing any type of damage, hence the incipient name.

2 We looked - it's going to be installed in
3 what we call our high risk areas for electrical fires
4 and another part of this is going to replace our
5 existing fire alarm control panel.

6 So that the key here it allows detection
7 of a fire condition and acting against that prior to
8 having damage to other associated equipment. That's
9 the key to this project.

10 The first step is we go through the safety
11 - nuclear safety importance. Overall, the result of
12 this was a medium and we're going to walk through the
13 steps on how we got to medium for this.

14 Step one is any impact and of the five
15 questions we answered yes to any impact for question
16 one. In question one - reducing the risk of a
17 significant accident initiator - so for us the ability
18 to detect the fire before it causes damage to adjacent
19 equipment reduces the frequency of what we would
20 consider a risk-significant fire.

21 In additional, it improves defense in
22 depth and this is - incipient detection is an automatic
23 detection and it's in defense in depth towards
24 automatic suppression or mainly detection so it's a
25 defense in depth - those two other items.

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1 So those are the two areas where we found
2 any impact. With that, we go on to step two. In step
3 two, we're looking for more than minimal impact and we
4 answered yes to question one for more than a minimal
5 or discernible - in this case, discernible difference.

6 So our ability to detect a fire before it
7 impacts other equipment has a direct effect on our core
8 damage frequency, and having a more than minimal as far
9 as allowing detection for defense in depth we
10 determined that this was less than minimal because it
11 improves the function of detection versus the - of
12 automatic.

13 We also have additional defense in depth
14 so there was not a discernible difference here from a
15 defense in depth perspective of how we evaluated this
16 because of the other automatic fire suppression and
17 manual detection. So we already had two defense
18 in-depth methods. Improving a third defense in-depth
19 method wasn't considered, to us, discernible.

20 So then that leads us to step three and this
21 was a qualitative approach we used for this project.

22 The issue risk level was considered high
23 and this was based on our insights from our PRA - fire
24 PRA personnel - and it's essentially allowing an NFP
25 805. If you can limit your damage to a certain fire

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1 area your risk of core damage goes down significantly.

2 So by having this early detection system
3 we can limit our fire damage to one fire area or even
4 before it damages adjacent equipment and that versus
5 having it spread throughout the whole room creates a
6 significant advantage to us, as fire is our core damage
7 frequency. So that's why it was rated high for that
8 aspect.

9 CHAIRMAN STETKAR: Jim, you said this is
10 qualitative but you also mentioned that your PRA people
11 used fire risk assessment. Could you explain a little
12 bit more what that means?

13 MR. MIKSA: When they're creating the
14 model for the fire - for our fire model, having the model
15 in it with this incipient detection that limits it to
16 this fire area versus not having it in the model is where
17 you get the significant impact on core damage.

18 CHAIRMAN STETKAR: Okay. But I guess
19 what I'm asking is did they actually do that type of
20 Delta and explain it to the IDP so that they - so that
21 the other folks on the panel could understand
22 quantitatively what that might be? Where did -

23 MR. MIKSA: They discussed a - in this
24 particular project they discussed it qualitatively on
25 the panel versus quantitatively.

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1 CHAIRMAN STETKAR: Palisades does have a
2 fire risk model?

3 MR. MIKSA: We're just finalizing it as
4 part of our LAR submittal.

5 CHAIRMAN STETKAR: Okay. Okay. Thank
6 you.

7 MR. MIKSA: And then the other projected
8 risk reduction here is 90 percent based on the ability
9 to detect a fire in its incipient stage. As far as
10 detection or prevention goes it's a high rating because
11 of the ability to protect adjacent equipment.

12 So going forward, we then go into the table
13 to determine the importance of - for this category and
14 presented the table with the red lower bound and you
15 have a high effectiveness. You end up with a medium
16 overall importance rating in this category of safety
17 for this project.

18 CHAIRMAN STETKAR: I guess one of the
19 reasons I was probing is how did you - I mean, if you
20 had determined that it was a red medium this would have
21 become a high and it strikes me that by a qualitative
22 assessment it's really difficult to differentiate
23 within those high, medium and low or upper bound medium,
24 lower bound on the left column.

25 Could you explain - maybe I missed it.

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1 Could you back up in how you determined that it was the
2 red lower bound rather than all medium without any
3 quantitative information or what level of - I mean, why
4 were you very confident that it was in that lower bound?

5 MR. MIKSA: There was information given by
6 the - our PRA folks to support that lower bound and they
7 do have the actual numbers that were submitted with our
8 LAR - our license amendment request - as far as what
9 our current plant is versus the future plant and a PRA
10 risk-informed program. So they did it -

11 MEMBER BLEY: It kind of smells like
12 qualitative means, not doing any modeling.

13 CHAIRMAN STETKAR: It smells like
14 qualitative means not doing any modeling at all.

15 MEMBER BLEY: Yeah, but it's -

16 MR. MIKSA: In this case, there is - there
17 is quantitative input into that value.

18 CHAIRMAN STETKAR: Okay.

19 MR. MIKSA: And I really don't have all the
20 insights with me today of the model itself and -

21 CHAIRMAN STETKAR: Okay.

22 MR. MIKSA: - the values.

23 CHAIRMAN STETKAR: One of the things that
24 I mentioned I think we asked each of the groups was I
25 wanted to probe this, you know, the use of qualitative

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1 versus quantitative risk information throughout this
2 whole process because initially part of this initiative
3 was to more directly use the risk models and the risk
4 insights to help inform at least this process, not
5 necessarily lead the process because not everything can
6 be quantified, obviously.

7 So that's why I'm probing a little bit in
8 terms of this qualitative versus quantitative
9 information.

10 MEMBER BLEY: You could help us understand
11 this a little by telling us a little more. In your
12 fire model, do you have incipient detection included
13 in any form?

14 MR. MIKSA: In our future. We have -
15 currently we have detection in our current - like, our
16 current state - our current plant has detection. In
17 our NFPA fire model - our LAR state going forward we'll
18 have fire detection and co-compliant fire detection
19 which this will be and then if you can - there's also
20 an additional credit you can take for incipient
21 detection.

22 MEMBER BLEY: So to pick this as red lower
23 bound you make some assumption of what - I mean, say,
24 full credit for incipient detection could do to your
25 results and is that how you came up with that red lower

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1 bound or what -

2 MR. MIKSA: Essentially what we do is we
3 said that without detection - without co-compliant
4 detection -

5 MEMBER BLEY: At all?

6 MR. MIKSA: - at all, we're here.

7 MEMBER BLEY: Okay.

8 MR. MIKSA: If we apply incipient, which
9 is also co-compliant detection, we're here and that
10 Delta gives us that red significance that - the
11 improvement.

12 It was very simple. We didn't spend a lot
13 of time and resource to do that for the pilot. But it
14 -

15 MEMBER BLEY: But I assume some
16 effectiveness for the detection.

17 MR. MIKSA: Right. But it's kind of a
18 very conservative and global perspective on without and
19 with and what that would do to our PRA number.

20 MEMBER BLEY: I'm not sure what
21 conservative with respect to with means. Does that
22 mean the maximum change you can get or the minimum
23 change?

24 MR. MIKSA: The - assuming that we have no
25 detection is the worst.

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1 MEMBER BLEY: That I get. Yeah.

2 MR. MIKSA: Assuming that we have a
3 detection system is the - is the best.

4 MEMBER BLEY: And that has to have
5 associated with it some idea of is it going to
6 absolutely take care of the fire and detect it or it'll
7 be, you know, effective with some probability. At
8 least that must have been in the -

9 MR. MIKSA: Yeah, that was in - that's in
10 the - that is in the model. I don't have those values.

11 MEMBER BLEY: Okay.

12 MEMBER SKILLMAN: Let me follow up on that
13 -

14 MR. MIKSA: Sure. Mm-hmm.

15 MEMBER SKILLMAN: - Dr. Bley's question.
16 The 90 percent that you award yourself is dependent upon
17 the reliability of that system.

18 The 90 percent that you award yourself is
19 dependent upon the reliability of that system. You
20 only get that high reduction if you know for certain
21 that that detection system is going to signal you an
22 incipient level of an emergent fire.

23 MR. MIKSA: We looked at it in that respect
24 from no detection to a detection. So it's more of not
25 detecting anything versus incipient.

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1 MEMBER SKILLMAN: But when you take credit
2 - when you take credit for the risk reduction you are
3 assuming that that device or series of devices are
4 reliable.

5 MR. MIKSA: Right. We're assuming from a
6 co-compliant perspective that that device will be -
7 yeah, at least 90 percent.

8 MEMBER SKILLMAN: Does that suggest that
9 when you award risk reduction of that magnitude that
10 the device or the SSCs that are involved in that string
11 are a specified quality or a maintenance rule or
12 maintained in accordance with a certain level of
13 pristine condition?

14 MR. MIKSA: In this case it would be what
15 would be required to maintain its code compliance. So
16 the code compliance of the equipment would be what you'd
17 have to file to maintain its code of compliance. Is
18 that -

19 MEMBER SKILLMAN: I hear the words.

20 MR. MIKSA: Yeah. I just -

21 MEMBER SKILLMAN: I don't - I kind of come
22 from that school when we do 50.59s there's a lot of
23 subjectivity in saying yeah, this is certainly - by
24 answering the question this way I get this outcome and
25 it's a templated process to come to an answer.

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1 One could say by golly, if I have this
2 system I'm good to go. On the other hand, there are
3 a lot of applications where there have been incipient
4 fire detection systems that fail, and unless it's
5 understood the degree to which that incipient fire
6 detection system is being cared for and maintained,
7 tested, confirmed fit for duty, your assumption can be
8 inaccurate.

9 MR. MIKSA: And that is one of the
10 assumptions of processes. That's - there's a new - a
11 brand new system that would be maintained and would
12 always maintain function.

13 This isn't something we've installed yet
14 at the plant so this would be a brand new system
15 installation. So I guess it would be an assumption to
16 this input is that that would be maintained.

17 So I'd say it wouldn't have, as it goes on
18 in life, have an increased chance of failure - risk of
19 failure. That's one of the underlying assumptions
20 here.

21 MEMBER SKILLMAN: Thank you.

22 MEMBER SCHULTZ: The title of the risk
23 reduction chart says - and maybe this is cleverly chosen
24 - the potential impact - the potential impact. So it
25 does give some latitude to talk about how the system

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1 might function and perhaps lean toward an optimistic
2 interpretation of its functionality.

3 MR. MIKSA: Yeah. So for us, we're
4 looking at it from a non code-compliant system to a code
5 compliant system. So it's like having nothing to
6 having something.

7 Now, if that something isn't reliable or
8 not a good choice or has a history of failure, that would
9 have to be modeled into that choice.

10 But we assumed a brand new system would be
11 highly reliable and test - we actually did a test of
12 the system at the site and had good results with it.

13 MEMBER SCHULTZ: Perhaps what you're
14 saying too or what we're saying here, Dick, is this
15 discussion prompts the understanding of the team that
16 it has this potential and it may influence that team
17 going forward to try to demonstrate or try to maintain
18 the capability of the system in that - in that box -
19 in that range of operation.

20 MR. MIKSA: And our design processes at
21 the plant go through to ensure that we put in adequate
22 industry-recognized good quality systems. So for this
23 process we assume that the system we're putting in
24 functions and that's going to be maintained.

25 CHAIRMAN STETKAR: John.

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1 MR. BUTLER: Yeah. I'll just - let me
2 help Jim out a little bit. As Don pointed out earlier
3 this morning, this chart is very valuable in that it
4 is forgiving of uncertainties.

5 So if there is some uncertainty on how
6 reliable the system will be, you can evaluate that by
7 looking at whether it will be, you know, highly reliable
8 greater than 90 percent or if its effectiveness is in
9 medium, small or very small, and in the case of the
10 incipient detection system it's not going to change the
11 answer of being a medium whether it's high or medium
12 or small.

13 So there's some - you know, those type of
14 discussions were engaged during the IDP meeting and a
15 lot of them were addressed by looking at what's the
16 impact of - we're a little bit off here by - off by a
17 order of magnitude or off by, you know, a whole lot here.
18 How does it change the answer? In many cases, it really
19 doesn't change the answer.

20 MEMBER SCHULTZ: That's right. So what
21 you see here is that you're well within the medium
22 category.

23 MR. MIKSA: Correct, and if we apply this
24 consistently to all our projects with the same
25 assumptions -

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1 MEMBER SCHULTZ: That's right.

2 MR. MIKSA: - you're going to find out that
3 this is of relative importance. It's not an exact
4 number. It's relative, and relatively speaking,
5 compared to all our other projects you can find out this
6 rings very high at Palisades compared to a lot of our
7 other projects because of this.

8 That's really the value that we found is
9 the relative importance, not the exact value. So for
10 this project, if you go forward looking at importance
11 of evaluations for the other categories, all of the
12 other categories came out with the importance ranking
13 of none.

14 If you look through, there's no specific
15 nexus to security with this system. It does have a
16 digital capability but it's air gap to all of our other
17 systems and doesn't really have a control function and
18 we assume that all the cyber controls would be applied
19 to that digital asset for the controls.

20 CHAIRMAN STETKAR: This - and again, once
21 we come close or step over the line just tell us.

22 MR. MIKSA: Mm-hmm.

23 CHAIRMAN STETKAR: This implies that the
24 fire risk assessment does not address security systems.

25 MR. MIKSA: I can't - I guess I can't

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1 answer that question directly. In this - in this
2 perspective there - as you go through that security flow
3 chart you could get to a point where you're impacting
4 target function.

5 CHAIRMAN STETKAR: The reason I ask is
6 some of the questions we were asking earlier is that
7 a full scope fire risk assessment will look at fire
8 damage to security systems in addition to the
9 traditional PRA stuff and that's particularly
10 important, for example, if that fire damage prevents
11 access to areas that you may be taking credit for in
12 the fire risk assessment.

13 And occasionally you find some interesting
14 combinations of fire damage to cables or cabinets
15 because of the location of the security systems that
16 might prompt incipient detection in security because
17 a fire in a particular area might cause not only safety
18 but combined safety security issues.

19 So that's why I'm trying to probe whether
20 any of that thought process went in here because you've
21 now said well, this doesn't have any effect on security.

22 Well, in a fire risk assessment it might
23 and that security effect might have a secondary effect
24 on safety or a direct effect on safety.

25 MR. MIKSA: I can say electrical sources

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1 to security are looked at secondary impacts.

2 CHAIRMAN STETKAR: Okay.

3 MR. MIKSA: So I guess -

4 CHAIRMAN STETKAR: Again, we don't want to
5 get into where things are -

6 MR. MIKSA: Yeah, there's - yeah.

7 CHAIRMAN STETKAR: - where things are in
8 Palisades. Okay.

9 MR. MIKSA: But I will say that that is -
10 that is part of my -

11 CHAIRMAN STETKAR: Okay.

12 MR. MIKSA: Emergency planning - since
13 this consistent performance is more of a preventive
14 function versus mitigative function there is no real
15 nexus to emergency planning, just detection system, and
16 radiation protection is still carried outside the RCA
17 - RCA and no direct impacts to radiation protection
18 programs or effluence.

19 And then reliability - the onus of this
20 project was not to improve reliability and it really
21 had no - it's a new system to Palisades so no real
22 improvement. We wouldn't see any improvement in
23 reliability. The current detection system we have
24 has been reliable.

25 MEMBER BALLINGER: With respect to the

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1 emergency planning side, you say it doesn't affect -
2 it's preventative as opposed to mitigative.

3 If you do have a fire or an accident of some
4 kind, wouldn't this system actually help you with the
5 mitigative function as well because it gives you a look
6 ahead in some areas where if you have a fire that's
7 spreading or something like that?

8 MR. MIKSA: Well here, again, it would
9 prevent us from ever getting to a point where we'd be
10 in the e-plan perspective. So -

11 MEMBER BALLINGER: Okay.

12 MR. MIKSA: - so you're really looking at
13 the front. This is really more in the front end
14 prevention before you even get into an area where you
15 need to get into emergency planning.

16 MEMBER BALLINGER: But it's still
17 operating continuously, right?

18 MR. MIKSA: Yeah.

19 CHAIRMAN STETKAR: Once you have the fire
20 it either alerted you before the fire started or it
21 didn't.

22 MR. MIKSA: True. But if it's spreading
23 - well, never mind.

24 MEMBER SKILLMAN: I'd like to follow up on
25 that because Ron's right. Say you're at Palisades and

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1 you begin to get this detection.

2 On the one hand, perhaps it spared you an
3 unusual event because it's going to put you in EP if
4 you get a fire. To what extent is the value of
5 avoiding an unusual event considered?

6 So I agree, it doesn't impact the emergency
7 plan per se but it is - it provides a mechanism to
8 prevent from getting deeper into your EALs.

9 MR. MIKSA: Again, that's - and, you know,
10 and we're looking at direct discernible effects with
11 what we have now versus this new system. So our current
12 system versus this new system, is there a discernible
13 difference in that ability?

14 MEMBER SKILLMAN: What is the value of
15 avoidance is really what I'm suggesting.

16 MR. MIKSA: And I look at that as covered
17 more in the safety - the nuclear safety perspective as
18 the avoidance and that's an additional avoidance.

19 But anything that would highly impact
20 nuclear safety would more than likely probably get you
21 into an unusual event of the EP plan.

22 So our interpretation of the guidance is
23 that it's more geared towards the actual emergency plan
24 process and mitigative functions of the E plan and the
25 safety functions - the CDF, the LERF and then the

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1 consequential things that come along with that - like,
2 if you have an event that would impact nuclear safety
3 the consequences of that you're also going to have an
4 unusual event - a site area emergency, what that goes
5 with it. So we're looking more at the actual project
6 benefit, not the consequences of it.

7 MEMBER SCHULTZ: Consequences to the
8 emergency plan exercise?

9 MR. MIKSA: To the emergency plan
10 exercise. It's more of what's the first direct impact
11 to the - the project has. In this case, the more direct
12 impact is on the nuclear safety perspective, not on the
13 consequences if it were not to be successful.

14 MEMBER SCHULTZ: Thank you.

15 MR. MIKSA: So the results of incipient
16 detection then as we go through the NEI priority came
17 out as a two. A Palisades project priority came out
18 as two and we'll discuss a little bit more in the future
19 slides on how we got to a two.

20 The NEI process priority it's easy to go
21 through the slides and present it earlier and you come
22 up with a medium. In the nuclear safety category you
23 end up with a priority two. That's right in the
24 guidance.

25 Then for Palisades what we do is you look

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1 at all the projects that came up with a priority two
2 and then you rank them. In this case, we had four
3 priority two projects.

4 This came out number two out of the four,
5 and I have more slides to discuss that in the future,
6 how we did that. Looking at it from a scheduling
7 perspective, the NEI process schedule would have this
8 around June 2016.

9 Our project schedule is current for
10 October of 2016 and one of the actions we're taking out
11 of this is to look at the ability to move this project
12 up, this importance in schedule, working with the
13 project manager to do that.

14 CHAIRMAN STETKAR: Let me ask you kind of
15 as a follow-up to where I was probing with the folks
16 who are up front earlier, what - you said the NEI process
17 priority came out two in this example. Your own
18 internal evaluation also put it in the number two bin.

19 What benefit did you have from the generic
20 evaluation of this? In other - or let me ask you in
21 a more pejorative way. How strongly were you
22 influenced by that NEI process priority?

23 MR. MKSA: In this case, well, the NEI
24 process priority is strictly per the guidance. You
25 have your five categories.

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1 CHAIRMAN STETKAR: Yeah. Mm-hmm.

2 MR. MIKSA: As far as the generic, we - the
3 generic has input to this but in this - for this
4 particular project since we're into the 805 process we
5 really relied on our subject matter experts and our PRA
6 experts who've been doing this for the last six or seven
7 years to give us this input.

8 So the generic piece of this was really,
9 I'd say, small for Palisades in this perspective -

10 CHAIRMAN STETKAR: Thank you.

11 MR. MIKSA: - from our experience.

12 MEMBER SCHULTZ: I took your - we'll go
13 through this with others. So just to be clear here,
14 I took your second bullet to be the Palisades project
15 priority is the ranking of this project with respect
16 to all of those others - four - that were ranked two
17 under the NEI process priority.

18 MR. MIKSA: Correct. So we have 20 -
19 yeah.

20 MEMBER SCHULTZ: Just to clarify that.

21 MR. MIKSA: That's correct.

22 MEMBER SCHULTZ: So -

23 MR. MIKSA: That's correct.

24 MEMBER SCHULTZ: So this gave you an
25 opportunity then to evaluate this project in relation

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1 to the other three in that category two - priority two?

2 MR. MIKSA: Correct.

3 CHAIRMAN STETKAR: But just to be clear,
4 this project priority was number two out of the five.
5 Jim - it just happened to be also number two out of the
6 four other twos or the - right?

7 MR. MIKSA: Correct. Yeah, there's four
8 projects that came up with the NEI process priority of
9 two.

10 MEMBER SCHULTZ: Right.

11 MR. MIKSA: And based on the evaluation of
12 those four this one landed as number two during the
13 aggregation meeting.

14 MEMBER SCHULTZ: I understand. Yeah.

15 MR. MIKSA: It'll be clear when you see our
16 list of ten of them or 20 of them.

17 MEMBER SCHULTZ: Yeah. Yeah. Sure.

18 CHAIRMAN STETKAR: Let's - are we done
19 with incipient detection?

20 MR. MIKSA: Done.

21 CHAIRMAN STETKAR: Let's - only because
22 I'm obviously under the weather here and we know I'll
23 need a break, let's take a break now until 10:35.

24 (Whereupon, the above-entitled matter
25 went off the record at 10:21 a.m. and resumed at 10:37

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1 a.m.)

2 CHAIRMAN STETKAR: Let=s get restarted
3 here and hear about the second issue.

4 MR. MIKSA: The second issue that
5 Palisades was evaluated was open phase. This was
6 driven by the Byron event. It installs an open phase
7 monitoring and isolation system on our start-up
8 transformer and our safeguards transformer. It=s
9 detecting an open phase condition on the high sides of
10 our transformer busings.

11 And at Palisades our insulators aren=t
12 similar to Byron. So it=s not susceptible to that
13 exact same failure. And we also use as an input a
14 generic industry probability risk assessment for the
15 open phase condition event. And that was very low.
16 And by input we considered that information. We
17 actually performed a risk assessment on this project.

18 One thing to know about Palisades is about
19 several years, probably more than five years ago, we
20 installed a separate underground feed from our switch
21 yard from a separate bus back to our safety-related SME
22 transformers. We actually have an overhead feed from
23 a one bus in our switch yard and we have an underground
24 feed from a second bus in our switch yard. And our
25 switch yard has several different lines, several

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1 different station lines, going into it. So there=s a
2 lot of robustness at our switch yard and from our risk
3 perspective we improved our -- or to prevent a loss of
4 offset power by adding two separate feeds to our safety
5 buses from the switch yard. So that=s specific to
6 Palisades. It=s kind of important as we go through
7 some of this risk assessment information.

8 CHAIRMAN STETKAR: Jim, before you -- I=m
9 going to keep probing on this qualitative
10 risk/quantitative stuff. I=ve seen some numbers
11 thrown around. I=m not sure that I would call it a
12 probabilistic risk assessment. But I=m curious.

13 You said there=s a generic industry
14 probabilistic risk assessment that determined there=s
15 a very low probability of this type of event occurring.
16 What is very low probability and what do you mean by
17 this type of event?

18 Open phase events have occurred. I mean
19 they=re countable numbers of events. So to say it=s
20 very low is not like getting wacked by a meteorite for
21 example.

22 MR. MIKSA: Yes, I think that bullet is not
23 worded very well. I think that was the generic
24 assessment at NEI of this issue. And it came out an
25 importance of very low. So it=s not that. And there

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1 was some basis during that generic assessment team work
2 for that very low. But that very low is meant to be
3 the generic assessment that we did in May at NEI on this
4 issue came out an importance of very low.

5 MR. DUBE: Can I? This is Don Dube. Can
6 I just clarify that? The generic assessment expert
7 team and I was a member actually came up with a range
8 depending on the configuration. So it may have been
9 very low for a configuration like Palisades. But like
10 Byron would have -- It was somewhat higher.

11 CHAIRMAN STETKAR: I was going to say.
12 This is very dependent on the actual bus configuration
13 of the plant.

14 MR. DUBE: Yes, it was. And we can as an
15 action item if necessary send you the generic
16 assessment for open phase. But it spans a spectrum.

17 CHAIRMAN STETKAR: Actually, Don, if it=s
18 available, we are actually having -- Dennis, I don=t
19 remember the date -- another subcommittee meeting.

20 MEMBER BLEY: There=s a meeting in two
21 days in which this issue comes up and then two weeks
22 from now on Monday there=s one just on the open phase.

23 CHAIRMAN STETKAR: Right.

24 MR. ZOULIS: This is Antonios Zoulis. We
25 issued a summary of the demonstrating pilot test

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1 Friday. I gave it to Mike. In that summary there=s
2 a reference to the MO numbers for the generic
3 assessments. So they=re available on ADAMS for your
4 access.

5 CHAIRMAN STETKAR: Thank you. We can
6 just skip the point, not just so much for two days from
7 now but for the two weeks meeting. We=ll get it.
8 Thank you.

9 MR. MIKSA: So we go forward and we go to
10 the first category of safety. Step one we=re looking
11 for any impact. In here, we had a yes answer for
12 question two because impacts, the availability of the
13 system, structure and component. The application here
14 is that if you have an open phase that=s undetected you
15 could have equipment out there for an extended period
16 of time that=s unavailable that you=re not aware of.

17 MEMBER BLEY: Can you damage equipment?

18 MR. MIKSA: There is a potential to damage
19 equipment. In this case, looking for any impact, we
20 said yes. There is a potential to impact equipment.

21 MEMBER BLEY: Okay.

22 MR. MIKSA: And then also other questions
23 we looked at is there an ability to impact the
24 availability of personnel and here we answered that
25 subbullet as a yes also because if people are taking

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1 their time to troubleshoot this issue it takes
2 resources away from other things that might be used
3 going on in the plant at the time. So the ability to
4 improve their troubleshooting and make it easier for
5 them to determine the condition would improve their
6 availability. So there=s an impact there.

7 And then reliability of personnel, it
8 makes the troubleshooting, getting to the right answer,
9 finding the exact issue, more reliable in that
10 perspective. Those are the types of things we looked
11 at from an impact on safety.

12 Going to step two then, we=re looking for
13 more than minimal. In all three of those areas, it was
14 determined that there was a discernable improvement in
15 equipment availability, personnel availability and
16 personnel reliability. And the focus here was on more
17 so the detection at Palisades than the isolation. The
18 ability to detect had more discernable value than the
19 ability to isolate.

20 CHAIRMAN STETKAR: How did you -- Maybe
21 you can help me. You just said that you emphasized the
22 detection rather than the automatic isolation. Does
23 that -- I mean that seems to me to presume that people
24 will behave perfectly once they have the alarm.

25 MR. MIKSA: One of the conditions is to

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1 have a standing open phase condition that goes
2 undetected for a longer period of time. And so if that
3 has a way of being detected and from the current
4 perspective if I find something that=s been in that
5 condition for 30 days, I take a bigger hit on
6 availability than if I find it=s been that way for five
7 minutes.

8 So that=s discernable difference in
9 equipment availability. If it takes me a week for a
10 troubleshooting team to determine I have an open phase
11 condition on this component versus an hour that saves
12 me personnel and resources. That=s the discernable
13 piece and how it goes onto the next risk assessment
14 portion.

15 MEMBER SKILLMAN: How is failure of the
16 detection and isolation circuitry considered in this
17 calculus?

18 MR. MIKSA: The actual failure of it?

19 MEMBER SKILLMAN: Yes. So you put in this
20 system. Expectations are high. This is going to save
21 us resources. This is going to save us maintenance
22 rule down time on this equipment. And that=s good
23 stuff.

24 But what happens if it doesn=t work? What
25 happens if it doesn=t function exactly as you intended

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1 or worse it mysfunctions causing I guess it would be
2 isolation of these circuits, these transformers, and
3 maybe unavailability of equipment that is dependent
4 upon those transformers for their basic operation?

5 MR. MIKSA: Obviously, if it doesn't
6 function at all, we're not better off than we are today.

7 MEMBER SKILLMAN: Well, what if it
8 mysfunctions?

9 MR. MIKSA: That=s the second piece. If
10 it mysfunctions, then there a new probability of a risk
11 significant event you just started based on that
12 failure. What=s the consequence of that failure?

13 MEMBER SKILLMAN: And how is that
14 considered here?

15 MR. MIKSA: That=s considered as a
16 negative impact of this project. And it goes on to the
17 reliability section of a misfunction.

18 MEMBER SKILLMAN: But is it part of this
19 evaluation?

20 MR. MIKSA: Yes.

21 MEMBER SKILLMAN: It is.

22 MR. MIKSA: Yes, it was considered a part
23 of this evaluation. When we go through the actual file
24 importances are based on the positive aspects of the
25 project. But we also note any type of potential

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1 distractions.

2 In other words, it=s not an accounting of
3 this much positive and this much negative equals out.
4 It=s this is the positive impact and then these are the
5 other considerations for the IDP members to take
6 account for when they go through aggregation and
7 prioritization.

8 MEMBER SKILLMAN: Thank you.

9 MR. MIKSA: And that comes into play on our
10 actions coming out this evaluation. It=s directly
11 related to that where we get a lot more value out of
12 the detection than isolation. And why isolation for
13 us isn=t important and may actually have a negative
14 impact to us.

15 MEMBER BLEY: Something wrong mentioned
16 to me earlier. Assuming there=s not some direction
17 from the NRC on one of these issues we=re looking at,
18 does this process flag at any point if something is
19 significant enough to report to the NRC?

20 MR. MIKSA: The process really isn=t meant
21 for that.

22 MEMBER BLEY: It=s just a more
23 prioritization.

24 MR. MIKSA: Certainly, that=s my every day
25 at work as an employee. If I come across something that

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1 appears to be not within a regulation or in a license,
2 I go through our processes to determine if it=s
3 reportable or not. Certainly, a question could come
4 up that could lead to that. But that=s not the intent
5 of the process.

6 Going on to step 3B then, we did do a
7 quantitative assessment. The quantitative assessment
8 came out with a green (VL) mid level CDF. It improved
9 our CDF by 2.5 E-7 value.

10 Some of the assumptions that went into the
11 modeling of it was that the initiating event frequency
12 for loss of offsite power was increased based on the
13 frequency of open phase events occurring in the
14 industry. So it took that into account.

15 And event representing consequential open
16 phase condition occurring during plant response for all
17 other initiating events was incorporated into the
18 model. Possible common cause contributors from open
19 phase conditions and multiple sources was considered.
20 And minimal credit was given for operator actions to
21 diagnose and mitigate the open phase conditions.
22 Those are some of the assumptions that went into
23 determining the overall importance of Palisades.

24 MEMBER BLEY: I guess so far operating
25 history with these events would say that=s not a

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1 conservative assumption much unless we change how we're
2 trying to identify these things. We've only had a
3 handful of these events. But when we've had them,
4 they've been hard to spot in the past where we've had
5 systems became detected.

6 MR. MIKSA: True. I think the
7 consequence of that based on a robust system or system
8 design at Palisades is less. We did increase the
9 frequency of that event, the loss of offsite power,
10 based on current industry experience. So current
11 industry --

12 MEMBER BLEY: Yeah, but it's a really
13 different event than the loss of offsite power.

14 CHAIRMAN STETKAR: Yes. See, this is a
15 little bit, Jim. Here is the first place that we've
16 seen any numbers. And to me it's a very stylized
17 number. You've run a number through a risk model that
18 on the surface sounds like it's conservative. We
19 assume we've lost offsite power.

20 But indeed that's not the way these events
21 manifest themselves. And yet in the fire area you said
22 we really didn't have a risk model for that. So we
23 couldn't model that. So we used qualitative things.
24 And to me this is not necessarily a reasonable
25 quantitative assessment.

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1 MEMBER BLEY: Kind of a parallel to me
2 would be if you look at loss of instrument error and
3 it goes away all at once. Well, not much happens. I
4 mean you=re designed to handle that. But in those odd
5 cases where it=s gone away very, very smoothly really
6 weird stuff has happened to plants. We=re designed to
7 lose offsite power. But up until now we haven=t been
8 designed to have an open phase condition which under
9 the right or wrong set of conditions could actually
10 damage equipment that we might want to work later. So
11 they=re not the same thing.

12 MR. MIKSA: Right.

13 CHAIRMAN STETKAR: But modeling it is a
14 clean loss of offsite power.

15 MR. MIKSA: Right.

16 CHAIRMAN STETKAR: It goes from suddenly
17 pure white to pure black if you want to do that.

18 MEMBER BLEY: We=re built for that.
19 Right.

20 CHAIRMAN STETKAR: That=s not surprising
21 that that=s small.

22 MR. MIKSA: Right. There=s another
23 probability on top of that.

24 CHAIRMAN STETKAR: Right.

25 MR. MIKSA: Of actually having an open

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1 phase.

2 CHAIRMAN STETKAR: But my point is that
3 this looks like it=s very quantitative because the PRA
4 people did what they thought they could easily do. And
5 they said that=s conservative which it may not be. And
6 in the fire stuff, it=s not clear how you address that
7 quantitatively.

8 MEMBER BLEY: It might be that that=s more
9 quantitative.

10 CHAIRMAN STETKAR: It might be. That=s
11 right. Because it=s a lot easier to figure out when
12 I burn up a certain cabinet if you have that model.

13 MR. MIKSA: A perspective is when you=re
14 looking for relative importance. So unless there is
15 a significant error in how these assumptions were put
16 in or the fact that we missed the point altogether,
17 relatively speaking this process still should come out
18 with a proper ranking.

19 CHAIRMAN STETKAR: One would hope. I
20 mean I think that=s part of this pilot process. It=s
21 to test that resilience of the process.

22 MR. MIKSA: Yeah. And as one PRA person
23 would tell me, sometimes it=s not so much about the
24 exact number you=re getting. It=s the insights you=re
25 gaining and the discussions you=re gaining at the site

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1 based on the ability to impact risk and nuclear safety
2 and these other categories. Sometimes we get caught
3 up too much in the actual numbers and things. That
4 number right, wrong, not.

5 CHAIRMAN STETKAR: Okay.

6 MEMBER SKILLMAN: It seems to me that a
7 number of the comments around the table here are pointed
8 to the value of having one or several contrarians as
9 part of your assessment team, folks who just at least
10 initially are not convinced that the brand new gizmo
11 is going to do exactly what it=s supposed to do without
12 unintended consequences.

13 At least in my career we=ve learned time
14 after time that we=ve had the best of intentions and
15 we=ve failed to find some slight detail. Or
16 configuration control has not been as robust as it needs
17 to be. Or we=ve made an assumption that was not a very
18 good one and we let ourselves get steered in a direction
19 that we shouldn=t have let ourselves get steered in.
20 So having those kinds of contrarians or some
21 challengers on the team is really important.

22 MR. MIKSA: I agree. We haven=t been in
23 engineering projects before. Myself, my personal
24 experience has the same exact experience. And we
25 always used to have the same change is not always good

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1 in fact. So I think having experienced people have
2 been there and seen that can play the contrarian
3 viewpoint.

4 I guess I would agree with that comment.
5 I thought our panel had that contrary person on there
6 just because of our experience, just because we've
7 lived through all the modifications that didn't exactly
8 go as what we thought how they would go and the impacts
9 of that.

10 MEMBER REMPE: When you have these
11 exercise evaluations, do you notify the regional office
12 and do they send someone to observe? Or how do the
13 regional office representatives interface with this
14 process?

15 MR. MIKSA: Certainly, right now the way
16 the process is written, they would only interface when
17 it got to the point of doing some type of submittal to
18 change something. However, as part of the pilot, we
19 communicate to our residents at the site. We
20 communicate to our region. And we did have region
21 representatives both at the SME meetings and the
22 aggregation meetings. So they were present at both.

23 MEMBER BALLINGER: Back to the contrarian
24 part, is the process robust enough do you think that
25 if you were to -- this is like a Gedanken experiment

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1 -- If you were to have two different panels deciding
2 the same thing but they don=t talk to one another, would
3 they come up with the same answer?

4 MR. MIKSA: In some respects we have six
5 different pilot plants do this.

6 MEMBER BALLINGER: Some of these are
7 specific to the plants.

8 MR. MIKSA: True, true. But certainly
9 you have two different people in two different areas
10 looking at two different things there is a potential
11 for them to come up with something different. Right.
12 But if I think you look across the board at the pilots
13 and issues that were similar, you=ll see similar
14 answers where they were similar and answers where they
15 weren=t. And where they weren=t, they=re
16 explainable.

17 I think like John mentioned that=s the
18 important part. If there are differences, is there a
19 real reason for it? Or is it just that the panel looked
20 at differently? I think we had good results. And I
21 think John will talk about that.

22 MEMBER BALLINGER: Sometimes it=s the
23 outliers that are actually the most important.

24 MR. MIKSA: But at least this process
25 gives you a platform to discuss that. There is no

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1 process out there to discuss any of this right now.

2 CHAIRMAN STETKAR: Yeah, I was going to
3 say. When we look at the similar issues among the three
4 pilot plants.

5 MEMBER BALLINGER: Yeah, I was looking
6 those. But I was curious about in a given plant.

7 MR. MIKSA: Even in our plant, we don't
8 have a process like this to discuss to these types of
9 questions on risk and impact to projects.

10 MR. ZOULIS: Antonios Zoulis. I just
11 wanted to give you a little perspective of what we saw
12 throughout this demonstration pilot on this particular
13 subject. One thing, the generic assessment evaluation
14 team, one of its key functions is to bring out the key
15 characteristics of an issue, identify what are the
16 important drivers and present that in the evaluations.
17 When the plant IDP conducts its evaluation, they could
18 use that information to assure that they're in the right
19 ball park and kind of avoiding that they're too far off.

20 The second point, we observed multiple --
21 and Jim I think participated in a couple and the NRC
22 participated in many IDP evaluations and there was that
23 contrarian view in some of the panels where they did
24 ask what are the adverse impacts. And the process does
25 lend itself well to that to make sure that the action

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1 that you're proposing you are considering the adverse
2 effects. You are looking at whether or not the issue
3 is actually addressing the problem.

4 And if you look at the flow chart, if you're
5 doing something that's small or minimal, that's your
6 key that the panel should say, "Why are we doing that?
7 Our fix should be more much effective. Or maybe we're
8 not doing the right thing to correct this issue." The
9 process does have those kinds of aspects to it. Thank
10 you.

11 MR. MIKSA: So taking the information and
12 going into our table for our step 3B we come up with
13 a green midlevel band with a high potential to resolve
14 the issue, giving us a very low from a safety
15 perspective category of importance.

16 The other categories, security, the system
17 did not impact physical security barriers or cyber
18 systems. Emergency planning, the system performs.
19 Once again, this is more of a preventive function than
20 a mitigative function. Radiation, all these areas
21 identified are outside our radiation control areas.
22 And reliability, it's a new system. But under
23 reliability this is where we have the negative
24 potential impact of a fault isolation would cause an
25 event at the plant.

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1 Scheduling, this was the NEI process
2 priority came out as a four. Our Palisades project
3 priority came out as an 18. Currently, NEI would have
4 scheduled this in 2018 for their guidance. Our
5 schedule currently is for May of 2017. And one action
6 that came out of this is to evaluate submitting an
7 exemption for the isolation function and to maintain
8 the monitoring function.

9 CHAIRMAN STETKAR: I was I think educated
10 a bit on the last slide for the incipient fire detection
11 and about the two and two there. Could you explain a
12 little bit better the four and the 18 here? And how
13 that relates to the schedule that was assigned, the site
14 schedule?

15 MR. MIKSA: Absolutely.

16 CHAIRMAN STETKAR: Unless it=s easier to
17 wait until we get to the integration part.

18 MR. MIKSA: I=ll do a short piece here and
19 then we=ll discuss more in detail when we get to
20 integration. The NEI process priorities for this is
21 for the Palisades specific project.

22 So our evaluation, our specific
23 evaluation, came out with in this case a very low in
24 safety importance and none for the other four
25 categories. If you take that outcome and you put into

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1 the guidance document it will give you a priority. And
2 that=s what the four is. It=s a four priority.

3 Once Palisades has gone through all their
4 20 projects, we=ll end up with more than one that=s a
5 priority four for NEI guidance. You=ll see an overlap.
6 So what the aggregation panel does is it takes all of
7 the priority four items and gives them a relative
8 ranking in between. Once you do that and you add that
9 with the other twos, threes that came out of our pilot
10 out of 20 projects that we looked at Palisades, this
11 was number 18 for relative importance.

12 CHAIRMAN STETKAR: And why since it=s so
13 low is it May 2017 as opposed to November 2018?

14 MR. MIKSA: May of 2017 is for the project
15 because currently in progress this goes back to how we
16 applied and picked our projects at Palisades. So this
17 is well along the design phase way. If this had been
18 done earlier, it may be different.

19 MEMBER SCHULTZ: So that=s a point of
20 information really where you stand with it.

21 CHAIRMAN STETKAR: A point of
22 information. It=s already started, under way, might
23 as well finish it.

24 MEMBER SCHULTZ: Okay.

25 MR. MIKSA: Exactly. The resources are

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1 already spent. The design is essentially done.

2 MEMBER BLEY: I would assume your last
3 bullet as at least envision the argument about the
4 negative effect of isolation when you don=t need it.

5 MR. MIKSA: Correct. In Palisades
6 specific design.

7 MEMBER BLEY: Despite what I said earlier,
8 open phase can in fact damage equipment badly. But
9 from the events we=ve had, I don=t think we=ve had any
10 cases of that as other industries have.

11 MR. MIKSA: Project three, this is for our
12 Bravo cooling towers. We have two cooling towers at
13 Palisades. This project will be to rebuild the bravo
14 cooling tool. It=s a wood structure. It=s been 37
15 years in service. The standard expectancy for Redwood
16 towers is 20 years. We have been maintaining it and
17 doing inspections.

18 There are certain parts of the tower though
19 that aren=t easily accessible to inspect. So
20 therefore that gives us an increased risk of failure
21 in those areas because they=re highly loaded. And we
22 cannot inspect those areas.

23 We already have replaced our alpha tower.
24 The alpha tower was seeing some bowing. And so we
25 proactively replaced that. And bravo tower is now

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1 exhibiting some of that also.

2 MEMBER BLEY: I'm just curious. When
3 you've replaced the alpha, did you find some
4 degradation in places you couldn't inspect that was
5 significant?

6 MR. MIKSA: Nothing more significant that
7 we found on it otherwise.

8 MEMBER BLEY: That you had found
9 otherwise.

10 MR. MIKSA: Yes. The other piece of this
11 is we did use industry experience from Vermont Yankee,
12 one of our sister plants, that did have a collapsed
13 tower. So that fed into this.

14 We went to the safety, step one for safety.
15 The outcome was very low. Step one we looked at impact
16 on reducing the frequency of risk significant accident
17 initiator. This case failure of the tower or a cell
18 would lead us to an unplanned power reduction. That=s
19 how that created any impact.

20 And then also we checked yes for
21 improvement of defense in depth because the circulating
22 water system also acts as a heat sink via the condenser.

23 CHAIRMAN STETKAR: But you didn't
24 quantify this one?

25 MR. MIKSA: Correct. This is

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1 qualitative, not quantitative.

2 CHAIRMAN STETKAR: Okay.

3 PARTICIPANT: Before you leave that.

4 MR. MIKSA: And we=ll see this in the next

5 --

6 CHAIRMAN STETKAR: Let me ask this.

7 MR. MIKSA: Go ahead.

8 CHAIRMAN STETKAR: Of the three so far,
9 this one strikes me as the one that if you have any sort
10 of reasonable internal event, power operating PRA model
11 this is kind of no-brainer to quantify. Why didn=t you
12 do that?

13 MR. MIKSA: It was a step two. We don=t
14 get to step three in this case from a quantification
15 perspective. This step leads to a very discernable
16 impact.

17 CHAIRMAN STETKAR: Ah, so that the process
18 really doesn=t even suggest that you do anything
19 quantitative unless you get to step three.

20 MEMBER BLEY: This isn=t a quantify if you
21 can. It=s a quantify if you need to.

22 CHAIRMAN STETKAR: Quantify if you need
23 to, okay.

24 MR. DUBE: This is Don Dube of Erin
25 Engineering. That=s correct. It=s a progressive

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1 screening to maximize efficiency.

2 CHAIRMAN STETKAR: Even if the
3 quantitative information could affect your decision
4 early on.

5 MR. MIKSA: And that=s where IDP panel
6 members with PRA members would be important. If that
7 individual representing PRA at that panel knew that
8 there would be more of an impact than what this
9 screening came up, that would be his opportunity to say
10 we need to take this back and actually invoke it in our
11 PRA.

12 And going back to Don=s question, our PRA
13 resources at the sites are very important to us and very
14 limited and very stretched as far as what the projects
15 they have going on right now. So having a screening
16 process helps us, too, so that everything doesn=t have
17 to go through them if things don=t have an impact.

18 MEMBER BLEY: But they have a presence.

19 MR. MIKSA: Yes, they have a presence at
20 the end in the final approval if there=s something the
21 subject matter expert missed in his evaluation.

22 MEMBER SKILLMAN: Isn=t there an element
23 that=s missing here? I would think your operators
24 would have had real heartburn with the logic of the
25 second bullet or what is the fourth bullet. I would

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1 think they would have preferred to use condenser dump
2 valves as opposed to atmospheric dump valves or main
3 steam safety valves. I would have thought they would
4 have fought tooth and nail and say, AHey, no way. I
5 want that cooling tower repaired because I=m dependent
6 on using circ water for heat removal.@

7 MR. MIKSA: And now we come to the
8 reliability section. When we get to the reliability
9 category, they=ll have a lot of voice in this. And
10 that=s why this ended up being ranked very high on our
11 list of things to do.

12 MEMBER SCHULTZ: Alright. And continues
13 to move through the rest of the process. Right.

14 MR. MIKSA: Yeah.

15 MEMBER BLEY: I=m a little confused
16 because I thought you didn=t go further than this.

17 MR. MIKSA: There are five different
18 categories. This is just the safety category.

19 MEMBER BLEY: Oh, that=s right. Yes.

20 (Simultaneous speaking)

21 MEMBER SKILLMAN: I would have thought the
22 -- would have said, ABy golly, you might not think it=s
23 safety. But I sure do.@

24 MR. MIKSA: From a core damage
25 perspective/PRA perspective is what this looks at.

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1 From a reliability perspective and challenging the
2 operators, the reliability section gets into it.
3 That=s the importance of the reliability section. A
4 lot of things at the plant that if they were to fail,
5 the operators would have a hard time responding to and
6 are very passionate about those items. Not all those
7 items are directly related to minimizing core damage
8 frequency though.

9 MEMBER SKILLMAN: I understand the words,
10 but I=m certainly uncomfortable with what that points
11 to.

12 MR. MIKSA: Okay.

13 MEMBER SKILLMAN: I understand what
14 you=re saying.

15 CHAIRMAN STETKAR: Let Jim get to the next
16 slide.

17 MR. MIKSA: From a safety perspective, you
18 go to step two and you see if there=s a discernable
19 difference. And in step one from a transient
20 perspective, we said that there was not more than
21 minimal. Giving our operator training, the ability
22 for operators to train and respond to a loss of
23 condenser vacuum and the chances of -- And the
24 probability of the tower more likely failing the
25 one-cell failure versus an entire tower failure. So

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1 when you look at it from that perspective, you can not
2 have a more than discernable impact on the ability to
3 create a reactor trip type of significant, a transit
4 that couldn't be handled by the plant.

5 And then also if --

6 MEMBER SKILLMAN: You're going to get a
7 trip if you lose vacuum.

8 MR. MIKSA: If you lose vacuum. If the
9 operators respond from a tower type section failure and
10 we have a second tower, we have the ability to respond
11 to that before vacuum is lost.

12 MEMBER SKILLMAN: You can run back quickly
13 enough.

14 MR. MIKSA: We've had several examples
15 over our history at the plant. We've lost a cooling
16 tower pump. And our ability to run back to the unit
17 and maintain condenser vacuum will not trip.

18 MEMBER SKILLMAN: Okay.

19 MR. MIKSA: And we train on that. It's in
20 our AOP procedures. There's a lot of robustness to
21 that.

22 MEMBER SKILLMAN: Thank you.

23 MR. MIKSA: And then question five from a
24 defense in depth because of our other duplicate ways
25 to remove heat via steam dump valves, main steam relief

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1 valves. Once through cooling, there is not more than
2 a discernable difference from a heat sink perspective,
3 loss of heat sink perspective.

4 So looking at the next importance
5 evaluation that actually came out ranked in here was
6 reliability. And that was ranked as a high. And step
7 one here again is any impact. And what we looked at
8 was the risk of the failure. And based on industry
9 experience and plant specific experience with the alpha
10 tower and age, we thought there is an impact on a
11 potential for this to fail.

12 Replacement lead time impact, certainly
13 unexpected failure would result in a long-term project,
14 a minimum of three months to repair this tower at a
15 minimum. Reliability impact on the plant would be
16 required to run at a reduced power for a long period
17 of time during that repair. And then preventive
18 maintenance, right now from a maintenance impact
19 because the age of our tower our annual costs of
20 refueling quite a bit higher than if we were to maintain
21 a new tower. We're replacing a lot more members than
22 we typically would. Doing a lot more inspections than
23 we typically would with a new tower.

24 CHAIRMAN STETKAR: Jim, I set you up a
25 little bit. This really doesn't address Dick=s

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1 concerns which are real concerns.

2 MEMBER BLEY: The operation.

3 CHAIRMAN STETKAR: The operations part of
4 this. All of this stuff looks at more maintenance
5 plant reliability. It doesn't really address that
6 operations notion. The fact that the operators feel
7 more comfortable using the main condenser as a heat sink
8 than blowing the steam relief valves.

9 MEMBER BLEY: It would seem this is where
10 it would show up if the operations representative made
11 the argument. And one of the questions and I don't know
12 which question it would apply to.

13 MR. MIKSA: This is where the operator
14 would have input if this were to come out as maybe a
15 low reliability or it would come out as there's not a
16 concern for failure. Really the operator wants to know
17 if his tire is going to be there or not be there. As
18 long as the tire is there and it's functioning, he's
19 happy with that or he can live with that. It's going
20 to fail as a potential for to fail that's where he's
21 going to be concerned from the discussion we just had.
22 Right.

23 MEMBER BLEY: So he would have come in.
24 If this were rated low, he might come in and say, AWait
25 a minute. It shouldn't be low. You guys missed the

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1 boat.@

2 MR. MIKSA: And there were some examples
3 in some of the pilots I observed at Robinson where
4 operations would weigh on AThis is important equipment
5 to us.@ And that=s the value of having them on the IDP
6 panel.

7 MEMBER BLEY: So that comes in like a
8 review step.

9 MR. MIKSA: Yes, when we get to the actual.
10 Essentially right now we=re going through what the
11 subject matter experts put together on their desktop.
12 This information then goes in front of a panel.

13 MEMBER BLEY: Okay. So it would have come
14 up in the panel.

15 MR. MIKSA: The discussion. That=s where
16 it would be appropriate for that discussion to come up.

17 MEMBER BLEY: So I guess I missed the piece
18 of it. Essentially, one guy does this evaluation or
19 one guy does the reliability evaluation and one guy does
20 the safety evaluation.

21 MR. MIKSA: No. One person does this
22 entire evaluation.

23 MEMBER BLEY: The entire thing. So they
24 have to try to cover all the areas of operations,
25 engineering, maintenance, all of that.

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1 MR. MIKSA: Right.

2 MEMBER BLEY: And you fix any problems in
3 that when you get to the panel.

4 MR. MIKSA: Correct. They also go out
5 before. Obviously, they want to be accurate in what
6 they present to the panel. So they=ll go out and get
7 input from PRA and from other sources before it makes
8 it to the panel, especially if there=s a quantitative
9 approach to this.

10 MEMBER BLEY: That might be the place
11 where John and Dick are saying AI sure hope one of the
12 people they go to is somebody in operations.@

13 MR. MIKSA: Yes, absolutely. And if that
14 doesn=t happen during his evaluation, the stop gap is
15 the panel to catch it.

16 So going to step two for reliability, you
17 look at the time frame for action which in this case
18 is short for a predicted or a potential increase to
19 fail. And then you look at the consequence which is
20 a potential image out of grid in 60 days. And you put
21 that into a chart for reliability which is in the NEI
22 guidance. And the chart would give us the importance
23 value of high given that short time to take action and
24 the time frame to resolve consequence.

25 The importance evaluation other

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1 categories were none for security and emergency
2 planning and radiation protection. Our towers are
3 outside the protected area.

4 Prioritization and scheduling. This once
5 again the NEI process priority was a two. Our project
6 priority was a four. And in this case the NEI schedule
7 lined up with our current project schedule.

8 Now moving on to aggregation and
9 scheduling.

10 CHAIRMAN STETKAR: Where it all comes
11 together.

12 MR. MIKSA: Okay.

13 MEMBER BLEY: I don=t think it matters,
14 but I don=t quite get how NEI=s been a kind of generic
15 look and give a schedule that means anything to any
16 particular plant.

17 MR. MIKSA: Yes. The scheduling is
18 recommended based on the importance. And the concept
19 behind it is that things that are of higher importance
20 you should put your resources towards first so that it
21 comes sooner in the schedule.

22 MEMBER BLEY: And they have a standard
23 list that they=re looking at or something.

24 MR. MIKSA: They have some guidance in the
25 document. I have it in one of the slides up here. But

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1 it=s essentially put your resources on the highest
2 importance projects first and as you don=t have
3 resources --

4 MEMBER BLEY: Which is in fact plant
5 specific.

6 MR. MIKSA: Yes, it=s plant specific.
7 Exactly.

8 MEMBER BLEY: I just don=t quite get it.
9 If somebody wants to tell me why that NEI thing is.
10 John.

11 MR. BUTLER: This is John Butler. There
12 is some guidance on scheduling. But generally you do
13 priority one items first followed by priority two,
14 three and four.

15 MEMBER BLEY: I get all that. It=s just
16 coming up with a date. That seems kind of odd on a
17 generic basis.

18 MR. BUTLER: That=s where it becomes plant
19 specific. Something that has a relatively high
20 priority you may end up doing that after something with
21 a lower priority because of the availability of when
22 you can do that.

23 If it=s an outage specific item that can
24 only be accomplished in a specified outage, that=s
25 where you=re going to do it. And there may be earlier

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1 opportunities to do something with a lower priority.
2 So that=s all taken into account.

3 MEMBER BLEY: I=m going to ask you one
4 thing and then I=m going to come back to you later. Is
5 there anything in the NEI guidance because I didn=t read
6 that part that puts an aging component on scheduling
7 and priorities? You know, the longer you=re in queue
8 do you start becoming more important? Otherwise, you
9 may never get to it.

10 MR. BUTLER: This evaluation that we=re
11 going through is not something that would be static
12 where the result or given issue --

13 MEMBER BLEY: Right. But everything you
14 do and this falls off the list. So this kind of assigns
15 things to never get any done. What I was asking is are
16 there any things that sort of get ramped up just because
17 they=ve been there too long?

18 MR. MIKSA: And actually that=s one of the
19 lessons learned we have at Palisades. One of the
20 things we found in our aggregation was that we had a
21 project that had spare parts currently in stock. But
22 the minute you use some of those spare parts, the
23 project priority importance changes because now you no
24 longer have those spare parts. So we found a necessity
25 to put a trigger in there that when that spare part gets

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1 used you reevaluate and put this back through the
2 process.

3 The nice thing is you can pull this
4 evaluation out and you know what you did originally.
5 Then you can put it back through without having that
6 spare part available. And the importance changes. So
7 it gives you once again some structure to manage that
8 as the importance changed based on aging for our
9 failures.

10 MR. BUTLER: If you have a project that
11 continually ranks as very low, it should prompt a
12 discussion of why is that the case, is it likely to
13 change, what would have to change to make it a higher
14 priority.

15 MEMBER BLEY: There=s nothing in the
16 guidance though.

17 MR. BUTLER: Nothing in the guidance
18 because it becomes very plant specific.

19 MEMBER BLEY: I mean this comes to mind
20 because in a lot of computer systems historically when
21 you build them you build an aging component into things
22 that don=t have high priority. Eventually, they get
23 high enough priority that they get checked.

24 MR. CHAPMAN: I=m Jim Chapman,
25 Curtis-Wright. I want to make sure we=re on the same

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1 page on this slide. The first bullet says NEI process
2 priority. That=s the Palisades determined priority
3 using the NEI process. Correct?

4 MR. MIKSA: Correct.

5 MR. CHAPMAN: So it=s not a generic
6 priority.

7 MEMBER BLEY: Okay.

8 MR. CHAPMAN: The second bullet that says
9 Palisades project priority again is Palisades
10 specific. The third bullet that says --

11 MEMBER BLEY: Which must include things
12 that aren=t in the NEI evaluation.

13 MR. CHAPMAN: But none of these results
14 are the NEI evaluation. That=s the point.

15 MEMBER BLEY: I=m sorry. In the NEI
16 guidance.

17 MR. CHAPMAN: And the third bullet that
18 says NEI process schedule, that=s not a schedule that
19 was authored by NEI. That was the schedule determined
20 using the NEI process. And it just happened to
21 coincide with the previously determined schedule that
22 Palisades had developed. Correct?

23 MR. MIKSA: Correct.

24 MR. CHAPMAN: So this is all Palisades
25 specific. That=s the key point.

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1 CHAIRMAN STETKAR: Thanks, Jim.

2 MEMBER SCHULTZ: But the NEI process
3 schedule would have identified things like you=ve got
4 to get this done by the outage after next.

5 MR. MIKSA: Yeah, there=s guidance in
6 there.

7 MEMBER SCHULTZ: Because of what you=ve
8 determined from the elements of reliability.

9 MR. MIKSA: Where we=re at now is the
10 subject matter experts have done all of their -- They=ve
11 taken these 20 projects and done an evaluation on each
12 of these 20 projects. They=ve gone before a panel
13 board and the panel board approved the ratings, the
14 rankings, of importance to the projects.

15 So now you get into prioritization and
16 aggregation. The first thing that was done was we
17 assigned the NEI priority from the guidance. So the
18 guidance for the Palisades specific 20 projects, each
19 one got an NEI priority based on the guidance document.

20 Next we did a pairwise comparison between
21 NEI priorities. So we took the priorities that were
22 twos compared them to the threes, compared them to the
23 fours. The panel did just to see if anything stood out
24 as odd or didn=t really look like it matched up priority
25 wise.

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1 We did find one exception where we had
2 installation of a permanent reactor cavity fall
3 protection. The NEI guidance would have prioritized
4 that as a three. And in our aggregation discussions,
5 that three was based on the fact that there was a cost
6 benefit from a radiation perspective of dose savings
7 of doing the modification.

8 However, the guidance didn't give you how
9 much cost benefit. It didn't say if it was a small
10 amount or a large amount. In this case, it was a very
11 small cost benefit. Looking at the small cost benefit
12 from a radiation protection perspective and looking at
13 the other projects that were priority threes, we felt,
14 the IDP panel felt, and gave this a priority four
15 instead of a three. So we did change one priority out
16 of the 20 based on the independent review by the panel.

17 CHAIRMAN STETKAR: And none were
18 increased.

19 MR. MIKSA: Correct.

20 Next we went through a pairwise comparison
21 within the NEI priorities. So we took all the priority
22 twos and in this case we had four of them. And then
23 we ranked them based on their importance of those four,
24 looking at the individual evaluation input
25 information. So we assigned them a one through four

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1 and that=s where we got the Palisades project priority.

2 So four items came up as priority threes
3 or priority twos. Of those four, we ranked them one
4 through four.

5 MEMBER BLEY: And that includes safety and
6 reliability.

7 MR. MIKSA: Correct. It was based on all
8 five categories.

9 MEMBER BLEY: All five categories.

10 MR. MIKSA: And so then we did that with
11 the priority threes. There are three of those. So
12 they would have gotten a five, six or seven. We ranked
13 those a five, six or seven.

14 And then we went into the fours which was
15 there was a larger number of fours. So we broke those
16 up into which three we thought were the highest fours,
17 which we thought were the lowest fours. Gave them the
18 next sequential numbers for Palisades project
19 priorities. And then the middle ones we went through
20 and assigned priority based on what we thought were
21 importance.

22 MEMBER BLEY: Was there a pretty good
23 agreement how you did that?

24 CHAIRMAN STETKAR: Jim, how many fours did
25 you have total? Were there ten?

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1 MR. MIKSA: I would have to count. There
2 was quite a bit. There was like eight or nine out. I
3 don=t remember the exact number, but there was -- I
4 think there=s nine because three, three and three.

5 CHAIRMAN STETKAR: For the benefit of the
6 record and the subcommittee, I sat in on the integration
7 process. I took notes, but not many. And my notes
8 were on the pieces of paper that I couldn=t take with
9 me. So I don=t remember a lot of the details. But the
10 largest category was those fours.

11 MR. MIKSA: By far.

12 MEMBER BLEY: But back to what I asked you,
13 when you did the twos and the threes were you kind of
14 unanimous on the ranking of them, one, two, three and
15 four? Was there a lot of debate?

16 MR. MIKSA: Actually, there was quite a
17 bit discussion on some. But after the discussion,
18 there was unanimous agreement. Everybody was -- There
19 was a consensus as far as those make sense for Palisades
20 to be in that ranking of importance.

21 And then that was the Palisades priority.
22 And then finally we assigned scheduled completion dates
23 based on that priority assignment. I=ll talk a little
24 bit more about that later and how we came up with it.
25 The schedule completion dates, we actually divided the

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1 projects into outage and online. And we'll talk about
2 that on the future slide.

3 So this is just to repeat. You've briefly
4 seen this slide already today. This is taking each of
5 the 20 projects, went through this and based on the
6 outcome. Like priority two, if there was a medium in
7 safety, it was a priority two.

8 So this is what we applied to each of the
9 20 projects at Palisades. We applied this guidance to
10 come up with the NEI priority.

11 This is some examples. I didn't list all
12 20. This is nine of the projects. These are examples.
13 You can see the permanent fall protection moved down
14 below replacing refueling machine control consoles due
15 to aging. One driver for that was the reliability of
16 the consoles and also there was some dose savings
17 associated. Even though it may not be a large cost
18 benefit, there was some dose savings with having more
19 reliable refueling equipment. We saw two
20 opportunities there and that's why it fell above the
21 permanent fall protection which we downgraded from a
22 three to a four.

23 CHAIRMAN STETKAR: Jim, because it hasn't
24 come up earlier could you explain? In the category you
25 have regulatory and plant improvement.

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1 MR. MIKSA: Yes. As part of the pilot
2 project, we picked 10 projects that regulatory had some
3 nexus to regulation that was driving the
4 implementation. And we picked 10 projects that were
5 site reliability type projects for comparison
6 perspective.

7 And then the importance categories, you
8 can see a list of each of the five categories. The NEI
9 priority based on the guidance and then how Palisades
10 priority came out. And you can see they're rated from
11 the highest priority items at Palisades to just about
12 the lowest priority.

13 CHAIRMAN STETKAR: But again that
14 Palisades priority is just the rank order one through
15 20.

16 MR. MIKSA: Correct.

17 MEMBER SCHULTZ: In the earlier
18 discussion, Jim, you assigned the open phase detection
19 and isolation NEI priority as four. And it's listed
20 here as five. Is that a typo or?

21 MR. MIKSA: Must be.

22 MEMBER SCHULTZ: It's down at the bottom,
23 second from the bottom. Or has that changed for some
24 reason?

25 MR. MIKSA: No, it's very low. It should

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1 be a four. That=s a typo.

2 MEMBER BLEY: I=ve got a couple of
3 questions for you. The first is did this process lead
4 to any really significant rearranging of what your
5 original priorities had been. And how did you find
6 this process? Is it something you really think is good
7 for the plant continuing on?

8 MR. MIKSA: We have some future slides in
9 which we talk about the values and the benefits. The
10 short answer is yes, we did gain insights in rearranging
11 in importance of projects. The incipient fire
12 detection, I think that was a big one for the site to
13 know the importance of that from a security risk
14 perspective and moving that up. I think the open phase
15 perspective on keeping the monitoring, the trip
16 function, could have a negative impact. I think that
17 was a big learning for the site.

18 So I wouldn=t say that we rearranged a lot
19 of items. But there were certainly some items that we
20 benefitted from as far as -- And if you look at the
21 outcome, even though we=re far along in some of these
22 projects, a lot of the ones we=re far along with are
23 more towards the end versus up towards the top. So if
24 we had this a couple of years ago, the project we=re
25 working on today may be different.

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1 MEMBER BLEY: Yes. I understand. And I
2 guess I'm hoping everybody gives some thought to this
3 idea of aging of low priority items. If there's a
4 project for something that continually ends up at the
5 bottom of the list, either you might want to get rid
6 of the project because it's not something you want to
7 do or you have some long term thing. We can put it low
8 for now, but we definitely want to make sure it's done
9 within five years or ten years or something like that
10 such that eventually it starts moving up the list so
11 it gets finished.

12 MEMBER SKILLMAN: Jim, you made a comment
13 in the contest between the fall protection and the
14 refueling machine control consoles that the consoles
15 advanced in importance because of avoided dose. I
16 think avoided exposure.

17 MR. MIKSA: That was the consoles had a
18 nexus to avoiding exposure also. But really that was
19 ranked higher because of the reliability.

20 MEMBER SKILLMAN: Okay. Where I was
21 going though is is exposure avoidance a consideration
22 for the radiation protection evaluation.

23 MR. MIKSA: Yes. And that's where the
24 personal fall protection came in for radiation
25 avoidance. It was rated a medium by the process

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1 because it was a cost benefit from a dose savings
2 perspective. But if you look at the dose savings, it
3 wasn't a magnitude there. It was a very low cost
4 benefit for such a very high.

5 Relatively speaking, it wasn't a lot of
6 dose savings, enough to gain it a medium. There wasn't
7 enough to have a cost benefit. But it wasn't
8 significant.

9 Wherein, the refueling machine console it
10 didn't have enough radiation dose savings to trip and
11 have a cost benefit just for that. So that was rated
12 as a none. But it did have a low in reliability. So
13 there is a combination of you gaining reliability and
14 your saving dose, wherein that one project you're
15 essentially just saving dose.

16 So it's the ability to when you get into
17 the aggregation to look what was rated in each category.
18 But then there are other items to consider where you
19 can spend more resources. And if you have all priority
20 fours, that would be a reason to put one above another.

21 Where this, you're gaining dose and
22 reliability here. But here maybe you're going a little
23 bit of dose.

24 MEMBER SKILLMAN: Thank you.

25 MR. BUTLER: This is John Butler. I just

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1 want to address the aging question that you raised.

2 MR. MIKSA: Yes.

3 MR. BUTLER: In the guidance it does state
4 that if you defer something for three operating cycles,
5 at that point after that third deferral you either
6 implement it or you take action to change that
7 commitment. If it=s a regulatory commitment, you
8 start the process of exempting, getting an exemption,
9 for that action.

10 MEMBER BLEY: Thanks John.

11 MR. BUTLER: It does not allow you to
12 continue --

13 MEMBER BLEY: I=m glad that=s there. I
14 didn=t see it when I skimmed through all that stuff.
15 I appreciate it. Thanks.

16 CHAIRMAN STETKAR: Those, by the way,
17 Dick, are really important nuances. It was really
18 interesting to sit in on this aggregation panel.
19 Because if you=re faced with this big bucket of fours,
20 how do you distinguish them on degradations here that
21 your refueling machine is number eight in the whole rank
22 versus number 11 for the other one. They=re both
23 fours.

24 MEMBER SCHULTZ: So they began to use a
25 finer tooth comb.

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1 CHAIRMAN STETKAR: Right.

2 MEMBER SCHULTZ: To go through the
3 process.

4 CHAIRMAN STETKAR: Right.

5 MR. MIKSA: Which the evaluations give
6 that information, where before without the evaluations
7 you wouldn't have that necessarily. It would just be
8 somebody that=s passionate about their project.

9 CHAIRMAN STETKAR: Right.

10 MEMBER BLEY: This kind of implies that
11 there may be a three and a six and a nine and 10 that
12 come from somewhere else and didn't get evaluated in
13 this process, but are important.

14 MR. MIKSA: As far as Palisades priority.

15 MEMBER BLEY: Yeah.

16 MR. MIKSA: Yeah, I didn't put all 20 on
17 this slide just --

18 (Simultaneous speaking)

19 MEMBER BLEY: But all 20 --

20 MR. MIKSA: I just took examples.

21 MEMBER BLEY: Okay. So all of them went
22 through the process.

23 CHAIRMAN STETKAR: There is someplace a
24 big 20 anyway. Trust me. I saw it.

25 MR. MIKSA: Okay. This is just an excerpt

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1 of it.

2 MEMBER BLEY: Thanks.

3 MEMBER SCHULTZ: But, Jim, I don=t mean to
4 be flippant, but I hope that passion still plays a role
5 in the discussions there.

6 MR. MIKSA: Oh absolutely.

7 MEMBER SCHULTZ: What John just described
8 the discussions it did.

9 MR. MIKSA: Absolutely.

10 CHAIRMAN STETKAR: Let me just say there
11 were champions. And champions both in the positive and
12 negative.

13 MEMBER SCHULTZ: I=m sure. Certainly.

14 MR. MIKSA: It focuses discussion. It
15 doesn=t take the passion out of it.

16 MEMBER SKILLMAN: Jim, let me ask this
17 question. I think of some of the really old plants in
18 the country -- Oyster Creek is an example and a newer
19 plant, one of the plants that was most recently licensed
20 in the last decade, whatever it was, 15 years most
21 recently licensed. Is there a recognition of how
22 really old plant, an Oconee or an Oyster Creek, could
23 have a true bucket list that=s 55 gallon drums worth
24 of bucket items that are constantly being deferred like
25 Dennis is talking about? A new plant would have 163

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1 for instance because it=s newer and it=s more
2 conforming to the more recent regulatory guides and
3 codes and standards.

4 Is there recognition that a moldy-oldy
5 plant may have a true challenge in trying to winnow this
6 forest of items down to the 10 or 15 that are doable
7 in the next couple of fuel cycles? Whereas, a newer
8 plant might have an easier time doing that?

9 MR. MIKSA: I agree. It would be easier.
10 We see this though as supplementing our plant health
11 committees. So we=ve already -- All plants have taken
12 an attempt at doing that already in some form or
13 fashion. This would be an opportunity to take those
14 items that they=ve already got this bucket per se that
15 they don=t have resources assigned to. It=s just kind
16 of sitting there. And then they=ve got their bucket
17 list they=re working on.

18 This would be an opportunity to (1) look
19 at that bucket that they=re working on and make sure
20 they got the right importance and resources on those.
21 But (2) it=s also an opportunity for somebody to pick
22 something out of this bucket down here and say, AWait
23 a minute. This meets some of this criteria. Let=s go
24 run it through the process, take it to plant health
25 committee and see now if it doesn=t come off the

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1 languishing list and actually ends up into the plant
2 health committee.@

3 MEMBER SKILLMAN: How does that happen?
4 What=s the trigger for these individuals to have the
5 initiative to reach down and say AWe=ve delayed this
6 for the last nine outages. It=s time to get busy with
7 this one@?

8 MR. MIKSA: I can talk to Entergy and
9 systems engineers and program engineers. They=re
10 always looking at items that are impacting the systems
11 or programs. And they=re constantly looking for what
12 prize they=re getting done and which ones aren=t and
13 presenting those to plant health. It=s part of their
14 job and responsibility to understand what=s on their
15 plate, what=s getting done and what=s not. And if
16 something is not getting done, does it have the right
17 party or not? So it=s really the processes would
18 accomplish that.

19 MEMBER SKILLMAN: And it sounds as though
20 the expert panel is convened at the site has on it a
21 number of individuals that are probably part of the
22 plant health committee.

23 MR. MIKSA: Absolutely.

24 MEMBER SKILLMAN: So they see this at a
25 fairly thorough and integrated level.

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1 MR. MIKSA: And that=s one of our values
2 that we found in this is having those plant health
3 committee members on this panel.

4 MEMBER SKILLMAN: Thank you, Jim.

5 MR. MIKSA: Yes. So once Palisades has
6 assigned their project priority, then we went to a
7 scheduling process. And we started out by looking at
8 the guidance from NEI on how to schedule items. We=ve
9 identified each project as outage or online because
10 there are different schedules associated with those.
11 We sorted each group then per the NEI/Palisades
12 priority.

13 Then based on plant conditions -- an
14 example is outage train windows -- we assigned
15 completion target dates. So, for instance, there may
16 be a high priority project that needs two outages to
17 complete. Even though the process says we should
18 complete it this next outage, it=s going to take two
19 outages to do because of the way the outages are planned
20 and designed. We do it by electrical transit at
21 Palisades.

22 And then finally once that is looked at
23 then you look at your available resources to do the
24 final adjustment. So it=s an iterative process as you
25 go through the scheduling. You take several different

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1 swipes at it until you finally come up with the correct
2 schedule dates. It=s not a one process through.

3 We=ve already seen this slide. This is
4 the guidance that was given in the NEI. And
5 essentially the concept here is you put your available
6 resources on the highest priority activities. That=s
7 really the guidance here.

8 So we use that and we went through and here
9 are some examples at Palisades of how items were
10 scheduled. The comments here probably give you some
11 of the things we considered such that we=ll go back to
12 the one we discussed, the permanent fall protection
13 installed at the cavity tilt pit.

14 After all the effort we went through to
15 prioritize and put it in the right spot, we know we have
16 resources available to complete it in the next outage.
17 So why wait? So we=re going to go ahead and do it.
18 Different resources like maintenance resources, the
19 design is done. So the money is there. We=re just
20 going to do it.

21 And then we have the comment on the open
22 phase. The current schedule has us install it on one
23 train. And then we install it on another train. And
24 then we monitor it for 18 months before cutting to
25 isolation. So here we have some time to look at maybe

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1 not doing that final step with cutting the isolation.

2 Questions on the scheduling? This is
3 really an internal data save looking at resources.

4 CHAIRMAN STETKAR: I think from our
5 perspective we appreciate the scheduling. But we're
6 more interested into the prioritization process.

7 MR. MIKSA: So aggregation actions. I
8 think we've discussed some of these already. We're
9 looking at moving up incipient detection installation.

10 We're going to request a procedure change
11 -- this is at the fleet level -- to include PRA risk
12 insights more into our plant health committees.
13 That's one gap we saw. Our plant health committee
14 doesn't have a PRA person on that committee or report
15 there normally. So this is a big insight for us and
16 also consider use of PRA insights for the exemption for
17 open phase.

18 Lessons learned, values and benefits. A
19 systematic approach much like the 50.59 process,
20 another evaluation process. All the subject matter
21 experts can go through this the same way. So we've come
22 up with some type of consistent result.

23 The characterization evaluations were
24 reviewed by site senior leadership. And that gives
25 them risk insights for their decisions they make at

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1 plant health committee or day today.

2 The aggregation through pairwise
3 comparison focusing on risk reduction and allocation
4 of limited resources, that's a process that we haven't
5 used before. There are pieces of it, but never
6 together integrated like that to make sure we were
7 working on the right things, the right resources, at
8 the right time.

9 Our IDP meetings, they're a great venue for
10 our station senior leadership to have those
11 discussions. And the discussions are based on risk
12 significance.

13 And then the last bullet is since this is
14 also familiar with the NRC staff, it gives us, the
15 plants, a platform for discussion with the staff on the
16 importance of topics as we asked for exemptions or
17 delays in scheduling.

18 Some of the items we learned that could
19 improve the process out of pilot, the complete
20 importance evaluations, new evaluations, and emergent
21 evaluations require re-aggregating on a periodic or
22 emergent basis. This goes back to the discussion we
23 had on as things change, parts get used. We even had
24 one item where a technicians from the vendor were no
25 longer available to support a certain item. Even

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1 though the item=s working, the component is working,
2 at the plant, we have no longer any tech support. That
3 puts an importance on its replaces -- lessons from a
4 support perspective versus a function perspective.

5 Our project scope, our definition is
6 critical. We had the discussion earlier. It=s how you
7 define the project up front. And that translates into
8 other plant health committee discussions and
9 throughout. So there=s a lot of value into defining
10 what the actual project is.

11 Training, the material assumed that the
12 subject matter experts had a basic 50.59 and PRA
13 understanding.

14 We really need to look at the training
15 material and see if there=s some type of level before
16 you go into the training. It=s hard to take a new
17 engineer just new to the position and bring them through
18 this process. Yes, if he=s 50.59 qualified, if he
19 understands a little bit of risk assessment and how risk
20 is used either in fire protection or other areas. It=s
21 better. So it has to be considered for SME selection.

22 And then finally during the aggregation
23 scheduling, the IDP panel discussions affecting
24 prioritization and scheduling should be documented. A
25 lot of those aggregation discussions had nuances that

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1 weren't an evaluation. So we need to capture those and
2 make sure they're carried forward if this has to be
3 reaggregated or revisited or put into an exemption.
4 And that's all I had for Palisades.

5 CHAIRMAN STETKAR: I certainly agree with
6 you on that. There was a lot of discussion at least
7 from my perspective on that aggregation process. If
8 it's not captured, the next time you convene even the
9 same people they won't remember it.

10 One thing I wanted to ask you, Jim, because
11 you've now been through this whole process. Do you
12 think -- I'll put you on the spot -- it would benefit
13 from having someone outside of the Palisades
14 organization involved. You heard a few of the comments
15 about either as a facilitator or a professional skeptic
16 or however you want to characterize that person. Or
17 do you feel that it's so plant specific that it's best
18 done within the organization?

19 MR. MIKSA: It's very important that you
20 have the right people at the aggregation meetings. Now
21 if that right person is an industry person, if it's a
22 corporate person, then there's value. If it's just a
23 body to fill a position as somebody to just throw
24 questions out, I don't think that's the value. I
25 wouldn't see value in that.

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1 So individuals need -- Like if there was
2 an individual that went through generic assessment at
3 NEI, having them at one of these meetings, that would
4 be valuable. They could give us -- We would show how
5 we use their insight and they could show how they
6 thought it would be applied to plants. That would be
7 of value.

8 If it was somebody that was really familiar
9 with the process and had done this several times and
10 it=s the first time we=ve done it, having that person
11 there would be valuable. He could say, AI=ve seen 10
12 of these. Certain people considered this.@

13 I think it=s really important on the
14 individual that is going to partake. And there is
15 value if they are familiar with the process or
16 familiar with the topic. To have just a basic double
17 advocate not familiar with the plant and not familiar
18 with the process, I think it would be cumbersome and
19 not a value.

20 MEMBER SCHULTZ: Jim, I would like to ask
21 this of you and then perhaps John Butler would like to
22 respond, too. Your last bullet on the lessons learned
23 is that it provides the common platform for
24 industry-NRC discussions related to individual issues
25 and projects. How would you see that happening given

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1 our discussions earlier about how this is a good
2 evaluation approach for risk prioritization? But that
3 is plant specific. How would you see that translating
4 into industry related discussions with the NRC on these
5 certain projects that I would presume would be those
6 that are imparted in the regulatory column?

7 MR. MIKSA: I envision that and this would
8 be the basis for supplemental documents for scheduled
9 delays or exemptions. And this process could be
10 similar to like an artistic process, a temperative
11 process, that the stations are familiar with and the
12 staff is familiar with. So we=re not starting from
13 ground zero on every topic. And it would be
14 recognized.

15 And then we=d be more focused on talking
16 about the specific aspects of each project, the
17 importance from a safety, regulatory, from a safety
18 perspective or a security perspective or an EP. We=d
19 be talking more about the specific importance. That
20 would be the discussion versus the project and give it
21 a templated way to submit something like this.

22 MEMBER SCHULTZ: But as you described it,
23 you would expect that Palisades could have a tipping
24 point on a particular project that would be different
25 than at least some other part of the industry, some

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1 other units and plants in the industry.

2 MR. MIKSA: Correct.

3 MEMBER SCHULTZ: John, is that a good
4 answer from your perspective? Or were you looking for
5 something additional?

6 MR. BUTLER: We can hopefully talk a
7 little bit more about our hopes for the process and
8 expanding its use within the NRC this afternoon. But
9 generally the process provides you a valid platform for
10 discussion of relative significance, relative priority
11 of issues that could be applied in a number of ways on
12 emerging issues or rulemaking issues or whatever to
13 inform how they're being addressed within the industry.

14 But as we saw with the generic assessment
15 expert team process, that process is very valuable to
16 identify what are the key attributes of an issue so that
17 you can then use that information to identify the
18 population of plants that have that key attribute and
19 treat them appropriately versus treating everyone the
20 same way.

21 MEMBER SCHULTZ: Thank you.

22 MEMBER POWERS: Jim said something that
23 resonates with me, but I'd like to pursue it a little
24 further. You said having your professional skeptic or
25 whatnot from God know where would be I think your word

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1 was cumbersome which I really believe. Is that
2 universally true or would you have an exception for say
3 a particularly difficult issue?

4 MR. MIKSA: I guess I would answer that by
5 saying if the individual had some knowledge of the item
6 being discussed whether it was at an industry level or
7 plant specific level there would be value. If it=s a
8 person that=s just I would say of no knowledge of the
9 process and no knowledge of the issue is there I=d think
10 there would be not any value added. There would be more
11 value on educating them on the process and on the topic
12 than on potentially identifying something that we
13 forgot or didn=t do. Does that answer your question?

14 MEMBER POWERS: Well, like I say, I think
15 it resonates with when you say cumbersome because you
16 spend all your time trying to educate somebody about
17 your plant or your process or issue or things like that.
18 And that just distracts people.

19 MR. MIKSA: It=s a distraction.

20 MEMBER POWERS: And you=re trying to get
21 -- You presumably have a whole list of these things
22 you=re trying to get through. And every one of them
23 you have to slug through that.

24 But I was just wondering about I suppose
25 you have to have a dozen of them where your panel finds

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1 itself spending a lot of time already on the issue for
2 a variety of reasons, different perspectives,
3 different views and things like that. And you have
4 available with you somebody who meets your minimal
5 requirements and knowledgability. Then I think what
6 you=re saying is yeah there=s a point at which you=re
7 spending so much time on this issue it=s worth your
8 while to bring somebody in.

9 MR. MIKSA: Absolutely. And we also have
10 the ability if we can=t come to consensus or we don=t
11 feel we have enough information to make a decision. We
12 can delay it. And in fact the one issue we did ask for
13 on open phase was more quantitative information. It
14 originally came in more qualitative and we asked it to
15 go back and do a quantitative assessment prior to
16 aggregation. So, yes, the answer to that is
17 absolutely.

18 MEMBER POWERS: So you=re not closing this
19 off, but you want to constrain and I think you outlined
20 the constrain you want. Has to be knowledgable on the
21 issue as it=s framed whether that=s knowledge in the
22 plant, knowledge on the hardware, knowledge on your
23 local processes. It depends on the issue.

24 MR. MIKSA: Correct.

25 CHAIRMAN STETKAR: Great. Anything

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1 more? We planned that Jim was going to be the guinea
2 pig and we knew there were going to be more questions
3 because we got informed. So Jim has weathered the
4 storm pretty doggone well I think.

5 To get us a little bit back on track on the
6 schedule, I=ll ask if we can come back at 12:45 p.m.
7 from lunch is that=s okay. Even if it isn=t okay, we=re
8 going to reconvene at 12:45 p.m. Off the record.

9 (Whereupon, at 11:52 a.m., the
10 above-entitled matter recessed to return at 12:47 p.m.
11 the same day.)

12 CHAIRMAN STETKAR: Let=s reconvene here.
13 We=ll hear from Plant Hatch. And again, same caution
14 as this morning, if we delve into anything that=s true
15 proprietary or security related or you feel
16 uncomfortable with, just let us know and we=ll pick it
17 up at the end of the session.

18 Greg, it=s all yours.

19 MR. JOHNSON: Alright. Good afternoon.
20 Thank you for allowing me to come present before you
21 this afternoon. I am Greg Johnson. I=m the
22 Regulatory Affairs Manager at Hatch. I=ve been at
23 Hatch my entire career of 28 years now. I think in the
24 twilight they=ve got me in the regulatory affairs and
25 I=ll probably stay there for the next couple of years.

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1 CHAIRMAN STETKAR: Greg, just make sure
2 that you either speak a little louder or pull the
3 microphone a little closer to you.

4 MR. JOHNSON: Okay.

5 CHAIRMAN STETKAR: One or the other
6 because it helps. All of this stuff is transcribed and
7 it just helps our reporter.

8 MR. JOHNSON: Back in early 2014, My CNO,
9 Danny Bost, is the chairman for the NEI Cumulative
10 Impact Working Group. He came to me in early 2014 and
11 said, AGreg, I want Hatch to be a part of the piloting
12 process for this cumulative impact working group. And
13 in his words, it was kind of an approach of fitting
14 everything on our plate on the table and to do a risk
15 assessment of that. So that was his words, Aeverything
16 on the plate.@ And that phrase has kind of stuck with
17 me as I=ve gone through this piloting process.

18 We like everyone else in the piloting
19 process selected 20 projects as part of the pilot. We
20 did that back very early in the year in the March time
21 frame. And I=ll say even before we really understood
22 the process very well again selecting the 20 projects.
23 I want to talk about a couple of projects that really
24 didn=t fit as I went through this process. And that=s
25 because we just kind of broadly try to pick 10 projects

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1 that were regulatory driven and 10 projects that I=ll
2 say were reliability or site projects upgrades.

3 We went through the same core team
4 establishing of the IPD, conducting the NEI training
5 that was given as part of the kickoff, did initial
6 training assessment. And then as we got into the IDP,
7 doing a check and adjust, made sure all the members of
8 the IDP understood again what our mission was and what
9 the process was about.

10 I selected my IDP at Hatch really as the
11 same makeup as the Maintenance Rule expert panel. So
12 some of the members on my IDP are Maintenance Rule
13 expert panel members and they understood that process
14 as well and have that background.

15 That makeup of that team is myself, the
16 Regulatory Affairs Manager and I=m really the chair of
17 the IDP. I had two Operations SROs as part of that
18 team. Our Work Controls Planner, an Engineering
19 Supervisor, a Maintenance Manager, a Licensing
20 Supervisor, my PRA, Risked Informed Principal
21 Engineer, and three Licensing Engineers.

22 Those three licensing engineers report to
23 me and I=ll say they=re really the people who put
24 together the product. Rather than train 20 different
25 subject matter experts on how to go fill out this

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1 paperwork and produce a product, I have three or four
2 core people who did that and worked hand-in-hand with
3 the 20 subject matter experts. So they got together,
4 created the product and then brought that product in
5 front of the IDP for our review.

6 Most of the people on this team are many,
7 many years of experience. My licensing supervisor has
8 about 38 years of experience. Maintenance manager
9 about 30 years of experience. The control room SROs,
10 one guy had a 30 years of experience. The other about
11 12. The risk informed PRA engineer about 25 years of
12 experience.

13 The most junior was one of the licensing
14 engineers had only one year of experience. And I chose
15 her as a developmental opportunity for her. And I
16 mentored her through that process.

17 Alright. So we had of the 20 projects six
18 projects that were related to NRC commitments, one
19 project that was an NEI commitment and that was the open
20 phase project and then 13 of the plant health projects.
21 I could have chosen a few more of the Fukushima related
22 initiatives, but those projects were well vetted in
23 some of the other piloting plants. I chose not just
24 to go do the same thing that somebody else had already
25 done which also is really at a high importance level

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1 anyway. So I steered towards some of the more plant
2 health projects at Hatch.

3 These are the 20 pilot projects that we
4 chose at Hatch. And as you can see I highlighted the
5 NRC commitment related in orange. And that=s
6 NFPA-805, cyber security, the reliable spent fuel pool
7 instrumentation, the license renewal commitments and
8 degraded grid transformer which is a Hatch specific
9 commitment and then a weld overlay that we=ve got to
10 do in an upcoming outage which is also a Hatch specific
11 commitment. The yellow is the open phase which you=re
12 very well aware of that issue.

13 So let me talk about NFPA-805 and license
14 renewal. When we actually got into building the
15 product and got to the IDPs associated with NFPA-805.
16 We determined that we were not far enough along in the
17 process of the 805 project to be able to do a full
18 assessment of the risk.

19 Right now, Hatch is in the phase of doing
20 circuit analysis without a real product on the back end
21 of that. So some of the other piloting plants have gone
22 through further along the 805 process and have I want
23 to say a design product that they can assess.

24 For Hatch, we=re not there yet. We=re
25 still in circuit analysis part of the process. Next

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1 year or the year after that we will be able to come back
2 and assess here=s the real design change, here=s the
3 real change that we want to make at the plant and do
4 a further assessment of that. As we got into it, it
5 just kinda fell apart. And we realized we couldn=t do
6 an assessment at 805 based on where it is today.

7 CHAIRMAN STETKAR: Greg, let me ask you
8 about that. Did you take the approach that if you
9 understand that decision that if you couldn=t quantify
10 the risk you didn=t think you could address it or? I=m
11 curious about why.

12 MR. JOHNSON: I don=t know what it looks
13 like at this point. It=s high/low interfaces. But
14 what else is it? I don=t have a scope to go be able
15 to assess. So we just stopped there and decided we=d
16 pick that up in a future year.

17 CHAIRMAN STETKAR: Okay.

18 MR. JOHNSON: Likewise with the license
19 renewal commitment, we=re in beyond 40 and get into
20 license renewal and already had the first phase of our
21 license renewal commitments. I=ve got some other
22 milestones that are coming up in the out years of
23 license renewal commitments.

24 But as we got into that, license renewal
25 was just too big. There were too many pieces of -- I=m

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1 going to say there was coatings and there=s buried pipe
2 and there=s all kind of aging management systems that
3 you have to have programs in place and also inspections
4 in place.

5 And we just didn=t want to spend the energy
6 of trying to get our hands around the totality of that
7 big, huge project. So we just made a decision as we
8 got into it that we=re going to go do license renewal.
9 We=re going to go do it and just kind of accept that
10 and not spend the time that it would take to break it
11 down and to try to assess the parts and pieces of that
12 and do any type of risk assessment associated with it.

13 CHAIRMAN STETKAR: Let me -- I=m trying to
14 understand the thought process here a little bit. And
15 I=m not trying to bigger picture thought process. So
16 bear with me for a second.

17 But you did tackle cyber security. You
18 thought you could get your hands around cyber security.

19 MR. JOHNSON: Cyber security was more like
20 what I envisioned 805 to be in our future. Cyber
21 security we=ve already got a lot of the first phase of
22 it done. We=ve got some commitments coming up in the
23 future of what we=ve got to go do as a second tier. I=ll
24 say milestone eight comes due.

25 So we know what we=ve done and we know what

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1 we have remaining to do left. And we feel like we could
2 assess -- We felt like we had a good picture of what
3 that is and what the risk assessment was associated with
4 that.

5 CHAIRMAN STETKAR: Okay.

6 MR. JOHNSON: A defined scope.

7 MEMBER SCHULTZ: Greg, if we could just
8 back off a moment. On the license renewal commitment,
9 that=s a program and you just determined that rather
10 than segregate that into a number of different
11 projects, whatever you want to call them, commitments,
12 and evaluate those individually it was just determined
13 that they=ve got their own life schedule and approach.
14 And it=s going to happen because of the overall program.

15 So we=re not going to kind of take them off
16 the list really. You=re not going to rank order them
17 at all. Just move ahead and get them done.

18 MR. JOHNSON: I feel like it would have
19 been to do license renewal would have been a level of
20 effort that would have been equal to this entire body
21 of work.

22 MEMBER SCHULTZ: Right.

23 MR. JOHNSON: There are 23 license renewal
24 programs that were put in place.

25 MEMBER SCHULTZ: They have to have their

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1 own schedule already.

2 MR. JOHNSON: And they have their own
3 milestones and their own programs and their own
4 inspections that have to be done. I could have spent
5 the entire effort trying to assess something that big.

6 MEMBER SCHULTZ: Right. Once you've done
7 the rank ordering of the other projects, might you take
8 a look at what you've done in terms of your schedule
9 or commitments on license renewal and kind of line those
10 up to the committee and determine whether there's any
11 of them that ought to be receiving additional
12 attention?

13 MR. JOHNSON: I guess we could. We could
14 go back and take a look at that in round two and see
15 if there's anything.

16 MEMBER SCHULTZ: Okay. Thank you.

17 MEMBER SKILLMAN: Greg, I'm wondering if
18 there isn't maybe another message from the two items
19 that you just identified. Of the 20 items, it appears
20 that all but the two, NFPA-805 and license renewal
21 commitments, are either direct hardware issues or very
22 close to hardware issues, cyber security being close
23 to hardware issues.

24 The two that you chose to not pursue are
25 program issues.

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1 MR. JOHNSON: Right.

2 MEMBER SKILLMAN: And that gets to a s
3 comment I made a couple hours ago about will this
4 process work for a program review. At least, my
5 experience is owners and operators can get into issues
6 that are solely because the program is corrupted. Spare
7 parts, maintenance role, determine initiative, EQ,
8 high energy line break.

9 And sometimes when you dig down into those,
10 they are severely broken. But that brokenness doesn't
11 exhibit itself until there's a finding that kind of
12 leads the inspection team, whether it's the NRC or the
13 owner, to dig in and use a thick magnifying glass and
14 identify what's broken.

15 So is there a message there? Programs are
16 too big to assess under this umbrella that we're talking
17 about here today.

18 MR. JOHNSON: I think by and large what you
19 want to see the result being is it's going to be fix
20 the plant initiatives. It's going to be equipment
21 commitment. It's going to be things that are on my five
22 year plan, my business plan, to go see where are we going
23 to put -- where are the resources going and is it ranked
24 appropriately. I really don't see a lot of application
25 for just simply a program.

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1 MEMBER SKILLMAN: Thank you.

2 MR. JOHNSON: I'll say not in the guy who
3 is in the real equipment put it in use kind of aspect.
4 Now maybe at the generic level, the generic committee
5 could take a few issues and run through the process and
6 see if there's some value. But at the site level, it's
7 usually going to be equipment base.

8 MEMBER BLEY: It seems to me -- I see your
9 logic on this. I mean license renewal you need to get
10 NRC approval by a certain date no matter what.

11 MR. JOHNSON: Right.

12 MEMBER BLEY: But you know you're going
13 ahead. And the only thing you might get out of doing
14 this is you might put something earlier in that program
15 because it's an area you might run into trouble trying
16 to complete. But other than that, you're not really
17 trying to order it. You're just in the process trying
18 to get it done.

19 MR. JOHNSON: Right.

20 MEMBER BLEY: The 805 is a different kind
21 of thing I think, but you said you were going to do that
22 eventually.

23 MR. JOHNSON: Right. And, too, in a
24 license renewal in my working with the people who were
25 involved with the license renewal milestones and the

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1 commitments, they're not coming to me with major
2 heartburns or troubles or problem areas saying, AI'm
3 going to need some help here.@ So that's another
4 factor in going back to that. If somebody was coming
5 to me and said, AWe're really going to have a problem
6 with this little niche in the license renewal program@
7 we may pick that up and look at it closer.

8 CHAIRMAN STETKAR: Greg, to follow up a
9 little bit because I'm trying to think a little bit
10 ahead, suppose there was a new if you want to call it
11 programmatic initiative whether it's industry
12 initiated or whether it's regulatory initiated. Then
13 we'll just call it X for now because I don't know what
14 it is.

15 My sense on a lot of this process though
16 was that the process should be -- Well, let me ask you.
17 Perhaps I'm too naive thinking that the process should
18 be able to say AHow does X affect Plant Hatch and where
19 does that X align with everything else that we're doing
20 in the world at Plant Hatch@ rather than saying AHow
21 does NEI view X across the whole fleet@ or AHow does
22 the NRC view X generically across the whole fleet?@

23 From I think what I'm hearing you say is
24 that this process doesn't work very well at that
25 programmatic level because there's not enough

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1 specificity or what?

2 MR. JOHNSON: I would say this. I would
3 say if there=s a good application or a good place in
4 the process to pick up and look at programmatic
5 initiatives it would be at a generic level. So the IDP
6 at the generic level looking at programmatic issues and
7 looking at them across I=ll say the suite or the fleet
8 at this out there like open phase and say, AOkay. When
9 we have this new issue that comes up, the next open phase
10 thing that comes up to get the generical task force to
11 look at that and size that up from a industry standpoint
12 and put some risks dialogue into the discussion based
13 on the points there. I think there=s opportunity to
14 have the generic task force take a look into new
15 initiatives.

16 CHAIRMAN STETKAR: That is a little bit
17 different from the plant specific focus because each
18 plant, you know, Plant Hatch is different from Brown=s
19 Ferry Unit 1 which is different from Browns Ferry Unit
20 3.

21 MR. JOHNSON: Right.

22 CHAIRMAN STETKAR: In terms of the
23 relative risk effects of any generic issue.

24 MR. JOHNSON: But my experience coming out
25 of this is I really have to have a work product.

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1 CHAIRMAN STETKAR: Okay.

2 MR. JOHNSON: I really have to have
3 something that=s a forced state and then after state
4 that I know I=m going to have. I=m going to fix
5 something for its best application for me at the site.

6 CHAIRMAN STETKAR: Okay.

7 MEMBER SKILLMAN: Greg, let me stick with
8 this just for a second because with the age, with the
9 time you=ve spent at the plant, you were there when your
10 chief nuclear officer received a letter from the NRC
11 saying AUnder oath and affidavit, tell me that you meet
12 your design licensing basis under 50.54(f).@ I had to
13 sign that letter. You might have had to have signed
14 that letter when it was done. That was a program that
15 affected all licensees. Everybody had to respond.

16 There isn=t a whole lot of CDF that is
17 obvious when you dig into responding to a 50.54(f)
18 letter. But the requirement was for the utilities, for
19 the owners, to demonstrate that they met their design
20 and licensing basis so they could meet the CDF and LERF
21 that they were supposedly licensed to. That=s the kind
22 of program I=m referring to.

23 In your opinion, how would that be affected
24 by this initiative?

25 MR. JOHNSON: It=s going to be hard to

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1 assess the programmatic stuff from what I see. I think
2 it=s going to be hard to get your hands around. And
3 when you do, when you make the attempt, it=s going to
4 be very qualitative. It=s going to be something that
5 will have a higher level of questioning behind it. How
6 did you get that result and that answer?

7 MEMBER SKILLMAN: I think it also lends
8 itself to the same logic that you used for your license
9 renewal. You=re going to have to do it anyway. So why
10 bother to determine what the incremental impact is?

11 MR. JOHNSON: That=s right.

12 MEMBER SKILLMAN: But what you=re
13 convincing me of is this is good tool as long as it=s
14 aimed at things that come out of your plant health
15 committee or out of your maintenance rule activities.

16 MR. JOHNSON: That=s right. Very good.
17 Alright. So I=m going to cover three projects, safety
18 relief valve upgrades that are highlighted in green,
19 the emergency diesel generator excitation panel which
20 is an obsolescence issue and then the degraded grid
21 transformer project which is a Hatch specific
22 commitment that came out of the CDBI inspection years
23 ago.

24 Alright. So SRVs. We are in the process
25 of upgrading our safety relief valves from a two-stage

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1 pilot safety relief valve to a three-stage pilot safety
2 relief valve. Longstanding for Hatch. We replaced
3 the existing Unit 1 and Unit 2 two-stage with 3-stage.

4 One of the Unit 2 has already been
5 replaced. We did this last outage to make sure it was
6 going to work. And then in the last Unit 1 outage we
7 replaced all 11 of the Unit 2 SRVs. And so far working
8 reliably. And then at the upcoming Unit 2 outage we=ll
9 replace the remaining 10 of the 11 safety relief valves.
10 And that will happen this coming February/March in
11 2015.

12 We went through that process of evaluating
13 that knowing full well that we=re going to do it. But
14 as part of the piloting process we wanted to go through
15 it.

16 Step one, is there any impact? And we had
17 two yeses out of the step one process under safety that
18 it would increase reliability of an SSC. And it would
19 result in an impact in capability of the fission product
20 barrier. And that means the SRV is part of the RPV
21 boundary.

22 In the step two, we asked the question AIs
23 it more than minimal?@ And again we got a yes answer
24 out of that in question two. It would have improved
25 reliability because it will eliminate the need for a

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1 mid-cycle shutdown. For the two-stage SRV, if it
2 begins leaking, you can let it leak for about -- You
3 can=t run a whole operating cycle with a leaking
4 two-state SRV. That=s been our experience and been the
5 industry experience.

6 So if you get a leak in SRV, from a
7 two-stage SRV, you=re going to have to plan a mid-cycle
8 shutdown and replace that SRV. It=s been our
9 experience many, many times at Hatch of having to have
10 a mid-cycle shutdown to replace an SRV.

11 Usually, the top works. I=m going to say
12 the pilot part of the SRV that begins leaking that
13 requires that shutdown. So when you shut down in the
14 mid-cycle, you have a period of time where you take that
15 pilot off of that SRV and you=ve got an opening in the
16 RPV, from the RPV through that main steam line to that
17 opening in the SRV pilot which puts us in a higher safety
18 status for an outage. In the outage, we would declare
19 ourselves to be in a yellow condition from an outage
20 safety perspective. That equates to -- I=ll say if we
21 can eliminate that we will have improved reliability
22 and made ourselves safer.

23 Answering that yes makes us go to this
24 qualitative risk assessment that I just described of
25 having eliminated the need for the higher risk

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1 condition during the mid-cycle assessment. And out of
2 that process with PRA assistance for the outage
3 condition, qualitative came up with a safety importance
4 of low.

5 CHAIRMAN STETKAR: Greg, does Plant Hatch
6 have a shutdown risk assessment model?

7 MR. JOHNSON: No, do not. So that=s why
8 I say it=s qualitative. So we said based on this
9 elevated risk during the safety assessment that we felt
10 like our current risk if we were in that condition would
11 be a white condition, mid white condition. And then
12 going to the three stage SRV, we feel like we=d be at
13 least a medium, 50-90 percent success rate in reducing
14 that risk of averting the mid-cycle shutdown to replace
15 an SRV. And that came out to a safety significance of
16 low. That=s how you apply that process.

17 Other categories that we went through
18 there, there was nothing in the security, emergency
19 planning, radiation protection that got a hit. And
20 those other categories, reliability based on the design
21 process and the readiness for the change out of the SRVs
22 graded that as low on reliability.

23 When we went through the IDP process, this
24 was one of the issues I=ll say. Under the NEI guidance,
25 this graded that as a three. When we got into the

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1 aggregation review, the IDP panel members elevated this
2 to a level two priority. And there was a lot of
3 discussion about it. There was a lot of give and take.
4 And I=ll say there=s been a lot of scars and a lot of
5 pain associated with this at Hatch.

6 (Laughter)

7 So there was a lot of emotion.

8 CHAIRMAN STETKAR: You know there=s a good
9 process when you hear that.

10 MR. JOHNSON: Going back to the input of
11 the operators. So it was a lot of the direction of the
12 input of the SROs saying AI want this to be a two.@ And
13 the message was AI want this fixed. I don=t want there
14 to be any mistake about nobody is going to take this
15 off. Nobody is going to mess with this.@

16 Out of that, we said, AOkay, we=ll elevate
17 it to a two and make sure everybody knows that this is
18 extremely important in the eyes of the operators.

19 But again we expect that the Unit 2 will
20 be complete this coming March with that initiative.

21 MEMBER POWERS: There=s been an
22 interesting study on unionized work forces. And
23 they=re content with their jobs. And they find that
24 one of the highest contentments that things that make
25 their job difficult is because of degradation and that

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1 things get fixed promptly. It=s one of the highest
2 criteria by which they evaluate their contentment with
3 their jobs.

4 MR. JOHNSON: It=s not surprising.

5 MEMBER POWERS: Just get it fixed rather
6 than putting up with it. It=s just an interesting and
7 unexpected finding. Just having things fixed promptly
8 is so incredibly important.

9 MEMBER BALLINGER: Well, it=s taken 15 or
10 20 years setpoint drift and everything else. It=s
11 taken a long time.

12 MEMBER POWERS: Yeah.

13 MR. JOHNSON: Alright. Second project,
14 diesel generator excitation. So this is a
15 obsolescence issue. And there are a lot of obsolescent
16 issues that are on my 20 project list. It=s full of
17 stuff.

18 Now is diesel generators? Is HPSI?
19 RCIC? Battery chargers or I=ll say my primary DC
20 battery sources? All of these are MSPI, very important
21 to safety systems that are working fine today, but
22 they=re full of obsolete parts. If we don=t do
23 something about it over the next five years, I=ll wake
24 up one day and I=ll have a failure and I won=t have a
25 part to replace it with. And I=ll have a inop system

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1 and those are all tech spec related, shutdown LCO
2 related systems. Okay.

3 So let=s walk through one of the examples.
4 Diesel generator excitation panel, on the diesel
5 generator skid there=s a panel there. It=s full of
6 electrical components and it regulated the voltage
7 excitation for the diesel generator. If the diesel is
8 inop, I=ve got 14 days to get it fixed. It=s an MSPI
9 system.

10 About 60 percent of the parts associated
11 with that excitation panel are obsolete. My engineer
12 has in his health report got a parts bridging strategy.
13 But that=s only going to last -- You know, I=ve got
14 parts, but I=m going to fly to get this thing fixed.

15 And so our present project plan is to
16 replace one of those diesel excitation panels one per
17 refueling, one panel on one diesel for the next five
18 to six years. And really was on track to get that done.
19 One of the industry stations that has already
20 implemented this was having some problems with that.
21 So we=re watching the industry OE related to this and
22 making sure we=ve got the right solution.

23 But to go through the process, step one,
24 any impact? Yes, under question two, improvement in
25 reliability of the diesel to mitigate an accident.

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1 Under question series number two, more
2 than a minimal impact? For these reliability systems,
3 we said no. And the reason is our approach is you've
4 got to take a beginning snapshot and an ending snapshot.

5 And I'm going to say today I've got a
6 reliable system. Tomorrow I'll have a reliable
7 system. After I do this design change, I expect to have
8 a reliable system.

9 So reliability at present today and that's
10 when I'm doing the assessment today is not impacted at
11 present. And spare parts are presently available with
12 the parts bridging strategy and an implementation plan.
13 And based on what I planned today, I don't expect that
14 there's going to be any more than a minimal impact on
15 my diesel generator reliability.

16 MEMBER BLEY: Given your current plan to
17 replace.

18 MR. JOHNSON: Even my current plan. But
19 that's a very important plan. I can't not act on that.
20 That's the point I'm making. With step two answered no,
21 there is not the need to go to a three alpha or a three
22 bravo PRA, risk-informed assessment.

23 And then I come down and I evaluate the
24 importance based on the other categories. None for
25 security. None for emergency planning. None for

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1 radiation protection. And a medium importance for
2 reliability. And again that=s based on my design and
3 the current status of the design process and the
4 implementation plan.

5 And some of that design and implementation
6 won=t happen until the year 2020. So I=ve got another
7 six years until I have all of this fixed.

8 MEMBER BLEY: So this analysis though is
9 really when you get here you=re priority three. It=s
10 priority three given I meet the March 2020 date.

11 MR. JOHNSON: That=s right.

12 MEMBER BLEY: But if that slips, this
13 thing changes.

14 MR. JOHNSON: Or if I start having
15 failures.

16 MEMBER BLEY: Yeah, the end of life on
17 this.

18 MR. JOHNSON: So it graded out a priority
19 three and the IDP did not change that graded out as a
20 priority three. And the project schedule goes through
21 every year but finishes in March of 2020.

22 MEMBER BLEY: I guess what I was getting
23 at this is a little different than some of the others
24 we=ve seen in that a low priority doesn=t take action
25 off of the list. It just means don=t change the plan

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1 back.

2 MR. JOHNSON: That=s right.

3 MEMBER BLEY: But keep at the plan.

4 MR. JOHNSON: That=s right.

5 MEMBER BLEY: Okay.

6 MR. JOHNSON: And the third pilot project,
7 this is a Hatch specific project. I don=t know how well
8 you know about this. There=s a lot of people who have
9 gotten involved with the Hatch degraded grid project.

10 At Hatch, the emergency buses are 41.60
11 volt buses. And at Hatch, we have in our licensing
12 basis and have had in our licensing basis, if you get
13 a low voltage on the system you=ll pick up an alarm.
14 And if that alarm exists for an hour, we are able to
15 take manual operator action, credited in licensing
16 space manual operator action, to I=ll say disconnect
17 from the grid and to place the emergency power supplies
18 on the diesel generators.

19 Out of a CDBI inspection some years ago,
20 NRC took another look at that and after I=ll say a lot
21 of discussion back and forth, came to a conclusion that
22 Hatch needed to go fix that. And so now we have a
23 commitment to go fix that degraded grid issue with a
24 due date of March of 2020.

25 The whole issue there is if the grid goes

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1 away, if you lose voltage, everything is working like
2 it=s supposed. But if the voltage is degraded, let=s
3 say it goes down to -- I=m just going to use a big, round
4 number and instead of 2460 volts it goes down to 3200
5 volts. There=s a concern that if you have that
6 degraded grid condition where the operators hasn=t
7 disconnected from the grid and you=ve got low voltage
8 and on top of that you have a LOCA and the emergency
9 system starts and do what they=re designed to do, the
10 valves may not open within the time frame that they=re
11 required to open. It doesn=t meet general design
12 criteria 60. Hatch has committed to go in and solve
13 that problem and fixing that problem.

14 MEMBER BLEY: So what you are doing now is
15 you were starting up the diesel generators and run them
16 if the grid voltage dropped.

17 MR. JOHNSON: That=s right.

18 MEMBER BLEY: I=m just remembering
19 throwing this out. There was some 15 years or more ago
20 a plant was worrying about a storm coming up the coast.
21 They started up their diesels and had them going. And
22 having them running bypassed some of the logic and the
23 emergency systems such that if they got an actual demand
24 the diesels wouldn=t have connected to the load.

25 Operating the way you are means you=ve

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1 really got to understand how all that logic is working.

2 MR. JOHNSON: Right.

3 MEMBER BLEY: And I take you do.

4 MR. JOHNSON: Yeah. We understand.

5 MEMBER BLEY: It was a surprise in that.

6 CHAIRMAN STETKAR: Yes, there=s a lot of
7 stuff that came out of that. Don=t do that.

8 MR. JOHNSON: So let=s step through the
9 process on this one. Under step one, any impact? We
10 got several yeses. In fact, to accident initiator
11 which is a loss of offsite power. And an increased
12 reliability of SSC that is I=ll say put in a third
13 transformer increases our reliability. And also
14 increases our defense in depth.

15 And step two is a more than minimal impact.
16 Again, we got several yeses out of that step. The
17 solution to our problem involves putting in a third
18 startup transformer on each unit. That reduced the
19 likelihood of an accident and improve reliability and
20 produces an improved defense in depth.

21 With this issue, we go to the step three
22 alpha qualitative/quantitative risk assessment with
23 this. So the PRA guys do their thing and they basically
24 -- It=s a degraded grid condition which is a low
25 occurrence/low frequency event coupled with a LOCA

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1 which is low occurrence/low frequency event. It comes
2 out with a 1.34 E-10. You know very low risk numbers
3 associated with that.

4 Now we got into this discussion at the IDP
5 also. The first time this issue came up in front of
6 the IDP we had a good bit of discussion about this. So
7 the solution is to put in a third transformer. You can
8 see at the end of the day you need to do something about
9 this degraded grid/operator action problem. And at
10 the end of the day in March of 2020, you've solved the
11 problem. And you've got an improved reliability with
12 a third transformer. You get improved risk due to the
13 third transformer installation.

14 But there's a significant amount of risk
15 that is associated with the implementation of this
16 project. That is this is a huge project, putting in
17 a third transformer. I've got two startup
18 transformers for each unit.

19 Now I'm going to go put in the third startup
20 transformer. So this is going to be high switch yard
21 work. And the 24KVR and the 500 KVR a lot of work is
22 going to go on non-outage. Switch yard related
23 activity. Rerunning cable, ductwork, a difference of
24 a 4160 volt load for the emergency buses. A tremendous
25 amount of work that's got to happen over the next six

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1 years for the two units. I've got about a 20 man
2 project team to go make this happen.

3 During the implementation phase, we are at
4 increased risk for being able to manage that. There
5 will be some periods of time during the outages when
6 I do all these tie-ins when I'll be down to a single
7 transformer in service and have to go through main
8 transformer backfeed a couple of times to be able to
9 get all of this work done.

10 That's the piece of it that concerns myself
11 and the IDP and the operators. How are we going to
12 manage the implementation of this thing and make sure
13 that we do it safely?

14 I'll say due to the low frequency of the
15 event the current risk is very low and the overall
16 impact I've got an improvement in the end from a
17 reliability standpoint and I've got some risks that
18 I've got to manage as I do the implementation. And the
19 overall effect of that is that we characterize that as
20 a very small to minimal improvement, having those two
21 factors that I have to offset.

22 Now to Don's point, what if we've got that
23 wrong? You'll notice that the whole line from zero to
24 greater than 90 percent everything there is very low.
25 So if I got it wrong, the system here is a little

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1 forgiving in that it=s all going to be assessed as a
2 very low safety significance here.

3 We go through the rest of the aggregation
4 and the importance evaluation. And there=s no hits
5 under security. No hits under emergency planning.
6 None for radiation protection. And a low safety
7 significance for reliability.

8 MEMBER SKILLMAN: So the switch yard is
9 outside of the (Inaudible due to coughing)

10 MR. JOHNSON: So this is a level four
11 priority based on NEI guidance and Hatch IDP left that
12 as priority four item with a project schedule date of
13 March 2020. I=ll say this is my spreadsheet of how I
14 kind of kept up with everything.

15 The IDP goes through and they looked at
16 each one of these projects and they did the NEI
17 prioritization. And then you kind of I=ll say restack
18 them. And I say three initiatives that wound up being
19 a NEI priority two. And then you=ll see several of the
20 level three priority initiatives where all of those
21 systems that we felt like were the obsolescence pieces
22 and also included the reliable spent fuel pool
23 instrumentation.

24 And then the level four, some of the level
25 four is some of the lower priority obsolescence issues

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1 and including the degraded grid and the open phase.
2 Then we had one level five priority that should not have
3 been there. I'll say level five is something that you
4 should have assess.

5 This is the aggregation that the IDP came
6 up with and the final produce of the aggregation --

7 As I look at that, we stepped through the
8 scheduling. This kind of shows you where the schedule
9 is with respect to the aggregation as well.

10 I took this to the plant health committee
11 and let the plant health committee kind of weigh in and
12 see if there was anything that they wanted on the
13 non-regulatory side to move up or move back. But to
14 be honest with you, there was nothing that they felt
15 like needed to be moved. Everything=s got its own
16 budgetary cycle. It=s got design in progress. It=s
17 got funding in the right years to hit the right mark.

18 There were maybe a couple of items, the
19 seismic monitoring system was one item that we said we
20 may go back and reschedule based on its low
21 significance.

22 But out of that, so what=s the bottom line?

23 CHAIRMAN STETKAR: Greg.

24 MR. JOHNSON: Go ahead.

25 CHAIRMAN STETKAR: Could we go back to

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1 that? I was kind of trying to do too much at the same
2 time. Not on the schedule.

3 The rankings here these are one through N
4 within each of the categories. So one, two, three in
5 two. One, two, three, four, five, six in three. And
6 one through eight in four. There was not attempt to
7 rank order those across holistically?

8 For example, Palisades ranked them one
9 through 20. For example, you might have had a four that
10 ranked higher than a three because of other concerns.

11 MR. JOHNSON: It=s there I think.

12 CHAIRMAN STETKAR: Not on this one.

13 MR. JOHNSON: So under NEI party number
14 two, we=ve got one, two and three, right?

15 CHAIRMAN STETKAR: Right, yes.

16 MR. JOHNSON: Okay. And so I guess by
17 definition --

18 MEMBER SCHULTZ: It happened to be in
19 order.

20 CHAIRMAN STETKAR: They happen to be in
21 order. But my question was for example MSIV conversion
22 is number two under category four.

23 MR. JOHNSON: That=s right.

24 CHAIRMAN STETKAR: And whatever diagonal
25 cooler replacements are is number five under three.

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1 MR. JOHNSON: That=s right.

2 CHAIRMAN STETKAR: Was there any attempt
3 to say because of other considerations number two under
4 four ought to be done before number five under three?

5 MR. JOHNSON: No, no.

6 CHAIRMAN STETKAR: Okay. Because I was
7 hearing that from Palisades. I=m trying to
8 understand.

9 MR. JOHNSON: I think the process -- I mean
10 in the process what you do is you sit there and you say,
11 AOkay, guys@ The IDP would say, AIs there any level four
12 issue that you feel like needs to be raised to a level
13 three?@ And that=s your opportunity to elevate.

14 CHAIRMAN STETKAR: Right.

15 MR. JOHNSON: That=s your opportunity to
16 place a higher level of significance on it so that it
17 gets risk ranked holistically against everything else.

18 CHAIRMAN STETKAR: Right. Okay.

19 MEMBER BLEY: That=s fine.

20 MR. JOHNSON: Alright. So what have we
21 learned? Not every project can be assessed by this
22 process. And the other thing is the aggregation
23 process is an extremely valuable tool, particularly
24 looking at it from the reliability standpoint. The
25 reliability component is a very important thing to go

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1 look at.

2 Now when we go do our -- The plant health
3 committee, when we go do our business plan right now
4 in today=s process, if it=s an NRC commitment, it gets
5 a level -- It=s a priority one for plant health. It
6 gets 100 percent. NRC says, AGo do it.@ So it=s by
7 definition number one. Here is the number one list.

8 And this process is like Danny said at the
9 beginning. It puts everything on the table. It=s
10 everything on your plate. So this is the first time
11 we looked through the lens of just look at everything
12 based on safety and reliability and not just because
13 it had a commitment date associated with it.

14 MEMBER BLEY: Has there been any
15 experience so far with them bouncing this off of the
16 staff to see if -- I mean we=re going to hear from the
17 staff later.

18 MR. JOHNSON: I=ve been at -- I went to
19 Robinson and the staff came and observed Hatch. And
20 I was at some of the early dialogue here in the
21 Headquarters. And I think in general the same kind of
22 positive value.

23 MEMBER BLEY: It seems like running into
24 sand. Ours have three number ones.

25 MR. JOHNSON: Except I=ll say every one of

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1 those projects, particularly every one of those
2 regulatory projects, has got some regulatory subject
3 matter expert associated with it who's got ownership
4 for it as well. So there's always this part of people
5 who say, "What about my project? I live and breathe
6 for this." Making sure that it all gets assessed in
7 the aggregate is really the point I want to make.

8 MEMBER BLEY: How did you find working
9 through the set of items and questions? Did you run
10 across anything that looked like it could work better
11 in another way? Or did it just work pretty nice going
12 through the safety and then the questions that let you
13 evaluate safety and reliability and its questions?

14 MR. JOHNSON: The thing that struck me the
15 most I guess personally as I came through this thing,
16 I would have thought there would have been a large
17 volume of pieces of work that all of the pilot plants
18 wanted to say "I want to change this and I want to move
19 this."

20 When you step back and look at this, the
21 bottom line that I'm going to make here in a minute is
22 we went through this and we got an assessment of risk.
23 And there's very little that I want to change. If you
24 gave me the opportunity to say "What would you like to
25 do," I would tell you what I would like to do and it's

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1 based on common sense, good decision making based on
2 safety, not based on some other just AI want to do it
3 and we don=t have the resources.@

4 The aggregation is very beneficial. It
5 provides that everything on the plant perspective that
6 I really don=t see anything else presiding which is very
7 important, very important. Let=s look at all of it
8 rather than just a piece of it.

9 MEMBER BLEY: Start looking at number
10 four.

11 MR. JOHNSON: Rigorous and repeatable
12 process. There were a few things that were a little
13 different. I don=t know that I completely got cyber
14 security just right. I think some of my colleagues got
15 cyber security more right than I did when I go to look
16 at their product. But I=m not coming asking to do
17 anything different with cyber security.

18 You know this was not easy. This was not
19 something that we threw together in a week. There were
20 a good bit of resources that went into doing this. You
21 know a lot of people put in a lot. It=s more than just
22 minor.

23 So the PRA insight driven and not a PRA
24 science project. We just can=t afford to go do PRA
25 analysis, exhaustive PRA analysis, on everything. And

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1 those guys are premium already. So I really like the
2 ability to just give it your PRA insight versus having
3 to go do a great level of science project on everything
4 that you touch and consider.

5 Again, the reliability component is very
6 much needed as an assessment tool. When I got into all
7 of the obsolescent parts and pieces, that got elevated
8 and brought to light through the reliability component
9 of this process.

10 Alright. So out of all that, you kind of
11 push back from the table and say, AOkay. What did you
12 do?@ I come to the end of it and I would say, AI=ve
13 got one project that=s the degraded grid project that
14 I would like if we took the next step in this process
15 of trying to reschedule something, that=s the one piece
16 that I would reschedule.@

17 And you ask me why. I went to the projects
18 manager associated with this and I asked him. I said,
19 ATim, what would it mean to you if I picked that data
20 up from March of 2020 and gave you two more years?@ And
21 he was overjoyed at the thought of that.

22 CHAIRMAN STETKAR: Because of retirement
23 date.

24 (Laughter)

25 MR. JOHNSON: But why? The reason why is

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1 because for a project like this -- this is a six year
2 project -- and he is wide open today trying to figure
3 out how he=s going to make all these pieces come
4 together and make that work. And he=s worried about
5 being able to get it done and not have a negative impact
6 during the implementation.

7 ``And he=s saying, AGreg, if you can get me two more
8 years, that will give me a little breathing room. That
9 will give me a little cushion so that if worse comes
10 to worse, I=m not feeling like I=m under the gun to go
11 make something happen. And I got another cycle to go
12 get this thing implemented.@

13 That=s safety.

14 CHAIRMAN STETKAR: Did you look at all --
15 I can resonate with that, the down sides of that. You
16 put up a number. I don=t remember names. You put up
17 a number 1.34 X 10-10.

18 MR. JOHNSON: Yeah.

19 CHAIRMAN STETKAR: Which is a pretty small
20 number. Precise, but it=s pretty small. Did you look
21 at also trying to quantify the down side, the stuff you
22 were just talking about, to quantify the likelihood of
23 total or partial losses of power during the
24 implementation?

25 MR. JOHNSON: Yes, but it=s still a

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1 drawing board in progress. Right.

2 CHAIRMAN STETKAR: Yeah, obviously.

3 MR. JOHNSON: Your intelligence is only as
4 good as I don't know exactly what that thing looks like
5 three or four years down the road.

6 CHAIRMAN STETKAR: Right.

7 MR. JOHNSON: So what my PRA expert did is
8 he went out there and he did a qualitative assessment
9 of we're going to be working in the switch yard. I'm
10 going to assume for the better part of a year. And so
11 let me up the initiator for loss of offsite power and
12 came up with an assessment based on that.

13 CHAIRMAN STETKAR: So he did do that.
14 Okay. Good. Thanks.

15 MEMBER SCHULTZ: Greg, a couple of
16 questions. You had two that you said could reschedule.
17 You had a priority level four.

18 MR. JOHNSON: Right.

19 MEMBER SCHULTZ: You had two you could
20 reschedule. One I presume you decided not to pursue
21 that because of the obsolescence and the timing.

22 MR. JOHNSON: No, the other one is the open
23 phase issue which is not a hard NRC commitment so much
24 as it is an NEI commitment at this point in time. And
25 there's a whole bunch of discussion about what's the

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1 right solution and safety-related versus non-safety
2 related and a whole bunch of discussion back and forth.
3 Hatch along with the rest of the industry is still
4 struggling with what is the solution and what=s the due
5 date and what=s the commitment date.

6 So we=ll talk with our executives and our
7 planners about what=s the right time frame for that
8 implementation. As it stands today, the NEI
9 commitment, the industry executives through NEI and
10 SIAC committed to a 2017 date.

11 MEMBER SCHULTZ: The other question is on
12 your list of benefits or lessons learned you had in one
13 bullet that this is a repeatable process, a good feature
14 of it. Did you intend by that to mean if this listing
15 was reevaluated again that you=d likely get the same
16 answer? Or did you mean that the team can go forward
17 and use the process on a consistent basis to evaluate
18 other projects?

19 MR. JOHNSON: Both. I think both is true.
20 I think the process is sound enough to pick it up now
21 and use it again next year in the same way. It=s
22 repeatable in that measure. But I also think if you
23 went out and took another group of people you would come
24 to the same general conclusions, not an exact stamp.
25 There would be some variation, but you would get the

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1 same results out of it.

2 CHAIRMAN STETKAR: You=d still need the
3 same passionate operators to elevate the relief valve.

4 MR. JOHNSON: I=ll tell you the PRA -- Not
5 only that, the PRA, the devil advocate, my PRA lead
6 principal engineer, he was in everybody=s business.

7 MEMBER SCHULTZ: Do we make the PRA lead
8 just by definition the devil=s advocate?

9 (Laughter)

10 Generally, that individual is likely to be
11 that.

12 The question I=ve got about the NEI
13 aggregation and priority approach, it=s guidance.
14 Right. So I was wondering in that situation did the
15 team feel comfortable about pushing back and elevating
16 that project, I mean, the priority from three to two.

17 MR. JOHNSON: Yeah.

18 MEMBER SCHULTZ: Because in the guidance
19 itself for NEI, they don=t cover all the bases.
20 They=ve got this or this or this. They don=t have what
21 you had in that case which left you in priority three.
22 You had one component that was assessed as level three
23 and then you had an and which is not in the table if
24 you will.

25 MR. JOHNSON: Right.

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1 MEMBER SCHULTZ: Either on two or three.
2 And I mean you=ve got some latitude to push something
3 in two to three or four to three.

4 MR. JOHNSON: Right.

5 MEMBER SCHULTZ: From three to two or four
6 to three.

7 MR. JOHNSON: Right.

8 MEMBER SCHULTZ: Did you have discussions
9 with NEI over that process?

10 MR. JOHNSON: I would say this. It was a
11 good, healthy discussion. It was also operator
12 driven. And it was I=ll say the sense of this is we=ve
13 lived this pain.

14 MEMBER SCHULTZ: Right.

15 MR. JOHNSON: And the NRC observer also
16 gave positive feedback. After the meeting, his
17 comment was AI saw that as being a positive that people
18 were willing to elevate without being constrained.@

19 MEMBER SCHULTZ: But again my comment is
20 when I look at the NEI guidance I don=t see anything
21 that would constrain you from bumping something up from
22 four to three or three to two.

23 MR. JOHNSON: Right.

24 MEMBER SCHULTZ: And this case it
25 certainly seemed like the right thing to do. And you

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1 had some evidence that could have been used if you
2 coupled the condition and you had the reliability piece
3 of it to move forward with bumping it up if you wanted
4 to provide some evidence. On a case by case basis, you
5 wouldn't want to apply that in a general sense because
6 you'd be throwing a number of things up that perhaps
7 don't warrant.

8 MR. JOHNSON: I'll say that I saw the
9 willingness to do it and the capability to do it. But
10 I also saw that the IDP felt like the result that they
11 got by and large was the right result.

12 MEMBER SCHULTZ: Right.

13 MR. JOHNSON: It was four. Is everybody
14 okay with a four? Maybe a little discussion. But I
15 think the takeaway from it was that in most cases it
16 was right to start with out of the process.

17 MEMBER SCHULTZ: I also noticed that on
18 the Fukushima initiative related to spent fuel pool
19 instrumentation that in comparison to the Palisades
20 evaluation you had a benefit provided in radiation
21 protection.

22 MR. JOHNSON: That's right.

23 MEMBER SCHULTZ: And so just curious as to
24 why that appeared, why you feel that appeared on your
25 list. I'm not going to ask Palisades why it didn't

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1 appear on theirs. But one could expect some
2 differences in terms of evaluation.

3 MR. JOHNSON: Yeah. You know I don=t know
4 because we didn=t go back and do a cross functional
5 pilot-to-pilot check and to say AHow did you get low
6 and I got medium in this regard.@ I=ll say that my IDP
7 felt like it was -- You certainly have the potential
8 to affect effluent, radioactive effluent.

9 MEMBER SCHULTZ: Right. We talked about
10 that.

11 MR. JOHNSON: Based on not having the
12 instrumentation. Based on the Fukushima. So we
13 graded that a level of importance higher than
14 Palisades. But I didn=t go through the Palisades study
15 or IDP process.

16 MEMBER SCHULTZ: Just in that regard, your
17 priority ranking came out the same. But the evaluation
18 was a little different.

19 MR. JOHNSON: Right.

20 MEMBER SCHULTZ: Thank you.

21 MR. JOHNSON: You=re welcome.

22 MEMBER SKILLMAN: Greg, let me ask this.
23 Of the 20 projects that you=ve selected, are there some
24 that you would have rather not have chosen because there
25 were others that were deeper in the bucket that might

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1 have been more valuable?

2 MR. JOHNSON: No. There were some others
3 that I felt like were of very little value. So when
4 John Butler said AGo pick 20 projects@ I went to my full
5 business plan which had 50 projects in it and said,
6 AOkay. This is just my honest -- I=m not interested
7 in talking a whole lot, you know, spending a whole lot
8 of work on all the Fukushima stuff. Other people have
9 already done that.

10 So what is important to me? This is
11 important. This is important. This is important.
12 We=ve got to do this. We=ve got to do this. This is
13 really big. And I=ve got this commitment and this
14 commitment and this commitment@ and came out with what
15 I thought was the 20 most important things we need to
16 be focused on.

17 MEMBER SCHULTZ: So it was a personal
18 importance ranking that you used to select those.

19 MR. JOHNSON: Yes. I had some -- How do
20 you know that you=re getting the right mix is the
21 question of where you=re headed.

22 MEMBER SCHULTZ: I thought that=s how you
23 selected them at first when you described it that you
24 wanted to have a good sample to apply the process to.

25 MR. JOHNSON: Right.

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1 MEMBER SCHULTZ: But you said there was a
2 little bit of a personal prioritization that went into
3 it as well.

4 MR. JOHNSON: Yeah.

5 MEMBER SCHULTZ: Then not selecting those
6 things that you didn't feel needed to be evaluated
7 separately from where they've already been evaluated.

8 MR. JOHNSON: Right. I mean you don't get
9 an value if you come away with a bunch of level five
10 priority stuff. And you're not looking at the level
11 two and three stuff. It wouldn't have been doing the
12 pilot process a good service if we had to pick the long
13 projects.

14 MEMBER SCHULTZ: Thank you.

15 MR. JOHNSON: Anyone else?

16 CHAIRMAN STETKAR: Anything else for
17 Greg? Greg, thanks a million. We really appreciate
18 the time and effort in getting us educated.

19 What should we do here? Nobody ever
20 complains about taking a break. So let's take a break
21 until 2:05 p.m.

22 (Whereupon, the above-entitled matter
23 went off the record at 1:49 p.m. and resumed at 2:07
24 p.m.)

25 CHAIRMAN STETKAR: Let's reconvene. And

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1 we=ve had a little bit of change of plans to accommodate
2 one of our participants who needs to leave by 3:00 p.m.
3 or so. And I understand, John, you=ve got some
4 insights you=d like to give us from your experience.

5 VII. NRC STAFF RESPONSE TO COMMISSION DIRECTION ON
6 PROPOSED INITIATIVE TO IMPROVE NUCLEAR SAFETY AND
7 REGULATORY EFFICIENCY

8 MR. GRUBB: Sure. I=m John Grubb from
9 Xcel Energy. Thank you for this opportunity. I=m the
10 General Manager of Fleet Operations and Fukushima
11 response is my primary job for Monticello and Prairie
12 Island. I=m leaving to go to a Fukushima meeting in
13 New Orleans.

14 So Xcel Energy took part in both the
15 tabletops back in February as well as the pilot that
16 we held. The pilot we did in September was
17 specifically for our Prairie Island plant.

18 Very similar to the rest of my colleagues.
19 I found the process to be pretty robust. It=s not
20 perfect. It doesn=t work for every project or every
21 regulatory item.

22 An example we came across is there are
23 certain environmental regulations where you could go
24 through this process, but you may have local
25 environmental regulations that you still need to

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1 address. So it doesn't cover everything for every.
2 And we talk about that in the guidance document and try
3 to make that very clear.

4 Two critical ones that I want to talk
5 about, one more so than the other. When we did our
6 tabletop back in February, one of the things we tried
7 to do is we tried to show that every utility has X amount
8 of money, capital money, for a given year and you do
9 as much as you can with that capital. Many of the
10 things that fall below the line you put out in future
11 years and you do that balancing act every year. It's
12 kind of a continuous process.

13 We picked one at Monticello that had fallen
14 below the line three operating cycles in a row which
15 was a circulating water pump motor. Monticello is
16 about 43 years old. The original motors are still
17 there. We've been taking very good care of them, but
18 they'd never been shipped off and rewound or replaced.

19 The project was to buy a spare and then get
20 into a rotation cycle. Three cycles in a row one fell
21 below the line. Monticello is a single unit BWR and
22 we have on the order of \$38 million mandatory capital
23 issues driven by Fukushima cyber security and other
24 things. So about \$38 million in regulatory driven
25 projects.

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1 So that project got pushed until the next
2 operating cycle. That motor failed a month ago.
3 Operational transient. Because of the time of year,
4 the plant was able, the operators were able, to reduce
5 power and keep the plant on line. But the plant=s been
6 running at 32 percent power now for a month because we
7 had made a bad decision a couple of times over.

8 So a process like this that will elevate
9 those risk decisions and the regulatory side of this
10 process would have driven us I believe to have taken
11 action with that motor. We never would have allowed
12 it to get to the point of failure. That was one example
13 I just wanted to share.

14 MEMBER SKILLMAN: John, if you would
15 explain how the regulatory decision making would have
16 required a BOP motor.

17 MR. GRUBB: I=m sorry. Not the
18 regulatory decision making. The reliability part of
19 this process --

20 MEMBER SKILLMAN: Reliability.

21 MR. GRUBB: -- would have elevated that to
22 the point that we would have maybe challenged some of
23 the regulatory atmosphere. An example in our tabletop
24 was cyber security. Cyber security is a great rule.
25 Our plants are through I think the first seven steps.

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1 And we believe most of the safety benefit for cyber
2 security has been realized now. Step eight is
3 primarily, not entirely but primarily, administrative
4 process wise.

5 But I=ve got a couple of million dollars
6 at each of my plants I have to spend to meet the
7 deadlines imposed by that order. If I had a process
8 like this that maybe allowed me to negotiate the timing
9 of that last step maybe I could have gotten something
10 like this addressed before it failed.

11 MS. MYERS: John, if I could help you on
12 that.

13 MR. GRUBB: Yes.

14 MS. MYERS: On the circ water pump though,
15 if you look at it you would have answer or you could
16 have answered yes to question one because it was an
17 initiating event. Then if you looked at -- I don=t know
18 that we would have been smart enough to look at -- you
19 were going to operate for a month at 32 percent power,
20 these plants aren=t made to run at 32 percent power.

21 MR. GRUBB: Right.

22 MS. MYERS: Or 50 percent power. They=re
23 made to run at 100 percent power. So the risk that=s
24 out there for operating the plant and the different
25 things, the different stresses you=re putting on the

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1 plant, may have taken this to being something that you
2 would have gone into PRA.

3 MR. GRUBB: Our collective experience at
4 Monticello -- I=ve worked there for 25 years -- was we=d
5 never run with single circ water pump that any of us
6 could remember other than start-ups and shutdowns. So
7 you=re putting yourself into another operating regime
8 where you don=t have the benefit of your 43 years of
9 operating experience. That was the one. I just
10 wanted to share those couple examples. And I
11 appreciate that.

12 CHAIRMAN STETKAR: And they=re good. And
13 thanks a lot. It also helps because it sort of
14 reinforces this thought process that if you do apply
15 the process holistically it may be able to help
16 reorganize things.

17 MR. GRUBB: Yes. Thank you.

18 CHAIRMAN STETKAR: Really appreciate
19 that. Thank you, John.

20 Sonja, thank you for being accommodating.

21 MS. MYERS: Oh yes. Not a problem.

22 Okay. So Robinson Plant we participated
23 in both the tabletop and the pilot. I was selected
24 basically because of the different experiences I had
25 within engineering. I=ve been part of equipment

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1 reliability now for the past two years. I've spend
2 roughly 30 years in design out of my 32 years of
3 experience. Had about a year in licensing. So just
4 call it rag com math when you're looking at it. Then
5 I did some project management as part of the design
6 organization.

7 I've been at multiple stations. I'm at
8 Robinson right now. Started my career at Palo Verde.
9 I spent 21 years there. I spent about 18 months at
10 Comanche Peak right before I went to Robinson and spent
11 seven years at Prairie Island from 2003 to 2010 for
12 those that know Prairie Island.

13 CHAIRMAN STETKAR: Other than the fact
14 that it's really cold at Prairie Island in the
15 wintertime, it's a good career path as far as
16 environment is concerned.

17 MS. MYERS: I think the upper Midwest.
18 But the thing at Prairie Island was we had a lot of
19 significance determination processes going on during
20 my stint there. We had energy line break. We had the
21 reconstitution of the q-list. And then we had internal
22 flooding concerns as well as we had some operational
23 and ePlan findings going on as well. I've been in and
24 supported the significance determination process quite
25 a bit during my career.

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1 Our Duke participation, we wanted to
2 optimize the limited resources. Six plants, seven
3 plants when you include Crystal River. We need to make
4 sure that we're doing the right projects at the right
5 time.

6 There was an immediate need to prioritize
7 regulatory actions versus plant-identified actions.
8 When you look at, as you're going through this process,
9 when you have plant-identified actions, it's really
10 things that you're thinking are important to the
11 station and important for safe, reliable nuclear
12 operation that isn't driven by industry experience
13 necessarily. If you would liken it to it is your
14 forward-looking issues before they become large enough
15 to be industry issues. And then we wanted to make sure
16 that we had the better prioritization leading us to
17 better plant safety.

18 So why Robinson? We're a single unit
19 plant. We're an old plant. And so the cost of each
20 regulatory issue for the single unit plants is greater
21 than if you have two or three plants to optimize across.

22 Pre-GDC plants propose unique
23 opportunities and challenges. We heard from Hatch.
24 They had some operator actions that were approved in
25 the original design basis that led to some things that

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1 made them have a regulatory commitment. Pre-GDC
2 plants lead to -- You need to make sure your staff
3 understands what the design basis was for the plant,
4 what the licensing basis was for the plant and why those
5 things are there. And as you're changing the plant
6 that you preserve the robustness that was designed into
7 the plants. You know, especially when you're talking
8 these old plants. They were designed on slide rules.
9 And there was some more margin added to those plants
10 that isn't necessarily even evident to people of my age.
11 We got to use calculator and computers when we were
12 going through engineering school, where people five
13 years ahead of me did not. They were doing slide rules
14 and hand calcs.

15 CHAIRMAN STETKAR: Engineers were
16 engineers damn it.

17 (Simultaneous speaking)

18 MS. MYERS: And you know what the
19 difference was between the log 10 and the log E, right?

20 MEMBER SKILLMAN: We did.

21 MS. MYERS: So it is a different world and
22 it happened very rapidly. The difference between
23 three years ahead of me in school and my class was
24 remarkable. My class in high school was the first ones
25 that did not learn how to use a slide rule. It's a big

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1 difference.

2 MEMBER POWERS: You young whippersnapper
3 you.

4 MS. MYERS: And then Robinson also had an
5 opportunity for the Duke fleet based on our operating
6 cycle. That is we didn't have an outage in 2014.

7 Our panel, we selected diverse people.
8 When I said we have outside Duke experience, we didn't
9 have somebody outside of Duke today. But they had
10 experience like myself at other plants. We had senior
11 management. We had operations. We had engineering.
12 We had PRA, licensing, maintenance, training. For
13 selected topics we had ePlan manager as part of the
14 team. For selected topics, we had our rad protection
15 manager as part of the team.

16 We had our site director who is now our site
17 vice president. He's got 40 years of Duke experience
18 including operations, engineering and senior station
19 management at three Duke sites as well as at the
20 corporate offices.

21 We had an operation person who has 30 years
22 nuclear experience. He's held RO and SRO licenses at
23 Catawba. He's functioned in the corporate office and
24 then currently he's the assistant ops manager for
25 Robinson.

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1 We had a person that=s had 30 years at Duke.
2 He is currently at major projects. He=s held various
3 leadership roles in engineering and maintenance. And
4 primarily the experience has been at Robinson. He=s
5 also had some experience at Brunswick.

6 We had our probabilistic risk analysis
7 manager, Bruce Morgen, who is here with me today.
8 Thirty-five years nuclear experience and has had the
9 PRA for Brunswick, Harris and Robinson. He=s also had
10 some safety analysis and fuel background.

11 We had our licensing manager.
12 Thirty-three years of experience at Robinson including
13 being the fire protection engineer as well as the
14 manager of the programs area. Essentially, he had my
15 job before I had my job as far as equipment reliability
16 and components manager.

17 We had a couple of gentlemen from ops
18 training. Robert Shane had 30 years nuclear
19 experience. He was an SRO at Robinson and was licensed
20 for 18 years. He has since left the company, but he
21 was the supervisor of operations initial training.

22 And then we had Gary Swider who has 38 years
23 of nuclear experience with extensive experience in
24 engineering management most recently at St. Lucie and
25 then at Millstone. And currently he is the engineering

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1 recovery manager for Robinson.

2 How did we select our projects? We wanted
3 to do a balance. So we selected 11 regulatory issues
4 that were someplace in the scoping design and
5 implementation.

6 And then we selected reliability issues
7 that were near the funding line. We were asked to get
8 the list together. We were at the point of putting
9 together the 2015 budget for projects. And we wanted
10 to make sure that we took a hard look at those that were
11 near the funding line and put them through the process.

12 MEMBER SKILLMAN: Sonja, what do you mean
13 by Anear the funding line@?

14 MS. MYERS: So you have the line you draw
15 for how much money you=re going to invest in the company
16 or into the plant. And we selected those that were just
17 slightly above the cutoff point and slightly below the
18 cutoff point.

19 MEMBER SKILLMAN: Thank you.

20 MS. MYERS: And that way it would give us
21 a better understanding of where we should prioritize
22 those projects.

23 MEMBER SKILLMAN: Thank you.

24 MS. MYERS: And then we had other issues
25 as recommended by station management.

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1 So our 11 regulatory based projects, we did
2 all the Fukushima mods. So that was three Fukushima
3 mods. I=m sorry. 805 mods. That was three 805 mods.
4 It was incipient detection and then we also did the
5 Fukushima mods, the electrical and mechanical, cyber
6 security. TSTF 523, that would be putting your generic
7 letter 0801 testing into the tech specs or your void
8 for ECCS, the testing to find those within the tech
9 specs.

10 We looked at the insulation replacement
11 for GSI-191, the open phase for the Byron event, a
12 material change out for the whole downstream for
13 MRP-227 alpha. And then lake level indication which
14 would be for our ultimate heat sink.

15 One thing I want to say about this because
16 I=m not sure it fits in any place else is when you have
17 a long term issue like GSI-191 and you have done 90
18 percent of the benefit, trying to evaluate that last
19 bit to be finished up doesn=t work well for this
20 process. If we were talking back before we had done
21 anything with sump screens, before we had done anything
22 with monitoring, you know, if you were at the start of
23 GSI-191, it would be whole different conclusion than
24 it is at the very tail end of that.

25 MEMBER SCHULTZ: Should you apply it at

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1 the end.

2 MS. MYERS: I don=t think we probably
3 should have. But again we were piloting process. So
4 we were trying this out.

5 CHAIRMAN STETKAR: Should you apply it if
6 you=re way back on day zero of GSI-191?

7 MS. MYERS: Well, I think if you talk about
8 going way back to day zero on GSI-191, you=re talking
9 about things getting in on day zero. So far enough
10 along to know that it is critical.

11 CHAIRMAN STETKAR: It is an issue.

12 MS. MYERS: Yes, there=s an issue. It=s
13 credible for things to get past your sump screen to get
14 into the in-vessel fuel, to have impacts to your motors
15 and your pumps, actually your pumps than your motors,
16 for your safety related ECCS pumps. I think you would
17 come out that that would likely end up being a priority
18 two or a project level two with impacts to PRA because
19 you=re talking about these things could cause core
20 damage.

21 CHAIRMAN STETKAR: But what I=m hearing
22 from you is you think that this process could work for
23 that type of issue.

24 MS. MYERS: I think it could.

25 CHAIRMAN STETKAR: Even though it=s not

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1 defined as finely as change out of a particular motor.

2 MS. MYERS: Right. I think it can be
3 applied. You have to be far enough along to know what
4 the risk is to your plant. So you have to be able to
5 answer your step one questions.

6 CHAIRMAN STETKAR: Okay.

7 MS. MYERS: What initiating events am I
8 talking about? What mitigating events am I talking
9 about or mitigating pieces of equipment? How can this
10 impact those? So going back to if you're trying to do
11 805 before you really have all your scope done it would
12 be difficult.

13 CHAIRMAN STETKAR: Difficult to do.

14 MS. MYERS: Right.

15 CHAIRMAN STETKAR: Because that's too
16 broad reached.

17 MS. MYERS: It's too broad.

18 CHAIRMAN STETKAR: Okay.

19 MS. MYERS: It's just too broad. So also
20 we found for your long term material issues. So for
21 the MRP-227 issue it is just a long degradation process.
22 And then if you let it go too far, it's gone. It does
23 not work well for that. But that's where you have your
24 industry panels help you with that to say, ALook, this
25 is really important. If we let it tip, we're not going

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1 to be able to recover the material degradation that=s
2 happened from the neutron embrittlement.

3 And then you have to have truth in
4 advertising. When we got to the lake level indication
5 project, it was actually an alternate lake level
6 indication, not the one that we had specified for
7 knowing what our ultimate heat sink level was.

8 Reliability based projects, you see loss
9 of RCP cooling on the top there. We talked about it.
10 There=s a portion of it that=s for 805. But there=s
11 a portion of it that is for other events. So that=s
12 why we characterized that as reliability based. If we
13 weren=t going to do 805, we were still going to do the
14 seals.

15 We have a valve on the secondary side that
16 when we changed from fail open to fail close. That was
17 based off of a PRA model recommendation that would
18 reduce the risk.

19 We had a local operator action to reset
20 breaker for instrument air compressor. When we put
21 this through the process, we had some very angry
22 operators. They thought we were doing this to kill the
23 project. The actual results that this one came out as
24 one of the higher ones for reliability because
25 instrument is so important to us.

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1 MEMBER SKILLMAN: What were the operators
2 concerned about, Sonja?

3 MS. MYERS: They thought as many people
4 did that this was a way to kill projects.

5 MEMBER BLEY: Not do a hardware fix.

6 MS. MYERS: Not do a hardware fix. To
7 cancel the projects.

8 CHAIRMAN STETKAR: Most of the time those
9 guys are doing it okay. The heck with them.

10 MS. MYERS: Exactly, exactly. And just
11 the opposite came up on this one. It did go through
12 to step three for us.

13 The next one, operator burden for
14 inhibiting fire suppression, during our diesel runs,
15 our monthly diesel runs, we inhibit the fire
16 suppression in our safety-related electrical room.
17 And now you think about it and Dana was talking to me
18 a little bit about Robinson=s fire. This is where
19 Robinson=s -- This is the room that Robinson=s fire
20 happened in. Fire is our biggest PRA risk
21 contribution. So this again, the operators should not
22 have had any concern with us screening this one through
23 the process to see where it would end up.

24 We had some vacuum switches on the
25 condenser vacuum system. It was an obsolescence

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1 piece. We're doing a lot of PMs on those just to see
2 where that would land as well. We have an obsolete CO2
3 system in our cable vault room.

4 We had a communication repeater in
5 containment. Robinson has fire detection in the
6 containment as do most plants. And the fire detection
7 containment, every once and a while will give a false
8 reading of an indication and give an alarm. Well,
9 Robinson has declared unusual events because we can't
10 get into containment and verify that that is a valid
11 fire and get the communication back out to the control
12 room within the 15 minutes that we have to classify
13 that.

14 Diaphragm valve replacements in our CVCS
15 system, again just obsolete parts. Long term focus
16 reduction type thing.

17 Loose parts monitoring upgrade. Our
18 loose parts monitor was professed to be obsolete.
19 Again, truth in advertising. When we looked at it, it
20 isn't obsolete. It just isn't the preference of the
21 system engineer at this point.

22 (Laughter)

23 Going back to Dennis' point.

24 MEMBER POWERS: Not the question is
25 whether the systems engineer is obsolete.

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1 MS. MYERS: Right. But going back to
2 Dennis= question, when is it going to go obsolete? We
3 don=t anticipate that it will be more than a year or
4 two before it is obsolete.

5 We had an isolation valve in the RWST
6 supply to our charging pumps. And that was actually
7 a maintenance burden. We have to do a freeze seal if
8 we are going to do any maintenance on that or during
9 the RWST.

10 And then the last one which we=ll go into
11 deeper detail was we were going to replace our bravo
12 station battery with a larger capacity battery. And
13 we had a lot of emotion around that one. But that
14 really hit the I believe button for many people at the
15 station because we were able to get even the people who
16 were advocates for that larger battery to concur with
17 the conclusion of that. And we=ll go into that a little
18 bit more.

19 So we have three examples. The first two
20 ended up being priority five items for us or very low
21 safety significance. And we=ll go through how we came
22 to those conclusions. And then the last one was our
23 highest risk impact project which was a medium risk.

24 So just a bit of history on the ECCS voiding
25 issue, many plants and Robinson was one of them

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1 committed to implementing TSTF-523 which proposed
2 modifying the existing surveillance requirements for
3 gas accumulation and adding some surveillance
4 requirements into the tech specs for RHR shutdown
5 cooling containment spray. So Robinson like many
6 plants committed to this before the TSTF was very well
7 developed and as part of that was put lower in priority
8 on NRC inspection of the gas voiding generic letter.

9 We had conditions of operations for ECCS,
10 RHR, shutdown cooling and containment spray. And the
11 idea here was that you would add some statements within
12 the tech specs to acknowledge that you had to manage
13 gas voids. Robinson like many other plants said the
14 system had to be operable, but did not acknowledge that
15 gas voids could impact the operability of the system.
16 Again, due to the age of our plant, we have done improved
17 tech specs at Robinson.

18 So we took some actions as did all the other
19 plants to the response where we would do void
20 inspections on a periodic basis. And if those void
21 inspections came back having identified voids we would
22 take actions to vent those voids.

23 If you look at our history, in the early
24 days we found some voids. We found some large voids.
25 We took some actions. We vented them. We did some

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1 modifications, put vents in. We did some changes to
2 procedures so that maintenance as a finished up
3 maintaining pumps would do some voidings. The
4 conclusion was that we really didn't feel that
5 implementing the changes into tech specs where we would
6 go from a quarterly test to a monthly test would benefit
7 nuclear safety.

8 We'll go through the questions. We went
9 through step one, any impact. Question two we would
10 have improved performance of the emergency core cooling
11 systems. If voids were found, we would know them
12 quicker and we would be able to take actions quicker
13 if we were doing monthly tests.

14 For question three which has to do with
15 really dose, we would improve the performance of
16 containment spray functions including the long-term
17 containment cooling. And that's why we would say that
18 was yes. Same sort of thing. If we were looking for
19 voids more frequently and found voids and mitigated
20 those voids, we would have more reliable containment
21 spray function.

22 And then last, improves the defense in
23 depth for ECCS functions and specifically we're looking
24 at if you have voids you're going to impact your RCS
25 pressure, your heat removal and inventory control if

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1 you don=t take action. So we saw that as being
2 positively impacted.

3 Going on to step two, was it more than
4 minimal? We=ve taken actions from the generic letter.
5 We=ve been doing quarterly tests. They have been
6 effective in detecting and preventing the voids at
7 Robinson. So going from being quarterly to being
8 monthly was not a discernable change by changing the
9 commitment from the generic letter response to
10 including it into tech specs.

11 Looking back at our past two years, the
12 times we have found voids is as we=re coming out of the
13 outage which is where you would expect them. We=ve
14 vent them and then we don=t see them again. Going back
15 years before that, we were learning just like the rest
16 of the industry. So about 2011 is when Robinson had
17 the change where we weren=t seeing very many voids other
18 than coming out of the outages. When we did see them,
19 they were smaller in size.

20 Again, the change would have a positive
21 impact on the dose received during the accident
22 scenarios where we needed long term containment
23 integrity. But again based on the existing monitoring
24 we judged this to be minimal. Again, if we don=t have
25 voids and we=ll find them more looking monthly, it

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1 wouldn't help us more than minimal.

2 And then again question five is not more
3 than minimal since the testing is already being
4 performed. It's not adding a defense in depth
5 function. It would be just performing the testing that
6 we do already. And since we're not finding them on a
7 quarterly basis, we felt like this really didn't go on
8 to help us.

9 Going on to the other areas, this is where
10 Robinson looked at a little bit differently. This
11 change would actually negatively impact equipment
12 reliability. And the reason it would negatively
13 impact equipment reliability is there are personnel
14 that will be unable to perform maintenance or operation
15 activities because they're out performing these void
16 inspections. And given the limited resources that you
17 have for operations and maintenance, we felt that
18 taking away from other activities that they would be
19 doing would negatively impact the reliability of the
20 equipment overall.

21 CHAIRMAN STETKAR: When you ask about --
22 But can't you say that for everything? If I have ten
23 things to do, if I don't have to do number ten, I can
24 do the other nine. If I have nine things to do if I
25 don't have to do number nine, I can do the other eight.

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1 MS. MYERS: Right. So I have ten things
2 to do or I have the personnel to do ten things which
3 are the most important ten things to do.

4 CHAIRMAN STETKAR: Well, that=s true.

5 MS. MYERS: And that=s the way that we were
6 looking at it was something likely on the secondary side
7 would be dropped from doing rounds or preventive
8 maintenance such that we could do this void inspection
9 on a monthly basis versus a quarterly basis.

10 MEMBER BLEY: Is this more than just
11 opening an event seeing that they are --

12 MS. MYERS: It is. It takes specialized
13 people to look with NDE type of equipment to see if the
14 pipe is full.

15 CHAIRMAN STETKAR: Back when I was
16 checking --

17 (Simultaneous speaking)

18 A little water came down. You closed it
19 and it was fine.

20 MEMBER SKILLMAN: I think this is a real
21 important issue. And I think it=s very subtle. And
22 I=m glad you characterized it, Sonja, the way you have.
23 So you say we=re going to take a hit on ER.

24 MS. MYERS: Yes.

25 MEMBER SKILLMAN: My thought would be

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1 there needs to be another category in importance
2 characterization that has to do I say staffing, but not
3 from a station staffing perspective. I'm not
4 suggesting more people.

5 MS. MYERS: Right.

6 MEMBER SKILLMAN: A recognition of who has
7 to do what under certain conditions in the plant. I'll
8 give you another example. Most of the plants have
9 within the on-station team a fire brigade.

10 MS. MYERS: That=s correct.

11 MEMBER SKILLMAN: On shift right now at
12 all the nukes is a subpopulation of the people on shift
13 that are EMTs.

14 MS. MYERS: That=s correct.

15 MEMBER SKILLMAN: So under the right
16 circumstances perhaps the most knowledgeable man and
17 woman in the control room turns out to be the EMT that
18 is called out because an individual fell down the
19 stairwell. It seems like maybe among these five
20 categories there=s one more that would be a critical
21 talent set or critical people.

22 You make a good point to do the gas
23 identification in the pipes you need people who have
24 either your T capability but they=re really ISI kind
25 of people.

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1 MS. MYERS: That=s right.

2 MEMBER SKILLMAN: And they=re unique.

3 MS. MYERS: That=s right.

4 MEMBER SKILLMAN: And a station may only
5 have three or two.

6 MS. MYERS: Correct. Or a corporation
7 might only have five.

8 MEMBER SKILLMAN: Five or three for a
9 couple different units. So I=m wondering if like John
10 said and Dennis said you could make that same argument
11 for almost any one of these issues. Could it be that
12 there=s another critical category that is unique skill
13 set requirement that could be a tipping point.

14 MS. MYERS: Right.

15 MEMBER SKILLMAN: And that gets to maybe
16 several of the other items that have been raised so far
17 in this meeting relative to changing from the two-stage
18 to the three-stage SRVs, the fixing the cooling tower
19 at Palisades. Because I mean if the cooling tower at
20 Palisades I=m sure the operators would say, AWe=re the
21 only ones licensed to touch the controls.@

22 MS. MYERS: Right.

23 MEMBER SKILLMAN: And by golly if you lose
24 that tower we=re in trouble. Ditto for the operators
25 who would touch --

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1 MS. MYERS: The instruments.

2 MEMBER SKILLMAN: -- the controls for the
3 condition where the SRVs would be required.

4 MS. MYERS: Right.

5 MEMBER SKILLMAN: So I'm wondering if
6 there isn't another evaluation category that would be
7 a beneficial addition and prioritization of these items
8 where the most limited resource on site is normally your
9 key people. The most limiting resource is your key
10 people.

11 MS. MYERS: Right.

12 MR. DUBE: Can I answer that? Don Dube.
13 At one time early on in the process we were thinking
14 of having a sixth category on personnel. For a number
15 of reasons, it was not included. As a result of the
16 pilot there were a number of pilots that identified
17 these personnel reduction issues such as reducing
18 burden of fire watches, operations, maintenance.

19 So what we ended up doing is at the very
20 end of the process saying that there's other
21 considerations such as personnel burden reductions
22 that can be either a tie breaker or with justification
23 of cause to change the relative priority up or down.
24 But we have not gone so far as to create a sixth category
25 if you will.

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1 MEMBER SKILLMAN: Thank you, Don. Thank
2 you, Sonja.

3 MS. MYERS: Right. And really in the
4 security charts we have that as a consideration. When
5 we look at the comp measures going through security,
6 if the comp measures are cost beneficial to the station
7 For example, if it costs me less to keep the security
8 guard performing that comp measure for the rest of the
9 life of plant than it costs me to do the mod, then I
10 would say that=s a low priority for security versus this
11 is kind of the reason where I=m saying for this it is
12 not beneficial for is to keep those personnel and have
13 them do this task versus other tasks that they may do.

14 MEMBER SKILLMAN: Thank you.

15 MS. MYERS: And then for radiation
16 protection if you=re going in to take data every month
17 versus every quarter that means you=re getting three
18 times the dose that you would get to do that same task
19 on a quarterly basis. Overall, it didn=t show us any
20 significant safety impact. And it was a negative
21 impact on the dose and equipment reliability.

22 The dose for taking our gas voids is not
23 extremely high. But every millirem counts. And we
24 felt that it was important to go ahead and highlight
25 this that it would actually be a negative impact for

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1 a radiation protection and keeping our doses low as
2 reasonably achievable.

3 Any questions on that one?

4 (No verbal response)

5 Alright. So Robinson had on the books and
6 actually was to be installed in our upcoming outage in
7 May of 2015 a replacement of our bravo station battery
8 with a larger battery. The battery had minimum margin.
9 It did not currently meet the margin recommendations
10 of IEEE 485. And the larger battery would have to be
11 selected to do that.

12 Considerations of that, the space in the
13 battery room was limited. And in order to expand it
14 we had to move the battery charger. In order to expand
15 it significantly, we would have to build a new battery
16 room.

17 To give some history on this, originally
18 our batteries were sized and they were considered to
19 have an eight hour duty cycle. When IEEE 485 came out
20 and Robinson looked at that, the duty cycle was
21 reclassified to be a one hour duty cycle based off of
22 the sizing methodology in IEEE 485.

23 We did add some safety benefit in 2011
24 where the battery chargers were manually restarted.
25 And we made that an automatic restart following a LOOP

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1 or a LOCA. But we did not change the duty cycle of
2 batteries. So we added the battery chargers back onto
3 the batteries and with the automatic restart
4 capability.

5 We talk about what this modification was
6 going to going to do. It was giving us minutes of extra
7 margin versus anything significant for coming up to
8 where you would want it to be for either Fukushima or
9 for even Station Blackout considerations.

10 CHAIRMAN STETKAR: So let me understand
11 that. This larger battery was not increasing the
12 capacity to four hours or eight hours. It was like 63
13 minutes versus 60 minutes.

14 MS. MYERS: That=s correct. So when we
15 went through it, any impact. The answer to question
16 two was yes. It improved the capability because we
17 were adding more capability to the safety related
18 batteries in response to LOCA/LOOP with the failure of
19 the alpha diesel generator. And it improved the
20 defense in depth for a vital electrical power again with
21 a single failure of a diesel generator.

22 When it came to the more than minimal, we
23 determined that the battery is capable of meeting its
24 current design function. The change would not result
25 in a significantly larger battery duty cycle. And it

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1 was an increase of minutes. So we determined that the
2 change was not more than minimal. And the same for the
3 defense in depth. It ended up being a very low safety
4 significance.

5 The important thing is we ran this through.
6 We had people that were involved in helping create this
7 screening. We had people on the panel who thought this
8 was going to be our top priority of items that we looked
9 through.

10 And when we were able to do this, it was
11 really a tool of engaged thinking. When you look at
12 really the impact of batteries on core damage frequency
13 especially when you're only talking about increasing
14 it by minutes, it just wasn't there for what they had
15 thought would be.

16 CHAIRMAN STETKAR: You said five minutes.

17 MS. MYERS: It was a minute, three to four
18 minutes basically. At the end of this, at the end of
19 the day, what we did was we terminated the project to
20 replace it with a larger capacity battery and
21 reallocated the funds to be a replacement battery. The
22 battery still was at the end of life. And we were going
23 to be able to make our next 18 years of operations with
24 just this one more battery replacement.

25 CHAIRMAN STETKAR: You replaced it with a

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1 one hour battery.

2 MS. MYERS: We did.

3 CHAIRMAN STETKAR: Okay. Here=s an
4 example where this process is sort of stupid. I=m on
5 record for that. I realize I=m on record for that.
6 Why didn=t you exam replacing that battery with a four
7 hour battery or an eight hour battery?

8 MS. MYERS: We did that.

9 CHAIRMAN STETKAR: Okay.

10 MS. MYERS: And the cost of the project
11 soared because we were going to have a build a new room
12 for it. You needed HVAC.

13 CHAIRMAN STETKAR: Did you look at the
14 risk impacts of a four hour or eight hour battery versus
15 a one hour battery?

16 MS. MYERS: We didn=t as far as process
17 goes.

18 CHAIRMAN STETKAR: Tremendous.

19 MR. MORGEN: Not formally, right.

20 CHAIRMAN STETKAR: Please come to the
21 microphone and identify yourself.

22 MR. MORGEN: Yes, I=m Bruce Morgen. I=m
23 the fleet PRA manager for Robinson, Harrison,
24 Brunswick. So the PRA model assumes the one hour
25 battery life when we determine our success criteria and

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1 how we respond to accidents. So clearly having more
2 battery life would be a large benefit to us if it=s
3 sufficiently large.

4 CHAIRMAN STETKAR: Thank you.

5 MR. MORGEN: In the case of the one hour
6 to one hour and minutes, it did not make a difference.

7 CHAIRMAN STETKAR: Oh, one hour versus one
8 hour plus a small number of minutes clearly doesn=t.

9 MR. MORGEN: But the evaluation we
10 performed for this project was not for a four or eight
11 hour change.

12 CHAIRMAN STETKAR: Okay.

13 MS. MYERS: That moves us to our last
14 project which was the installation of the Westinghouse
15 shutdown seals. This project was to replace all our
16 reactor coolant pump seals with a Westinghouse SHIELD
17 thermal shutdown seals.

18 The new seals will reduce the inventory
19 losses from the current estimated 25 gpm to a 1 gpm
20 during a loss of RCP seal cooling event. Obviously,
21 the RCP cooling event is not just fires. It=s there
22 for fire. It=s there during Station Blackout. And
23 there are other scenarios in the probabilistic risk
24 assessment where we could lose seal cooling, but not
25 necessarily a design basis type of event.

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1 So the proposed change would replace the
2 dependency on a time critical manual action with a
3 mechanical design feature to keep the RCS intact.
4 Safety significance of this was medium. Any impact for
5 question two for the mitigation would be increasing the
6 capability of the RCP seals to maintain RCS pressure
7 boundary during a loss of all seal cooling events. And
8 we=d be increasing the availability of our operators
9 by reducing one of the manual actions to respond to a
10 loss of all seal cooling to the RCP event.

11 CHAIRMAN STETKAR: Do Robinson=s pumps
12 trip automatically on loss of cooling?

13 MS. MYERS: Could you help me with that,
14 Bruce?

15 MR. MORGEN: Bruce Morgen. I do not
16 believe they trip automatically.

17 CHAIRMAN STETKAR: These are probably
18 standstill seals. So the operators still have to trip
19 the pump manually so that these seals will work. Is
20 that correct?

21 (Off microphone comments)

22 MS. MYERS: As a positive impact by
23 reducing the dependency on the actions, if I recall the
24 way that our subject matter expert talked about it, it
25 extended the time that the operators had to trip the

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1 RCP seals or RCPs following a loss. Specifically, they
2 talked . About there was less operational challenge
3 to maintain the pressurizer level on scale during the
4 postulated event. And the time to start a make-up pump
5 was also increased.

6 Moving on to -- I'm sorry. We didn't cover
7 question three. There was positive impact for dose
8 because we reduced the RCS inventory losses and we
9 reduced the need for the time critical operator action,
10 again extending during a Station Blackout or a fire.

11 From question four, we're talking about
12 pressure boundary here. Obviously, if we're talking
13 about 25 gpm from an RCP seal to 1 gpm we've had a
14 positive impact on the capability of the RCS pressure
15 boundary.

16 And then a positive impact because the new
17 shutdown shields will provide a second barrier in the
18 case of loss of all seal cooling event.

19 We did determine it was more than minimal.
20 There's less operator challenge to maintain the
21 pressurizer level on scale. We have more allotted time
22 to start up a make-up pump. And we reduced or
23 eliminated the dependency on the manual operator
24 actions to ensure RCS integrity.

25 For question three, same logic. It had a

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1 positive impact.

2 Question four, it was a better design to
3 increase the capability of the seal during a loss of
4 all seal cooling event.

5 And question five it was a second barrier
6 or defense in depth for a loss of all seal.

7 We look at the estimated contributions.
8 We end up with a 3.35E-05 which puts us into a medium
9 yellow. And we anticipate that the seals will be
10 greater than 90 percent effective in reducing the risk
11 of the issue of loss of RCS pressure boundary during
12 a loss of all seal cooling event. Now that is premised
13 on the assumption that the testing from the
14 Westinghouse seal design is positive. Obviously, if
15 you get different information you have to go back and
16 revisit this.

17 CHAIRMAN STETKAR: But on the other hand
18 as was mentioned earlier, unless -- That=s interesting.
19 How does this work? If they=re very good, if you go
20 back to your matrix.

21 MS. MYERS: Yes.

22 CHAIRMAN STETKAR: If these are very good,
23 you get medium --

24 MS. MYERS: Reduction in risk.

25 CHAIRMAN STETKAR: You=re in the medium

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1 block there.

2 MS. MYERS: Right.

3 CHAIRMAN STETKAR: If they=re completely
4 ineffective, this is a very -- Well, I guess the
5 modification is a very low priority because they don=t
6 work. That=s right.

7 MS. MYERS: Right, yes.

8 CHAIRMAN STETKAR: Sorry.

9 MS. MYERS: And I mean you bring up a good
10 point. A very low or zero effectiveness is not the
11 same as a very low or something were at a green risk
12 for what is 100 percent effective.

13 CHAIRMAN STETKAR: Right.

14 MS. MYERS: And that=s where the panel and
15 the aggregation comes in.

16 CHAIRMAN STETKAR: That=s right.

17 MS. MYERS: Like everyone else, we did all
18 the -- within the group, we had five priority twos. I
19 apologize. I didn=t put my list together like the
20 other folks did. The five priority twos were our three
21 -- We had six priority twos. We had our RCP seals, our
22 three 805 mods and the two Fukushima mods.

23 CHAIRMAN STETKAR: And they all came out
24 priority two.

25 MS. MYERS: They all came out priority

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1 two. Now the Fukushima mods could be considered
2 adequate protection which would make them a priority
3 one. But looking at them without being the additional
4 pressure or the additional priority on them for being
5 adequate protection, they still came out in a medium
6 risk at item. And again when you look at it, if you
7 lose all your service water and if you lose all your
8 electricity, you're going to have some core damage
9 frequency and some large early release impacts.

10 Then we did some comparisons within the
11 groups. We did move some priority fours to the top that
12 were equipment reliability based over some regulatory
13 required. And then we gained overall panel consensus.

14 Out of that, the panel made the
15 recommendation that our Generic Letter 0801 commitment
16 be reevaluated. And Robinson has already acted upon
17 that and submitted a commitment letter to the NRC asking
18 for that removal of the commitment. We did reference
19 the information that we had within the screening. And
20 we provided some background information because people
21 reviewing that commitment may not have been part of the
22 process here. And they may not have heard of it.

23 That was sent out on October 14. We did
24 the cancellation of the battery upgrade. We acted to
25 change the replacement a like for like and redeploy

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1 those dollars to other modifications going on.

2 And then we had a cancellation of two
3 additional projects, the free seal and the replacement
4 of diaphragm valves with an upgraded design again for
5 the life of the plant. For the impact, it just made
6 more sense to just go forward with just like for like
7 and not look at trying to eliminate that. As with
8 others, we found this process is repeatable. And we
9 know that by comparison to other plants that have
10 demonstrated this.

11 What we believe and this was from the panel
12 as well as from the folks helping prepare the screening
13 was the structure around this removes the emotion. The
14 battery replace showed little risk improvement. And
15 at the end of the day, those that were involved in the
16 room for the screening understood why this project
17 would be asked to be cancelled and we're supportive of
18 that. The operator actions did show risk improvement
19 and actually will likely move from R031 to R030.

20 And then for our open phase the subject
21 matter expert from corporate really thought about what
22 is the risk reduction and am I creating a different risk
23 area by where I place these relays that would eventually
24 trip the plant away from offsite power and the proposed
25 solution change based off of that as well as our timing

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1 on that.

2 The other things that we found is
3 reliability issues can have impact on risk. When you
4 think about the circ water pump that John talked about,
5 that certainly had impact on risk. Our operator
6 actions that are on important non-safety pieces of
7 equipment for PRA have a impact on risk. And we need
8 to be able to communicate that essentially making this
9 like an engaged thinking when we=re talking to folks
10 comparing regulatory mandated items to reliability
11 recommended items. We need to be able to put them on
12 an even playing field and not just use the words because
13 the NRC is requiring it listing it at the top of the
14 list.

15 And then last like everyone else the
16 collaborative review provided insights to the scoring.
17 Having the experienced plant personnel with Robinson
18 ensured that we included those unique design features
19 as we were talking about risk. And then the
20 interdisciplinary reviews identified factors that we
21 wouldn=t have considered like in plant health
22 committee.

23 CHAIRMAN STETKAR: Sonja, because you
24 didn=t provide the list of all 20 and their final
25 rankings, you did mention though that the final

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1 aggregation process moved some around, higher-lower.

2 MS. MYERS: Yes.

3 CHAIRMAN STETKAR: Do you have -- How
4 many?

5 MS. MYERS: When I presented the list to
6 the expert panel, we took and did the priority twos and
7 then we put the plant health score next to them.

8 CHAIRMAN STETKAR: Okay.

9 MS. MYERS: So the priority twos, actually
10 the RCP seals were at the bottom of that and moved that
11 up to the top. The other 805s were right with it,
12 again, since fire is the highest risk for Robinson.

13 CHAIRMAN STETKAR: And that=s shuffling
14 within the priority twos though.

15 MS. MYERS: Right.

16 CHAIRMAN STETKAR: Okay.

17 MS. MYERS: We did not move anything from
18 --

19 CHAIRMAN STETKAR: You didn=t move any
20 threes to twos or threes to fours or anything.

21 MS. MYERS: No.

22 CHAIRMAN STETKAR: Oh okay.

23 MS. MYERS: There was some desire within
24 the priority fours for the regulatory required ones to
25 move them to the top because they were regulatory

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1 required. We talked about that and said we really need
2 to look at the --

3 CHAIRMAN STETKAR: Resisted that.

4 MS. MYERS: Yes, we did with coaching.

5 CHAIRMAN STETKAR: Okay, so your ranking
6 as was Plant Hatch=s stayed within each priority group.

7 MS. MYERS: Right.

8 CHAIRMAN STETKAR: And your final ranking
9 also was one through five and priority two one through
10 X and priority three one through Z.

11 MS. MYERS: Yes.

12 CHAIRMAN STETKAR: And priority four.

13 MS. MYERS: Yes, and we did have priority
14 fives.

15 CHAIRMAN STETKAR: And you did have
16 priority fives.

17 MS. MYERS: And two of the priority fives
18 were regulatory required or regulatory, I guess,
19 required. One was the commitment for the TSTF and the
20 other was the insulation for the GSI-191. I don=t
21 think it was a -- I don=t think the GSI-191 was a good
22 candidate for this again because we were so far down
23 the line that we were talking about the very last couple
24 of things that needed to be done. They were really
25 involving replacement of insulation in the highest

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1 impact zones.

2 CHAIRMAN STETKAR: Good.

3 MS. MYERS: So from a process value add we
4 looked at it. The regulatory, again even the playing
5 field put it into a structure. The commitment change
6 on the ECCS voids is actually going to be positive for
7 us because we'll have a reduction in future dose. And
8 we found that the actions with the shared clutter
9 response were effective by doing a quarterly with --
10 You would go into the increased frequency if we found
11 voids.

12 We're changing the solution on Byron open
13 phase based on the screening. And the electrical
14 engineers involved with that said two things about
15 that. One, the original design at least for the Duke
16 plants appeared to have considered open phase as a
17 credible fault. They said that we required more robust
18 motors because of that. And that was the solution the
19 original folks had come up with.

20 Now when you look at it, Robinson and the
21 Duke fleet is looking at installing relays that are
22 going to be a graded approach where we would get an alarm
23 and you have an indication that you might have an open
24 phase. And there would be like a level two that you
25 need to take action in a pretty short amount of time.

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1 The engineer was indicating like a seven day type thing.

2 Then you would have a third level of
3 detection that would say you need to find what you need
4 to deal with right now. And they would incorporate
5 that into the trip, but they=re not far enough along
6 on the design really to evaluate what that would be.

7 MEMBER BLEY: You=re developing your own
8 design.

9 MS. MYERS: That=s correct. And then
10 when you look at the reliability mods, there were mods
11 that were people=s pet projects that were close to being
12 funded. And those were recommended for cancellation.
13 And non-mod alternatives to those were equally as
14 effective as the mods that were being proposed.

15 And I can=t stress enough the structure
16 that is around this that makes you think about the PRA.
17 And whether we=re talking regulatory drive, whether
18 you=re talking station driven, you=re looking what=s
19 the best for the plant and put the plant moving closer
20 to nuclear safety.

21 MEMBER SKILLMAN: Sonja, for those, for
22 the three that were recommended for cancellation and
23 I would presume an acceptance of non-project
24 alternatives as being effective, did that outcome come
25 to people=s realization simply by the data? Or did

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1 people have to be bludgeoned into accepting that?

2 MS. MYERS: It really for us came by
3 putting it through the structure of the process. And
4 fortunately this is not a precise science on telling
5 people when to come in for time. So people were able
6 to see other projects going through and hear what the
7 risk reductions were for those and then present their
8 own and really come to the conclusion AI think we should
9 cancel this.@

10 MEMBER SCHULTZ: Who proposed the non-mod
11 alternative case?

12 MS. MYERS: Well, the system engineers had
13 already a bridging strategy. So they were either doing
14 preventive maintenance or they had a model work order
15 to deal with the issue.

16 MEMBER SCHULTZ: Why don=t we keep doing
17 what we=re doing rather than modify?

18 MS. MYERS: Right. One of the system
19 engineers for the one that had the freezed seal for
20 repair said in the history of the plant we=ve had to
21 do the freezed seal twice. We have 17 years left. How
22 many more times do I think I=m going to have to do that
23 if I=ve done it twice in four years? It=s likely I=m
24 not going to have to do it at all in the next 17 years.

25 MEMBER SCHULTZ: Thank you.

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1 MS. MYERS: And that=s it.

2 CHAIRMAN STETKAR: Thank you. Anything
3 more for Sonja? If not, we have next scheduled a panel.
4 We wanted to get a panel together and see if there=s
5 collective wisdom or lessons learned or insights from
6 looking across all six of the pilot exercises.

7 MEMBER POWERS: It seems to me radiates an
8 issue in this discussion on all considered and not
9 considered. I would like to hear what the panel thinks
10 about that.

11 CHAIRMAN STETKAR: That=s what I was going
12 to ask about that because it=s clear that this exercise
13 focused strictly on here is the plate of things I have
14 brought to you. Now evaluate these within the
15 isolation of that plate which I understand at one level.

16 MEMBER POWERS: The question really is
17 without destroying all that=s good about this process
18 is there a modification that can be made that would
19 allow the plate to be expanded.

20 CHAIRMAN STETKAR: They say this doesn=t
21 seem to make sense for the following reasons. But,
22 gee, if we looked at it a little differently mod one
23 of it does.

24 MEMBER POWERS: You can=t legislate
25 people be creative.

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1 CHAIRMAN STETKAR: Right.

2 MEMBER POWERS: I mean you fail miserably
3 in demanding that people be creative because --
4 Sometimes I know it. I know that. And I assume other
5 people suffer that failing occasionally, maybe not as
6 often but occasionally. But is there a structural
7 modification that can be made that at least allows the
8 possibility of being creative?

9 CHAIRMAN STETKAR: Let=s see if we can
10 explore some of that. But we=ll let them get started
11 and then throw them off course.

12 (Laughter)

13 Who=s got the lead? John?

14 MR. BUTLER: I=ll start it off. What I
15 wanted to have an opportunity to do with this panel
16 discussion is an opportunity to answer any questions
17 that may have come up. And in doing so I wanted to have
18 all of the pilot leads here available to answer any
19 questions.

20 But I also wanted to have an opportunity
21 before we leave this room to at least give you our
22 impression of what our overarching lessons learned were
23 from the process. I will try to do that with hopefully
24 some poignant examples from the pilots where these
25 lessons learned really came through. And you=ve

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1 already heard some of that in the discussion thus far.
2 But it never hurts to repeat ourselves on some key
3 points.

4 Before I get started, I want to at least
5 introduce those up here that you haven=t had an
6 opportunity to meet yet. You met Sonja. Next to Sonja
7 is Phil Lashley. Phil led the pilot activity for First
8 Energy at the Davis-Besse plant.

9 And next to Phil is Jerry Loignon. Jerry
10 led the activity at the Summer station. Summer was
11 involved both as a tabletop and as a pilot. So he=s
12 been involved throughout the year.

13 You=ve met Jim and you=ve met Greg. So who
14 you missed earlier who had an opportunity to come up
15 here briefly was John Grubb who led the pilot activity
16 at the Prairie Island facility and was also involved
17 in the tabletops for both Prairie Island and
18 Monticello.

19 With that introduction, kind of step into
20 this. The title of this maybe is not the best title,
21 but it states the obvious. All issues are not created
22 equal. So treating them as equal and giving them the
23 same equal importance and not taking into account the
24 plant specific differences, we=re trying to correct
25 that with this process.

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1 The results did show that in the small
2 selection issues that we picked there were issues that
3 had a relatively low safety importance that did not
4 warrant the schedule priority that they had been given
5 and visa versa. And this applied both to plant
6 initiated activities as well as regulatory activities.
7 There weren=t a lot of telling examples, but there were
8 enough examples to say that this process will help
9 straighten out some inequities in the priority process.

10 Some examples of where we saw this was
11 spent fuel pool instrumentation. This has been given
12 a fairly high priority at plants, but universally
13 across the pilots that it did not rank very high in the
14 process.

15 MEMBER POWERS: Forcefully at Joy when you
16 say that.

17 (Laughter)

18 MEMBER REMPE: I would like to question
19 that conclusion because Sonja did not include an
20 example. How many of the pilots did include it?

21 MS. MYERS: We did not review it at all.

22 MEMBER REMPE: At all.

23 MR. BUTLER: Four.

24 MEMBER REMPE: So four of the six did.

25 MR. BUTLER: Yes.

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1 MEMBER REMPE: And all four of them it fell
2 to the bottom of the pile I assume.

3 MR. BUTLER: Fairly low. I'll show a
4 slide that has that.

5 MEMBER REMPE: Okay.

6 MR. BUTLER: Palisades incipient
7 detection is another example. I think in general the
8 NFP 805 mods showed high importance, ranked pretty high
9 in the listing of issues. And I was actually surprised
10 at that.

11 Some of that in my own personal opinion may
12 be as a bias with the five PRA there's a little bit of
13 a conservative bias in that.

14 MS. MYERS: Having worked at plants that
15 could implement classic fire protection and plants that
16 could not, your older plants which have chosen to go
17 to 805 are the ones that you didn't have the separation.
18 You didn't really have the real layouts that you needed.
19 You may have even had some very close train cables
20 together. Right. The Robinson fire showed that
21 Robinson had some very unique vulnerabilities for fire.

22 So 805 certainly is going to go towards the
23 top because our design did not give us the features that
24 would make sure we had a train separation.

25 CHAIRMAN STETKAR: In a sense if you

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1 applied 805 as something or other to a new plant design
2 that is tremendous separation you come up with a
3 different conclusion I suspect. But I think you're
4 right because a lot of the older plants that have gone
5 the 805 route because they have the unique problems it's
6 almost a catch-22. Of course, it will raise to the
7 surface because it was an issue.

8 MS. MYERS: Yes, right.

9 MEMBER POWERS: The more telling schedule
10 that we ran that struck me is when you have a guy doing
11 high priority regulatory monitoring and you come back
12 and say, AHey, I can give you by going through this
13 process some more time to allows him to do a better job.
14 I thought that was a poignant example of benefit both
15 for safety and for the plant. I mean that was a win-win
16 that I thought was just very telling.

17 MR. BUTLER: Before I move on, I don't want
18 to continue hogging the conversation. Feel free to add
19 in before I move on.

20 CHAIRMAN STETKAR: Let me ask this because
21 you might go through it later on. But something I heard
22 it says all issues are not created equal. And they
23 certainly are not -- Even equal issues are not equal
24 when you look at them at two different plants. So
25 nothing is equal.

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1 In your experience, I heard different kind
2 of feedback on how well this process would work for --
3 and I don=t know how to characterize them --
4 programmatic issues. I heard folks say we can=t really
5 apply this process to something that=s a concept. We
6 need something more concrete. Or am I misinterpreting
7 that?

8 MR. BUTLER: I think the real answer is we
9 probably didn=t pick issues that fully tested that
10 aspect of the process. The closest I can think of of
11 the issues we looked at was one of the Fukushima actions
12 to combine EOPs and SAMGs. I believe someone looked
13 at that. That would involve essentially changing some
14 processes.

15 CHAIRMAN STETKAR: I know it was on at
16 least one list.

17 MR. BUTLER: And I=d have to go back and
18 look at how that ranked out. But that=s the closest
19 of all the issues. That=s the closest I can think of
20 a process type issue.

21 MS. MYERS: It=s all about the time, the
22 work hours.

23 MR. BUTLER: Yeah. There may have been a
24 couple that had some work hour fatigue rule
25 considerations.

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1 MR. LOIGNON: But in my estimation or my
2 experience here, it=s not so much whether it=s
3 equipment or program. It=s how well can you really
4 define the issue and what you=re going to do to address
5 it. Once you=ve got those two things defined, you can
6 do that process. If you can=t define either one or one
7 of them is very gray, the more gray it is the more
8 difficult it is to apply the process.

9 So if you=re talking about what=s 805,
10 well, 805 is a great big thing. But I probably can=t
11 do that even though they=re in the game. But once I
12 do enough work that I say AHere=s 10 things I need to
13 do@ I can go evaluate each of those 10 things and figure
14 whether any of them are worth doing or not or what order
15 they ought to be done in.

16 A lot of times some of those things can
17 actually -- the order could be dependent upon what their
18 risk is. So if I do alternate seal injection before
19 I do reactor coolant pump seals all of a sudden my
20 reactor coolant pump seal mod becomes less important
21 than it was before and visa versa.

22 And both of those are 805 mods for me, not
23 because they=re fire related so much as my fire PRA
24 number is so high. I have to do other things to get
25 my risk down and 1.174 space. So these things I=ve

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1 committed to in 805, not because I've got a poor design
2 but because I've got a big number.

3 So I've got this big number and I'm doing
4 these. The sequence that I do them in changes the
5 downstream later importance. When I put them
6 together, I say this is the one I'm going to do first.
7 I'll go revise the importance of that one and
8 recategorize it.

9 And next year if I come along and say,
10 Well, that one went in a ditch for whatever reason,
11 I'm going to move this one up. I have to rearrange it.

12 MR. LASHLEY: Back to Jerry's earlier
13 point, the process actually acknowledges that you need
14 to have this information. It actually has a due loop
15 that you don't have that information it sends you back
16 to get it before you can actually take it through the
17 process.

18 MEMBER SCHULTZ: You raised an important
19 issue. That is if you've got a program that is
20 consisting of many different features, projects and so
21 forth --

22 MR. LOIGNON: You have to break it up.

23 MEMBER SCHULTZ: Well, you break it up.
24 But you have to decide -- and I'm not sure of the process
25 that identifies this as well -- how you're going to move

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1 forward with the evaluation. If you take the example
2 you gave where you're doing one modification, if you
3 went in and did each of them singly, you not only affect
4 the outcome in terms of risk, but you affect the
5 implementation costs as well.

6 You want to look at that whole combination
7 of the project orientation and maybe in some cases cross
8 projects. If we're going to go in and do this, Then
9 we ought to do that. Outage planning and so forth.

10 MR. LOIGNON: Yes.

11 MEMBER SCHULTZ: Where you can greatly
12 reduce the cost of implementation if you put your mind
13 to it.

14 MR. LOIGNON: Right.

15 MEMBER SCHULTZ: And at the same time
16 improve plant reliability or plant safety or both.

17 MS. MYERS: Right.

18 MR. LOIGNON: There are synergies both in
19 the implementation as well as in the risk
20 relationships.

21 MEMBER SCHULTZ: I think the event -- I
22 don't mean to say that because the process doesn't
23 capture all of that it's not important. I'd rather say
24 the reverse. But the process allows you to be thinking
25 in this way.

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1 MR. LOIGNON: Exactly.

2 MEMBER SCHULTZ: And therefore has a lot
3 of value.

4 MR. LOIGNON: And a lot of times when you
5 do the aggregation, that=s where those things kind of
6 strike you that say, AHey, I said this was high and this
7 was high. But they=re really addressing exactly the
8 same thing. So there must be some interrelationship
9 here.@ Or AThis mod and this mod are being done in
10 close proximity on the same system. Should they be
11 done together for implementation reasons?@

12 MEMBER SCHULTZ: That=s right.

13 MR. LOIGNON: But you can find that when
14 you=re doing that aggregation.

15 MEMBER SCHULTZ: Right. And there=s a
16 time component there, too. In other words, as we=ve
17 talked about before, some of these things are being done
18 because aging is important.

19 MR. LOIGNON: Exactly.

20 MEMBER SCHULTZ: And sometimes we tend to
21 look at what=s going to age out in the next two or three
22 or four years. And perhaps if we started thinking this
23 holistically we would be replacing things that are
24 going to age out in 10 years if it=s appropriate to do
25 so.

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1 MR. BUTLER: This is kind of an expansion
2 on the previous slides. But each plant is different.
3 Therefore the importance of a particular issue can vary
4 greatly with the particular plant design. We saw this
5 with the open phase issue in that the action that was
6 taken by all plants was actually an NSIAC initiative
7 vote for all plants to take action to address the
8 vulnerability with open phase.

9 And the schedule for that in effect was
10 established based upon perceived importance of the
11 issue based upon the event at Byron. The importance
12 of Byron as we're coming to understand is very different
13 than the importance of a lot of other plants. Because
14 of design differences, it really has an impact on the
15 importance of the issue.

16 And it ranked relatively low among the
17 pilots who looked at open phase. And this importance
18 didn't match up with the schedule that each of the
19 pilots had committed to under the initiative.

20 I think you heard this from a number of
21 pilots that the reliability attribute of the process
22 really provides some insights on the importance of the
23 issue that aren't captured in looking strictly at the
24 present day safety of the issue. It's a
25 forward-looking nexus to safety if you will.

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1 And I'm making a point on this in that
2 adding this attribute was kind of questioned a number
3 of times by different people. Why are you looking at
4 reliability? Because there's an impression that if
5 you're looking at reliability this is strictly a
6 performance issue. You're trying to ensure that you
7 can continue to operate the plant and produce power.
8 And there's not that true nexus to safety that you're
9 touting it to be. I think we have to show in the process
10 that there is a nexus to safety in looking at this
11 reliability attribute that you don't capture in looking
12 strictly as the present safety of an issue.

13 I really appreciate John's ability to
14 participate or at least witness the activities that --
15 CHAIRMAN STETKAR: Please don't say
16 participate.

17 MR. BUTLER: To witness the activities
18 that occurred at Palisades. I wish that each of you
19 would have had an opportunity to sit through an IDP
20 meeting. Until you sit through and see the
21 interactions of this multi-disciplinary group, I don't
22 think you get a full appreciation of the value of the
23 process.

24 It really adds a lot and a lot of value is
25 obtained in hearing that discussion. And hopefully

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1 this can be amplified by the comments of the pilots
2 here. But it really showed me the value of the process
3 in sitting through those IDP meetings.

4 CHAIRMAN STETKAR: And I saw one. It was
5 only me. So none of the other members have had that
6 opportunity. I think it could be better. I think it
7 could be better if it -- the way you said it=s a
8 structured process. It was structured to some extent.
9 I didn=t quite honestly see the type of questioning back
10 and forth and challenging that I=d hoped to see.

11 And that=s one area where I was curious
12 what each of your experiences were in that aggregation
13 process at the end which is why I was asking how many
14 of you -- The only one I saw they said the operators
15 at Plant Hatch drove something up to number two and at
16 Palisades for whatever reasons something was I think
17 reduced from three to four if I recall it correctly.
18 I might have had that wrong.

19 But in that process how structured? I
20 don=t mean structured in terms of following a script.
21 I mean structured in terms of a process where people
22 honestly challenge one another on those initial
23 determinations. I would ask you for your experience
24 because as I said I only sat in on that one.

25 MR. LASHLEY: At Davis-Besse, we gave each

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1 IDP member homework before they came up to the
2 aggregation meeting. They had to come up with their
3 own rankings. And then the chairman would work down
4 the row and have each person -- And they would break
5 it into the priority ones, priority twos, priority
6 threes and give their initial rankings such that each
7 person had their initial thought process out. And then
8 that created more discussion.

9 I thought it worked pretty well. It
10 created more discussion among the members to -- AOkay,
11 you had this one at number five. I had at number eight.
12 Why are we seeing this differently?@

13 CHAIRMAN STETKAR: Okay. Anybody else
14 have any thoughts on that process?

15 MR. LOIGNON: My site VP is a ex-PRA guy.
16 So at Summer station, risk insights are everywhere.
17 And he challenges people at the PIM meeting or whatever,
18 AWhy is that important when it=s out of service today?@
19 And he expects other people to be able to answer that
20 question.

21 It=s not uncommon for us to think about
22 risk insights. And our process comes through the PHC
23 like most of them do to a plant prioritization committee
24 and we=ve just kind of manipulated that process a little
25 bit for this pilot.

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1 And those guys have all seen the stuff
2 before. But we went through those questions one by one
3 by one. And everybody challenged each other. And
4 really the thing that you got most of was get back to
5 what=s the real problem. Make sure we=re all really
6 talking about the same issue.

7 We have one instance where the problem was
8 not as well defined as it should have been. So when
9 we got there there was a lot of this wandering around
10 until we finally stepped back and said, AOkay. Here
11 is the definition of a problem.@ And then you=re able
12 to answer the questions a lot easier with common
13 discussion and not as much head-banging. But there is
14 some challenge.

15 CHAIRMAN STETKAR: And that=s why, Jim, I
16 brought it up while I was at the meeting there about
17 would the process of the aggregation at least benefit
18 from not in uninformed outsider because that=s
19 obviously an impediment, but a reasonably informed
20 outsider to hence prompt some of these discussions or
21 perhaps get people thinking about things that are out
22 on the fringes that maybe you hadn=t thought about.
23 When it comes down to it, you still are all part of that
24 same organization, try as you might to try to challenge
25 one another.

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1 MR. LOIGNON: Right. And I suspect most
2 organizations have one or two people who are better at
3 that as a regular course of events than others. The
4 best person in my plant was not on my IDP.

5 CHAIRMAN STETKAR: Yes.

6 MR. LOIGNON: But if he had been there, I'm
7 sure there would have been more challenges.

8 CHAIRMAN STETKAR: Okay.

9 MR. LOIGNON: Typically, we have meetings
10 that are say operational decision making. I want to
11 look at this problem from what should I do today. We
12 do have somebody that's designated as the challenger
13 for us. We did not do that for this process, but it's
14 not something we're not unfamiliar with. And people
15 are very open to challenging each other and
16 questioning.

17 MR. JOHNSON: For me, I would say I'm out
18 at Hatch after the maintenance rule expert panel. And
19 if I had to do it ever again, I would model less to the
20 maintenance rule expert panel because it's not the same
21 function. It's a little different perspective.

22 CHAIRMAN STETKAR: It is a different
23 perspective, yes.

24 MR. JOHNSON: So in round two I would
25 modify that a little bit and exclude a couple of members

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1 that were on the panel and go out and grab a few others
2 that should be on the panel that were not there. But
3 I think the issue that you're talking about -- it was
4 brought up before -- really could better be addressed
5 in the training aspect of getting ready for the IDP and
6 talking about decision making and what that means and
7 what you have to bring to the table as part of that
8 training that you go through for IDP.

9 CHAIRMAN STETKAR: Yes.

10 MR. JOHNSON: You really have to set the
11 stage for letting your members know here's what is
12 expected as you get into this process to have an
13 opinion. Your job is to have an opinion and vocalize
14 that.

15 MEMBER SKILLMAN: I wanted to ask a
16 question. In the pilots that you've conducted, I guess
17 my observation is that there is a desire to have very
18 highly experienced people involved. And very often
19 the very highly experienced people who get involved are
20 at a very high management level.

21 So my question to the whole panel is to what
22 extent can the product be influenced by the presence
23 of a fairly strong personality executive vice president
24 who is an ex-plant manager and carried a license for
25 30 years and sits on this panel and is basically able

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1 to stare down every other person on the panel. To what
2 extent can the panel=s product, the output of the IDP,
3 be disproportionally influenced because there is some
4 fear on the IDP?

5 MR. MIKSA: I look at Palisades. I
6 structured it or we structured it such that the actual
7 evaluations are reviewed at one meeting and then the
8 actual aggregation done at a second meeting. That=s
9 how the process works.

10 So the initial meeting before that meeting
11 takes place to review the importance evaluation, the
12 first piece of it, you have subject matter experts that
13 have all different types of experience based on
14 essentially who is the expert at the time.

15 So we had people that were from one to two
16 years all the way up to 30 years experience doing the
17 initial evaluations. Those evaluations are done and
18 then they go and present those to an IDP panel who has
19 -- We had not only the senior managers. We also had
20 a PRA engineer on the panel. And we also had our
21 equipment liability coordinator both of which aren=t
22 management type or senior management type positions.

23 We had what I feel was a good mix of
24 individual contributors that did the evaluations that
25 are being questioned by some experienced people, some

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1 in management and then some experts in PRA and equipment
2 reliability on the side that were not management types.
3 I feel like at that first meeting we went through line
4 by line every question and I mean every question.
5 It=s wasn=t the ones that are answered yes. Every
6 single question on the evaluation form for each
7 category, we went through line by line and was there
8 an agreement with what that conclusion was.

9 By doing that, you=re not looking being an
10 advancer. You=re looking at each category to start
11 with, each question. You agree to that and then the
12 process falls out after that. So at the initial point
13 to me that=s the major value of the process. It=s the
14 evaluation piece.

15 Once you start getting into the
16 aggregation and prioritization section, that=s more
17 process driven about NEI=s laid out the guidance other
18 than the tiebreakers. The tiebreakers start getting
19 into additional insights in those types of items.

20 In my mind, there was a good balance in the
21 initial evaluation in that very first meeting where the
22 subject matter experts presented to a panel just like
23 this of individuals of varying experience on how they
24 came up with their actual characterization and
25 importance.

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1 MS. MYERS: Just to add from Robinson=s
2 experience, by breaking it down and naming AI have an
3 initiating event. That initiating event is loss of
4 offsite power. And the impact of this problem is I=ve
5 now increased loss of offsite power by...@ and then
6 stating it. You really take away the power of an
7 influential person on the panel and put it back more
8 to factual base.

9 I have a mitigating piece of equipment that
10 is going to have higher capability and I name that
11 capability by its going to have more flow. It=s going
12 to have a higher capacity for a battery or it=s going
13 to have something that I can actually name for either
14 capacity or availability or capability all in that
15 line. Or I=m going to impact the operator to be a
16 better operator and I=ve got to name how that is.

17 I can=t just have my OPs director or
18 manager saying AWell, I want this because I want to
19 remove those manual operator action from a fire
20 response or from a LOCA response.@

21 CHAIRMAN STETKAR: I kind of regret I
22 didn=t have a chance to -- I wish I could have observe
23 that part of the process because I agree. That=s I
24 think the real heart of it. For Dick=s benefit at
25 least, when I was at Palisades I saw absolutely no --

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1 It would have been very difficult for any individual
2 at least in the aggregation process to assert the type
3 of pressure that you're talking about. There are
4 obviously opinions and the group worked together really
5 well for that. It's a snapshot of what I saw.

6 MR. LASHLEY: Once we were done, of
7 course, we took the feedback from our members that had
8 gone through the process. That was actually part of
9 the positive feedback that we had received. Whereas,
10 in the past, the things that had been decided to be the
11 top 10 priority list for the station, that had been
12 influenced by argument, character, things like that.
13 And this process was structured sufficiently that it
14 had removed those aspects of it and they felt gave a
15 pure ranking. And they actually appreciated and
16 thought more highly of the process because of that.

17 CHAIRMAN STETKAR: How well -- just out of
18 curiosity -- are those issue evaluations documented
19 other than yes/no, yes/no answering the questions? I
20 mean like Sonja said. Yes, this is the particular
21 initiating event. This is a particular piece of
22 equipment. And this is why we evaluated it this way.

23 MS. MYERS: Yes. At Robinson, it was
24 really driven from the tabletop. And the initial dry
25 run of the tabletop was conducted with our general

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1 manager of engineering as the chairman versus our site
2 director. And he was very much ATell me. Is it
3 affecting the capability, the availability, the
4 reliability of the components. Tell me each one.
5 Answer each one of those pieces.@

6 MEMBER SCHULTZ: Was there a stenographer
7 there? I think that=s what John is asking. Is that
8 well documented?

9 MS. MYERS: It is for Robinson.

10 MEMBER SCHULTZ: Either later on for that
11 particular example or for other applications is it well
12 recognized that these are the types of ways in which
13 those questions are responded to.

14 MS. MYERS: For Robinson, the type of
15 document is equal to what we would have in a 50.59(e)
16 evaluation of I=m very specifically naming what it is,
17 the piece of equipment or the event initiator or on down
18 the line. And they=re captured in the final screens
19 that were brought to the aggregation process.

20 MR. JOHNSON: That=s about a 20 page
21 document. Each one of the projects have 20 pages for
22 each one of the projects.

23 MEMBER SCHULTZ: That=s a common
24 expectation and deliverable.

25 MR. LOIGNON: The shortcoming from my

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1 point of view was I=ve got this 20 page document but
2 I spent 30 minutes talking about it. And although
3 those specific comments may or may not have been well
4 recorded in the discussion, you=ve got a pretty good
5 document to base this on what decision is made. If it
6 was changed, you=ve got notes about that.

7 MEMBER SCHULTZ: Right.

8 MR. LOIGNON: Yeah, AI understand that
9 because@ and that because wasn=t in there. Whether
10 they got captured and put back in was a little bit hit
11 and miss.

12 CHAIRMAN STETKAR: The only reason I bring
13 that up is this is a great process. You get everybody
14 together. They get involved in it. You run through
15 this process. You come up with a rank ordered list.
16 And then you say, AWell, I don=t know if there=s any
17 periodicity to this, but next year we need to do it here
18 or two years from now we need to do it again.@ The faces
19 are all different.

20 Even if the faces are the same, if you=re
21 like me, you don=t remember what you did yesterday.
22 AWhy did I say that was important? I don=t understand
23 now.@ In terms of moving forward in a process like this
24 or quite honestly communicating it to outsiders it=s
25 pretty important to document AI today thought this was

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1 important for the following reasons...@ Otherwise you
2 lose a lot of that depth.

3 MR. MIKSA: At Palisades we did assigned
4 log numbers and the intent would be to put these into
5 our records. That log number then could be referenced
6 in our project databases to reference against each
7 project. Then it could be retrieved as IDP importance
8 evaluations also. That was the intent of our pilot.

9 CHAIRMAN STETKAR: Plus posterity.

10 MR. BUTLER: We also intend to collect a
11 number of these and include them as part of a resource
12 manual in effect going forward that can be used as a
13 training tool or a reference tool for how a similar
14 issue could be addressed or should be addressed. It
15 would not be a formal part of the guidance, but kind
16 of a support document for the guidance.

17 MR. LOIGNON: You get some idea of the
18 level of documentation that is an expectation.

19 MEMBER SCHULTZ: Has there been an outcome
20 with regard to a return period or how this would be
21 integrated into plant process?

22 MR. LOIGNON: We have talked about it and
23 probably it=s going to be slightly different for each
24 plant that implements it. My scheduling and planning
25 process is typically on an annual basis. So I would

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1 expect I'm going to revisit this on an annual kind of
2 basis when I do next year's plant update.

3 Now am I going to go through the whole
4 process for every one? I'm probably going to have
5 somebody's going to look through it and say, That
6 hasn't changed. And then I'll redo the aggregation
7 without having gone through that whole project with an
8 IDP. The new ones will go through an IDP and the old
9 ones, one or two people will just validate that what
10 was done at the last one is still current.

11 MEMBER SCHULTZ: Right. But you've got
12 to look at the other ones when you go through it.

13 MR. LOIGNON: When you go to aggregation
14 you have to look at it again. That's right. But you
15 don't have to --

16 MEMBER SCHULTZ: Document it.

17 MR. LOIGNON: -- include the IDP process
18 first. You just have to go back through and look at
19 the ones that you're going to reaggregate.

20 MS. MYERS: Right. The intent at least
21 for Robinson because we found so much value in it was
22 to put things through as they're coming in in plant
23 health. Then you would get the results. You'd be
24 looking at -- On a quarterly basis, we look at the
25 ranking within the projects and see if they are

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1 appropriate. And this would be folded into that.

2 MEMBER SKILLMAN: I=d like to ask another
3 one. The votes that are in so far are very, very
4 positive. But I=ve got to think some of you are saying
5 there=s a real -- There are a couple of things in here
6 that are really rotten. I don=t want to do them again.
7 And we haven=t heard about those. At least, I haven=t
8 heard about those.

9 With all candor, are there some things that
10 you would say AThis could be improved. This isn=t so
11 good@? What I did hear you say is that some of the
12 regulatory required programs or fixes don=t have a
13 whole lot of value. I got that. But in the process
14 itself, would you have any comment of what needs to be
15 made better or changed so that you=re not flying around
16 in circles?

17 MR. LASHLEY: All my comments were very
18 well documented, provided back. They were
19 incorporated. They were addressed. So anything that
20 I thought was rotten they fixed.

21 MEMBER SKILLMAN: Okay. Fair enough.
22 Others?

23 MR. LOIGNON: We typically were the same
24 way. We=ve been involved with this for a fair number
25 of months now.

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1 MEMBER SKILLMAN: So we=re seeing a shined
2 up product here.

3 MR. LOIGNON: Yes.

4 CHAIRMAN STETKAR: We had originally
5 tried to get this type of discussion at the point where
6 they had gone through the tabletops. So you=re seeing
7 now probably the third or fourth guidance.

8 MR. LOIGNON: I was going to say at least
9 third generation.

10 MR. BUTLER: But you haven=t seen the
11 revised guidance.

12 CHAIRMAN STETKAR: Yeah. You haven=t
13 even seen the revised, revised guidance.

14 MS. MYERS: I think if there are areas I
15 would like to see prevention going into the ePlan as
16 some sort of adder for ePlan. And we=ve talked the
17 ePlan folks about that. And they=re having a hard time
18 understanding or picturing how to do it. I=m not sure
19 I help them. But our containment repeater of not
20 calling an unusual event when we don=t really have a
21 fire in containment we have to call it because we can=t
22 get back out in 15 minutes.

23 That would be a real positive thing to get
24 completed and to have adders for that. Having some
25 sort of way to incorporate ALARA even if it is

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1 regulatory or equipment reliability high, I'm going to
2 pick up a lot of dose doing this to balance out the real
3 impacts.

4 And again it's hard to picture how that
5 would work within the process. It's more like we need
6 more run time, more input, on how this is actually going
7 to help us.

8 CHAIRMAN STETKAR: Let me ask you
9 something that -- I'm obviously a card carrying PRA guy.
10 So take that from where it's coming from. And because
11 I didn't have an opportunity to sit in on any of the
12 actual IDP sessions, the evaluation sessions, to what
13 extent did each of you use quantitative information
14 from the risk assessments versus qualitative insights
15 about risk? And I'm not looking for specificity. Do
16 you wind quantifying quite a bit through your risk
17 assessment? Or did you rely more on the expertise of
18 the PRA group to say AWell, in our experience this is
19 higher or this is lower@?

20 MR. LASHLEY: What we used a lot of times
21 is that we actually had the number within our PRA model
22 that we could use. But lots of times that number was
23 very low like 7E-7.

24 CHAIRMAN STETKAR: Yes.

25 MR. LASHLEY: Even if you assumed that the

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1 entire thing went away, it would still be very low
2 within the aspects of this. So we actually used
3 quantitative more than I would have expected going into
4 it. But we didn't use it 100 percent. But fairly
5 often.

6 MR. LOIGNON: I would say almost everybody
7 has got the capability within their PRA to tell you
8 where you are on that left-hand column, what color you
9 are. But how much is going to change for it, you have
10 to go figure out how I'm going to tweak my model and
11 crank the number.

12 CHAIRMAN STETKAR: That's a little bit of
13 what I was asking.

14 MR. LOIGNON: We probably don't do that
15 very much because when you look at the right-hand side
16 it's pretty flat across there. So it's not a
17 necessity.

18 CHAIRMAN STETKAR: Okay.

19 MR. LOIGNON: If I'm 50 percent, there's
20 really not much difference whether it's 25 or 100.
21 I've got the same answer. The biggest part is really
22 where am I on the right-hand column. And the PRA number
23 can get you that pretty quick generally. It doesn't
24 take the group very long to figure that part out.

25 MS. MYERS: And for Robinson the PRA

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1 person reviewed every single one of our risk screenings
2 because we wanted to make sure that we didn't get
3 question one or question two wrong. Our PRA person had
4 operations experience and he was at every one of our
5 panel meetings. And then we also had his boss, Bruce,
6 on the panel. So we had the insights from the
7 individual contributor. And we had the insights from
8 the manager as well.

9 MEMBER SCHULTZ: So, Jerry, there's not
10 much change across the horizontal line.

11 MR. LOIGNON: Not typically.

12 MEMBER SCHULTZ: But at the same time --

13 MR. LOIGNON: Some of them have one step.

14 MEMBER SCHULTZ: Right. And at the same
15 time those are broad categories.

16 MR. LOIGNON: Exactly.

17 MEMBER SCHULTZ: And so one ought to be
18 able to choose within a box or two where you sit.

19 MR. LOIGNON: Right. Exactly.

20 MEMBER SCHULTZ: And therefore make a
21 case.

22 MR. LOIGNON: Right. And if you needed to
23 because you were trying to decide between medium and
24 high --

25 MEMBER SCHULTZ: Right.

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1 MR. LOIGNON: -- on where I am in the rank,
2 then you could go do something.

3 MEMBER SCHULTZ: It=s a perspective.

4 MR. LOIGNON: It might be worth going to
5 chase. But typically you can get close enough. You
6 know I=m in the middle of the range here and I can be
7 off by a lot and not really change my answer.

8 MEMBER SCHULTZ: But at the same time it
9 makes you think about it.

10 MR. LOIGNON: Exactly.

11 MS. MYERS: Right. The real value I saw
12 here if you think back to where the industry was in say
13 >86->87 time frame with 50.59s and safety analysis.
14 And in that time frame, the safety analysis people were
15 sitting someplace. They were the gray beards that you
16 went and asked AOkay. I=m making this change. Am I
17 impacting anything that I should ask the NRC for
18 permission beforehand?@

19 This will take us to the same place that
20 50.59 took us where the individual engineer, procedure
21 writer, OPs or maintenance person that=s 50.59
22 qualified can go into the SAR and have a good idea of
23 am I having an impact, am I having more than minimal
24 impact. This will take the same thing and put it down
25 to the engineer, the operators, the maintenance people

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1 that will be involved in suggesting projects. We would
2 understand the PRA to that same extent five-ten years
3 down the road.

4 CHAIRMAN STETKAR: How did you grapple?
5 You say the PRA. Do any of you have full power
6 shutdown, internal fires, seismic, a full scope level
7 1 PRA?

8 MR. LOIGNON: I don=t. I=ve got an
9 internal event. I=ve got internal flooding at power.
10 I don=t have a fire PRA that reflects my current plan
11 because I=m in the transition.

12 So I=ve got a fire PRA that looks at my
13 plant two years from now when I finish doing mods and
14 change my fire response. But I=ve got a lot of insights
15 from that PRA even though it=s not really reflecting
16 my plant today. So I can mine stuff out of that.

17 It=s difficult for me to go do the research
18 and say AIt=s a delta this.@ But I can get you in a
19 ball park.

20 CHAIRMAN STETKAR: Did any of you run into
21 anything -- I=ve seen this in the past, but obviously
22 it=s issue specific -- that might not pop up in your
23 level one PRA for full power, but might be more
24 important during shutdown? RHR pumps are a good
25 example. Depending on the plant design and what safe

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1 stable state for your full power PRA RHR may or may not
2 show up as very important at all. But they=re
3 certainly important when you=re in shutdown.

4 MR. LOIGNON: None of the projects that
5 I=ve piloted would fall under that situation.

6 CHAIRMAN STETKAR: Okay.

7 MR. LOIGNON: However, I happen to know of
8 one. One of our -- Some of our flex mods I could take
9 that pump, get it established outside the aux building,
10 run temporary hoses. And if I=m in low regulatory
11 condition, I=ve got a pump ready to put water in the
12 vessel on a moment=s notice. That pump=s not available
13 to me right now today. But it will be two years.

14 Why don=t I have it in my procedures? Put
15 that pump over there, fill it and vent it and have it
16 ready to go. Well, we=re already starting to talk to
17 the outage management folks. You need to do that.

18 They=re saying, AYeah, but this hose is in
19 my way. It blocks the access to this.@

20 AIt=s important. Go do it because you=re
21 going to go from a yellow condition to a green condition
22 in your outage.@ They=re starting to hear that.

23 Yes, it=s there. But it wasn=t anything
24 that I piloted for this process.

25 CHAIRMAN STETKAR: Did any of the others

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1 struggle with this issue of we can really quantify it
2 explicitly or you can use the expertise of somebody who
3 says, AWell, based on what we understand now of our risk
4 assessment, we can sort of rank it horizontally@? But
5 struggle with issues that it might be higher or lower
6 importance if you thought for example for shutdown or
7 if you thought for containment protection rather than
8 just core protection?

9 MR. LOIGNON: Containment protection is
10 in the process.

11 CHAIRMAN STETKAR: Yes. You=ve got LERF.

12 MR. LOIGNON: It=s in the process.

13 MR. LASHLEY: We did have some various
14 aspects on that. I don=t recall any particular
15 struggles with it. I didn=t get any negative feedback
16 from our PRA folks and I know that there was an auxiliary
17 feedwater system that we had worked on. And I didn=t
18 get any kind of a struggle from them regarding that.

19 MR. MIKSA: At Palisades, we didn=t have
20 any difficulty with that, differentiating between that
21 power or shutdown. But we also didn=t necessarily
22 differentiate as we went through each evaluation. It
23 was what was the risk whether it was shutdown or
24 operational risk.

25 CHAIRMAN STETKAR: Alright. Thanks.

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1 You still have more things to talk about I know.

2 MR. BUTLER: We've made this point. A
3 number of the pilots have made this point. Clearly,
4 one of the things we're looking for is to be able to have
5 a process that is robust and repeatable.

6 I think one of the hallmarks of that
7 attribute is the matrix that we've been discussing
8 where it's not necessary to know something to the third
9 decimal place and to run detailed PRA models to get an
10 answer because we're very accommodating for being able
11 to address what's the impact of a decade change in the
12 answer. What impact does it have. And in many cases
13 it doesn't have any impact on the final result.

14 MR. LOIGNON: Before we leave that one,
15 one of the questions you asked earlier today was how
16 do we know it's repeatable. And if two groups did the
17 same one, would you get the same answer? When we were
18 training, we actually did do that. We had three groups
19 go out and look at the same thing as a generic gap kind
20 of training. And all three of the groups came back with
21 exactly the same answer to the problem.

22 CHAIRMAN STETKAR: That's good.

23 MR. LOIGNON: We have at least one
24 datapoint.

25 MS. MYERS: And then the same issue was

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1 brought to the second training.

2 MR. LOIGNON: Right.

3 MS. MYERS: And they came back with the
4 same answers.

5 MR. LOIGNON: That=s right. And they
6 came back to the same answers, too.

7 CHAIRMAN STETKAR: Okay.

8 MR. LOIGNON: It is repeatable.

9 MR. BUTLER: There were a number of
10 NFP-805 changes that were looked at. And there were
11 quite a variety of changes included in that category.
12 Some of them were incipient detection. Some were
13 electrical modifications. Some were hardware
14 modifications.

15 But what I thought was interesting is that
16 here are the results of all those modifications and how
17 they ranked up in the process.

18 CHAIRMAN STETKAR: Although I think as
19 Sonja said earlier, this might be a self-fulfilling
20 situation because of the plants that are adopting
21 NFP-805.

22 MR. LOIGNON: Maybe.

23 MR. BUTLER: One of the things that we were
24 very cautious or attuned to looking for in looking at
25 the results where there were similarities to understand

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1 why they're the same even though these are very
2 different processes and at the same time where there
3 are differences, do we understand why those differences
4 are there for purportedly similar issues. So we're
5 still evaluating some of the data from the process.
6 But generally we have not seen anything that really
7 causes any concern with differences that we can't
8 explain.

9 This is the same result for spent fuel pool
10 instrumentation. There is some variability with Hatch
11 taking a little bit of a different turn on the RP
12 evaluation. But otherwise the evaluations give very
13 similar results.

14 MEMBER BLEY: None of the operators pushed
15 for this one.

16 MR. JOHNSON: This was the opposite
17 really.

18 MEMBER BLEY: I can't hear you.

19 MR. JOHNSON: I said the opposite really
20 in that case. I heard operators say AOkay, so I've got
21 a level instrumentation. Just having instrumentation,
22 just having an indicator did me a lot of good in the
23 control room when you don't have the capability to do
24 anything about it.@

25 MS. MYERS: Right. That's exactly what.

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1 This was run through the training and we had an
2 operations person with us in the training in February.
3 And his thing was A Couple it up with something I can
4 do about it. Give me some mitigating strategies and
5 now this goes higher. Just knowing that I don=t have
6 any level in my spent fuel pool doesn=t help me a whole
7 lot other than now I know it=s gone.@

8 (Simultaneous speaking)

9 MEMBER POWERS: I thought it was gone.

10 CHAIRMAN STETKAR: It was there last time
11 I looked. Where did it go?

12 (Laughter)

13 MR. BUTLER: I=m coming to the end here.
14 Results overall, we do see value in this process looking
15 at varied projects through a common risk-informed lens.
16 And that was really one of the takeaways from the IDP
17 panel where we took a very experienced group of people
18 and allowed them to look at an issue through the same
19 lens if you will. And you get a lot of valuable input.

20 We do want to have a process that would
21 allow us to support, to use those process as support,
22 for a change in commitments or even in exemption request
23 to a schedule commitment. We are looking at some point
24 to have that regulatory acceptance of the process.

25 We are going to be testing a little bit of

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1 that. Hatch has made a submittal to address their
2 commitment to the void tech spec.

3 MS. MYERS: That=s Robinson.

4 MR. BUTLER: Oh Robinson. Pardon me.
5 I=m looking at you and I=m saying Hatch. But I mean
6 Robinson. And we hope to get a couple of other examples
7 where we can test that aspect of the process.

8 And in the end, I=d love to see this process
9 applied not only on a plant specific basis, but aspects
10 of the process to prioritization looking at things
11 through a risk informed lens. I=d like to see that
12 applied early on in the regulatory process as an
13 emerging issue or as an evaluation period of a group
14 of regulatory issues, be they rulemakings or other
15 generic type issues. I think through that process we
16 can get a much better handle on how to move forward on
17 an issue, to identify what the key attributes are, what
18 its relevant importance is to all the other issues that
19 are on the plate that we=re trying to deal. I really
20 think it can provide some insights that we currently
21 have a process to address.

22 CHAIRMAN STETKAR: John, before you wrap
23 up to the last slide here, one of the things that I=d
24 asked going into this and you kind of did it was looking
25 across the six pilots and were there areas of general

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1 agreement regardless of how you got there. And you
2 showed that level of consistency in 805. You showed
3 on the spent fuel pool level instrumentation Hatch and
4 I think Greg explained how they thought about that from
5 personal dose issues anyway.

6 Did everybody look at the open phase issue?

7 MR. BUTLER: Not everybody.

8 CHAIRMAN STETKAR: Not everybody, okay.

9 MR. BUTLER: But it showed very similar
10 results also.

11 CHAIRMAN STETKAR: Okay. Because most of
12 these issues were plant initiatives, obviously you=re
13 not going to get the same plant initiatives in all six
14 pilots. So we=re kind of limited in terms of seeing
15 that there=s not a lot of opportunity for people to have
16 made different assessments of the same issue.

17 MR. BUTLER: If you=re asking were there
18 similar issues where the results were markedly
19 different.

20 CHAIRMAN STETKAR: Yeah.

21 MR. BUTLER: There were a number of pilots
22 that looked at changes to their RCP seals.

23 CHAIRMAN STETKAR: That=s one.

24 MR. BUTLER: And there was some
25 variability in the importance of that. That in the end

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1 was attributed to a change they were making in their
2 design. I think it was very important for Robinson,
3 but less important for Palisades.

4 MR. MIKSA: I can speak to Palisades. We
5 had a different issue than Robinson. We were going
6 from an N9000 seal that=s already installed. It was
7 an aging obsolescence issue to replace it with the same
8 type of seal versus a different design seal. Where
9 Robinson was going to a different design number of
10 stages. So that was the difference there. It was the
11 issue we evaluated.

12 MR. LOIGNON: And Summer is probably in
13 the middle of these two extremes. I=m going from the
14 Westinghouse seal to the N9000.

15 CHAIRMAN STETKAR: Okay.

16 MR. LOIGNON: But I already have alternate
17 seal injection installed.

18 CHAIRMAN STETKAR: So in some sense these
19 things are because it=s a snapshot in time based on
20 where you are in mods that are basically in progress
21 already. Okay.

22 MR. LOIGNON: Right.

23 MEMBER REMPE: This would happen with
24 Robinson and the spent fuel implementation is too far
25 along is why you decided not to look at it or why did

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1 you not look at it? Because if you want to have a
2 stronger case that everybody found that it was not a
3 wise thing to implement it would be good to know why
4 you didn=t.

5 MS. MYERS: Well, Robinson, (1) we were
6 further along in the implementation. But (2) we
7 selected our topics ahead of other folks. So we didn=t
8 necessarily know what other people were selecting.

9 MEMBER REMPE: What was the case with the
10 other plant that didn=t? You said that two didn=t,
11 right? And there are only four on this slide.

12 MR. BUTLER: I=m sorry. Two didn=t?

13 MEMBER REMPE: There were two of the
14 pilots that didn=t. What was the other plant=s reason
15 for not considering this instrumentation?

16 MR. BUTLER: We didn=t put a requirement
17 on which issues they looked at.

18 MEMBER REMPE: Right.

19 MR. BUTLER: I think you heard from Greg.
20 I mean he decided not to pick some of the flex issues
21 because everyone else had picked them. So we were
22 looking -- We had some competing requirements or
23 expectations on the selection of issues. We were
24 looking for variety. We were looking for a combination
25 of plant initiated and regulatory issues.

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1 MEMBER REMPE: This didn=t hit the list.
2 Is that what you=re telling me?

3 MR. BUTLER: Yeah.

4 MEMBER REMPE: Okay.

5 MEMBER BLEY: I=d like to follow up.
6 Jerry, you mentioned -- I don=t think you have any
7 guidance on this point. But should you be evaluating
8 two things that are aimed at the same problem like seals
9 and alternate seal injection, you really wouldn=t want
10 to evaluate them independently and then maybe do them
11 all. There could be multiple things here. You really
12 ought to look at them either in sequence and maybe look
13 at alternative sequences of them, but not just look at
14 them independently. Have you talked about that at all
15 more broadly?

16 MR. LOIGNON: It=s actually come about
17 because there were two different problems.

18 MEMBER BLEY: Okay.

19 MR. LOIGNON: So alternate seal injection
20 was done because I had low margin in an MSPI indicator
21 and it helped me there.

22 MEMBER BLEY: Okay. Yeah.

23 MEMBER BLEY: The seal swap is because
24 it=s also high in my CDF count. But we have ongoing
25 operational issues with the Westinghouse seal.

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1 They=re really sensitive. If they don=t go in exactly
2 right, you may be chasing temperature on your VCP for
3 a cycle. And we=ve done that a couple of cycles and
4 management says, AThat=s an operator distraction I
5 don=t want in my control room. So we=re going to swap
6 them out.@

7 So it=s really a different reason, but they
8 do interrelate. Here=s a reason to do this. Here=s
9 a reason to do that. But they are related. I think
10 you do have to evaluate them independently and then when
11 you=re doing your aggregation you have to recognize
12 that these two relate to each other. Then you figure
13 out how do I adjust for that.

14 MEMBER BLEY: You may want to do both.
15 But you might not.

16 MR. LOIGNON: And we=re going to.

17 MEMBER BLEY: You=re doing both because
18 you have a really good reason for it.

19 MR. LOIGNON: Right.

20 MEMBER BLEY: You don=t have anything in
21 general talking about this dependence issue.

22 MR. BUTLER: No. And what I was thinking
23 about when Jerry was talking is this process is not
24 intended to totally replace all the project processes
25 that plants already have to do an evaluation.

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1 MEMBER BLEY: Good sense.

2 MR. BUTLER: I would see this process
3 supplementing a lot of the current activities. So some
4 of those decisions should have been made earlier on in
5 the project germinations.

6 MEMBER BLEY: I'm just thinking. When
7 you send this out to the broader group of plants who
8 will want to apply it, some discussion about the impact
9 of dependency might be worth adding --

10 MR. BUTLER: That might be one.

11 MEMBER BLEY: -- to just at least raise
12 a flag for them to be thinking about it.

13 MEMBER SCHULTZ: I'd like to jump on that
14 a little bit more. What you're describing here and
15 what you've demonstrated in the pilot is a good process
16 to do the prioritization. There are some side effects
17 that I think we're talking about now that could have
18 in some circumstances additional great benefit.
19 Because by having a process in place that pushes the
20 organization to do this type of prioritization also
21 gets the juices flowing in considering modifications
22 in general.

23 What is the purpose? Well, the purpose
24 has to do with risk safety and risk and reducing risk.
25 But it also has a high degree of importance associated

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1 with reliability. And so all of those features that
2 you've got identified in the process will get the juices
3 flowing in terms of thinking about modification I
4 think in general in a different way. I think that ought
5 to be emphasized.

6 The other thing that we talked around a
7 little bit but I think is extremely important and just
8 using open phase as an example, we started off talking
9 about how the open phase issue has been demonstrated
10 through this process as being a plant specific element.
11 You know, the risk and its safety impact is going to
12 be influenced by the plant design and its overall
13 operational characteristics.

14 But this process so far has demonstrated
15 that there's a couple that have determined that it's
16 not very important. I'd hate to see that that would
17 influence industry to go forward and think we've got
18 a real opportunity here. It may be very, very
19 important for some plants that addresses this
20 differently.

21 I presume the NEI project associated with
22 open phase is pushing that that evaluation be done on
23 a plant specific basis and that this process is not
24 going to influence that in a way so that some feel this
25 is not important. We need to get a schedule extension

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1 right away.

2 Don, you had something.

3 MR. DUBE: Yeah, this is Don Dube. I was
4 just going to add that there were three topics that we
5 did in the generic assessment expert team and open phase
6 was one. And again Mike Snodderly said he=s forwarded
7 the evaluation. It=s like a 15-20 page evaluation.
8 But the open phase did -- the importance did span from
9 very low importance to a plant with a configuration like
10 Byron would end up being relatively high in importance.

11 MEMBER SCHULTZ: Right.

12 MR. DUBE: And the basis for why a plant
13 may fall in one category or not is explained in the GAET.
14 That=s the whole purpose of that process.

15 MEMBER SCHULTZ: So that=s a value adder
16 in of itself.

17 MR. DUBE: Yes.

18 MEMBER SCHULTZ: That=s good. The
19 question I had of the panel while you=re here is as you
20 do these pilots I presume that there=s been a lot of
21 interest across the plant staff or the organization in
22 how the process has worked. Any side comments related
23 to how you think this is going to be embraced by the
24 organization going forward?

25 MR. LOIGNON: Let me jump in first I guess.

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1 Like I said, we have a plant health committee and a plant
2 project prioritization group that are separate. But
3 they feed into each other. And we're looking at how
4 do I want to revise that process to efficiently
5 incorporate the insights and methodology here. So we
6 probably will do something whether this process goes
7 anywhere else in regulatory space.

8 What we would hope to see -- now I'll jump
9 out on another bandwagon wagon and to something you
10 haven't asked yet -- it go or envision of it possibly
11 going in regulatory space is I have a schedule developed
12 by the process that the regulator recognizes and
13 approves. And for low risk stuff I just move the date.

14 On an 18 month schedule like I do the FSAR
15 update, I tell you about it. And if it's a high risk,
16 I come ask for permission before I do it, just like
17 50.59. So I use risk as the discriminator of do I need
18 permission first or can I just do it and let you know
19 about it.

20 On the other side from your side, from the
21 regulatory side, when he comes out with a new order,
22 rather than telling me here's the date, tell me plug
23 it in your process and tell me when you're going to get
24 it done. And then come back and oversee that I'm really
25 implementing the process the way we agreed that it

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1 should be implemented.

2 I=d like to see that down the road. But
3 we=ll see if we ever get there.

4 MEMBER SCHULTZ: My other comment is and
5 Greg, you=ve mentioned this in your presentation
6 because the focus here is not just all of PRA numbers
7 and values and quantification but uses the insights
8 from the PRA in a semi-quantitative way or however you
9 want to express it, it provides a real good opportunity
10 for presenting information about the plant and its
11 operation and regulatory issues and plant initiatives
12 that would be very important for training. And you
13 mentioned that you had an individual on the program
14 staff that was just starting out.

15 MR. JOHNSON: Right.

16 MEMBER SCHULTZ: And you were using it as
17 a mentoring opportunity to move that individual=s
18 experience forward. I would think that this would be
19 a great project and program to integrate and to train
20 and not just talking about plant training of course,
21 but organizational training.

22 MR. JOHNSON: There are a lot of value
23 added tentacles to this process. I guess my fear is
24 that what=s left for us is to figure out how do we really
25 implement this and what does that look like from the

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1 scheduling end of this. So we=ve done the
2 prioritization and the scheduling part of it. We=re
3 saying AWell, if we had the right vehicle, Hatch would
4 attempt to move the schedule.@ So we=ve got to figure
5 that piece of it out because people aren=t wanting to
6 just go do this just in and of itself.

7 MEMBER SCHULTZ: Right.

8 MR. JOHNSON: There=s got to be a nugget
9 at the end, a way to change the schedule to facilitate
10 what it is that I want to do for the sake of the safety
11 aspect.

12 Right now, the plant people who know about
13 the project their main question is how do you see this
14 plant out which I can=t really answer.

15 MEMBER SCHULTZ: Right.

16 MR. JOHNSON: I interpret that to mean is
17 it going to be worth it. In the end, is the effort going
18 to be worth it is really the question that I=m hearing..

19 MEMBER SCHULTZ: Right. In my experience,
20 that meant systems engineers that I would say knowing
21 that this process is now available and knowing that they
22 have put their project up against the plant health
23 committee several times and have been turned down that
24 they would say AOh, now I=ll have something because I
25 see these elements that I=ve always thought about that

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1 my project I think will achieve. And I=d like to have
2 the opportunity to run my project through this mill. @
3 That=s good.

4 That=s one of the reasons I was trying to
5 add those tentacles to the description of how this pilot
6 project has worked to make sure we captured everything.
7 I think I=d be very disappointed if the outcome is that
8 organizations are now going to use this to run through
9 a prioritization and say, AThat=s good. We=re done
10 with that. And I=ll visit it again in two years. @ I
11 think there=s much more value to it.

12 MR. BUTLER: Shall I finish up?

13 CHAIRMAN STETKAR: You shall.

14 MR. BUTLER: Alright. This last slide
15 touches on some of our next steps, what we see in the
16 near term as far as this process goes. And that very
17 next step of course is meeting with staff tomorrow to
18 talk a little bit more about the results from the pilot.
19 We=re also going to step through the changes we made
20 to the guidance document. We=re hoping to finalize
21 that guidance document and issue it as a Rev 0 very soon.

22 We also are continuing our discussions
23 with staff of how we=re going to apply this process
24 going forward. And ideally we=d like to see aspects
25 of this process applied to NRC processes, be that

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1 generic communication process or the rulemaking
2 process. But we do see some value with the
3 prioritization process or the aspects of this process
4 applied to emerging issues.

5 I know the staff is working on a SECY paper.
6 I believe they are scheduled to talk with this
7 subcommittee sometime in February. And possibly this
8 will be presented to the full ACRS.

9 CHAIRMAN STETKAR: Yes.

10 MR. BUTLER: So if you need us to support
11 that meeting, we=re willing to do that.

12 MEMBER BLEY: John.

13 MR. BUTLER: Yes.

14 MEMBER BLEY: When you issue the new Rev
15 0 guidance, will that include an appendix or something
16 with many of these examples from the trial?

17 MR. BUTLER: No, we haven=t -- We=ve made
18 it -- Our current direction is to include those examples
19 as part of a separate resource document that we=re
20 preparing.

21 MEMBER BLEY: Okay. So it will be a
22 separate document.

23 MR. BUTLER: Yes. Our intent would be
24 that we=d be able to have a little more flexibility to
25 update that resource guidance document be it online or

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1 in some other form, update it more readily.

2 MEMBER BLEY: But there will be an
3 evaluation of the trials that people can look at and
4 see these things.

5 MR. BUTLER: We=re going to be put
6 together a report that talks about the pilots, yes.

7 MEMBER BLEY: Okay.

8 CHAIRMAN STETKAR: Great. Anything else
9 for the panel?

10 (No verbal response)

11 I do appreciate those of you, Phil and
12 Jerry in particular and John who is gone already, for
13 coming up and doing this. I think having the
14 opportunity to sort of hear a few differences or a few
15 agreements in many cases was really useful.

16 The staff, we have an hour allocated to the
17 staff. Are you guys planning to spend an hour?

18 MR. GLITTER: We may not take an hour. I
19 think we=ll be fairly brief. But it=s up to you.

20 CHAIRMAN STETKAR: Well, what I=m doing is
21 long term planning here in terms of if you=re going to
22 be at least a half an hour we=ll take a break.

23 MR. GLITTER: Take a break.

24 CHAIRMAN STETKAR: We=ll take a break.
25 We=ll reconvene at 4:40 p.m.

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1 (Whereupon, the above-entitled matter
2 went off the record at 4:26 p.m. and resumed at 4:40
3 p.m.)

4 CHAIRMAN STETKAR: Let=s reconvene and
5 give the staff our attention.

6 MR. GLITTER: Okay. I was going to start
7 with some opening remarks. First, the staff
8 appreciates the opportunity to briefly talk about our
9 activities and observations relative to the cumulative
10 effects of regulations and risk prioritization
11 initiative.

12 As you=ve heard today, there=s been a
13 significant amount of effort on the part of industry
14 to support the pilot demonstrations. Likewise, the
15 NRC staff has also invested considerable resources in
16 observing and participating in the pilots= tabletops
17 and generic assessments in support of the risk
18 prioritization initiative.

19 The staff is now working on writing a SECY
20 paper that will provide options for the Commission
21 consideration. We plan to come back to the
22 Subcommittee to discuss those options when we=re
23 further along. I think we talked about February as a
24 relative time frame.

25 Just on a personal observation, I was a

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1 participant or an observer at the Xcel tabletop back
2 in February. And one of the two major reflections from
3 that participation was the discussion of the circ water
4 pump motor and just based on safety alone it was
5 considered a higher priority than some of their
6 regulatory initiatives just based on the fact that
7 failure of that pump would initiate a trip and increase
8 risk.

9 The other major observation was that the
10 train that takes you from downtown Minneapolis to the
11 airport doesn=t always work. And hitchhiking in 10
12 degree weather isn=t desirable.

13 (Laughter)

14 With that, I=ll turn it over to Jason.

15 MR. CARNEAL: Good afternoon. My name is
16 Jason Carneal. I=m a project manager in the Rulemaking
17 branch in Division of Policy and Rulemaking in NRR here
18 at NRC. I=ll be taking you through the first half of
19 staff=s presentation on Cumulative Effects of
20 Regulation and the Risk Prioritization Initiative.

21 Initially, these were two separate
22 efforts. But as I=ll discuss in a few minutes, they=ve
23 been merged into the same deliverable which will
24 culminate in the March 2015 SECY paper.

25 Just a brief outline of what we are

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1 planning to cover today. First, a short background on
2 where we are today and how we got there. The staff=s
3 definition of CER, actions NRC staff have taken to date,
4 the relationships of CER to RPI, key messages, staff
5 perspectives. I=ll be turning it over to my colleague,
6 Antonio Zoulis, to cover the RPI section of the
7 presentation. And then we=ll cover next steps.

8 A little bit of background. The
9 consideration of CER began late 2009 with Commission
10 SRM which directed the staff to consider if a schedule
11 for implementing new regulations should be influenced
12 by the aggregate impact of new regulations and others
13 that may already be scheduled for implementation.

14 Subsequent to that, the staff developed a
15 SECY paper 11-0032 AConsideration of the Cumulative
16 Effects of Regulation in the Rulemaking Process.@ Our
17 initial efforts focused primarily on the rulemaking
18 process. In that SECY, several process modifications
19 to rulemaking were introduced. And the SRM from the
20 Commission approved those changes and provided the
21 staff with further direction which led to SECY-12-0137,
22 AImplementation of the Cumulative Effects of
23 Regulation Process Changes.@ That provided an update
24 on the implementation of the consideration of CER in
25 our processes.

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1 The current focus from the staff is
2 responding to outstanding action items from that SECY
3 paper. In addition, there was another COMSECY-14-0014
4 which went through the current update on recent
5 activities on CER and RPI. In that paper is where the
6 two efforts were merged together. In the March 2015
7 paper, we=ll be including response to the outstanding
8 items on 12-0137 and COMSECY-14-0014.

9 Just to take a step back, what is CER? The
10 language on this slide is taken directly from one with
11 the SECY papers we provided to the Commission.
12 Cumulative effects or regulations describes the
13 challenges that licensees or other impacted entities
14 such as State partners face while implementing new
15 regulatory positions, programs or requirements. It=s
16 particular a challenge that results from an impacted
17 entity implementing these new requirements within a
18 limited implementation period and with available
19 resources.

20 Of course, one of the concerns is that this
21 can potentially distract licensee or entity staff from
22 executing other primary duties that ensure safety or
23 security. So all in all, CER is kind of an umbrella
24 that=s a general description of the challenges that are
25 facing licensees or other entities when we have these

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1 new requirements. RPI is a subset of that. I'll get
2 into that on the next slide actually.

3 To date, the actions of the staff have taken
4 to address CER, we've made several process
5 modifications to rulemaking. We're interacting with
6 external stakeholders early in the rulemaking process
7 that will be in the regulatory basis stage.

8 In the proposed and final rule stages,
9 we're going to also publish a draft and final guidance
10 concurrently with those documents to try and avoid
11 issues that we get into when new requirements come out
12 and hit the street and you don't have the staff guidance
13 to tell you what that means. What we get is a lot of
14 different interpretations. That can lead to issues,
15 scope creep, all kinds of things, unintended
16 consequences we want to avoid.

17 We're also engaging extra stakeholders on
18 CER impacts of proposed rules. So we've developed a set
19 of questions that are included in proposed rule packages
20 that go out to the public to solicit comment on the
21 cumulative effects of regulation. And we've also
22 implemented additional public interaction during the
23 final rule implementation.

24 And currently in response to the SRMs we
25 received on the SECY paper as I mentioned, the NRC staff

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1 is considering expansion to other regulatory areas.

2 So a little bit about the relationship of
3 CER to RPI. When we look at CER again, that=s
4 considering all generic actions. RPI is an initiative
5 to explore the idea of enhancing safety by applying PRA
6 to determine the risk significance of current and
7 emerging reactor issues in an integrated manner on a
8 plant-specific basis. A lot of the process
9 enhancements that we=ve made to date are on rulemaking
10 which overarches all licensees, all the effected
11 entities. RPI is kind of a conduit or a process that
12 we could use to consider plant specific information.

13 Again, the deliverables are merged in
14 COMSECY-14-0014. And if approved by the Commission,
15 RPI could address the CER concerns for power reactor
16 licensees.

17 A few key messages from the staff regarding
18 the cumulative effects of regulation, a resolution of
19 adequate protection issues takes priority over CER
20 concerns. We=ve already implemented several
21 rulemaking procedures as described that improved
22 consideration of CER. And the staff=s efforts to
23 expand consideration of CER are being undertaken in
24 conjunction with actions directed by the Commission
25 including a response to the SECY papers. And the

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1 consideration of expansion to other regulatory areas
2 will be included in the March 2015 paper.

3 MEMBER BLEY: I have a question. The
4 first bullet, of course, you have to deal with that
5 equipment separately. But it seems to me there might
6 be cases where it could be argued that something that=s
7 being done for adequate protection is somehow already
8 covered in the larger set of existing regulations. I
9 don=t know if anything like that has ever come up.

10 But it seems to me it takes priority is
11 probably right. But it could be that if you take a broad
12 look at the existing regulations it might have already
13 reached the adequate protection. And I don=t know if
14 that=s something you argued about, thought about or.

15 MR. CARNEAL: This would specifically be
16 targeted at the issues where questions arise over
17 adequate protection. For those types of issues, we
18 would not be considering CER as a driver for
19 implementing those new. For example, an event like
20 Fukushima happens and we gain some new knowledge.
21 That=s what we=re trying to get at in this bullet.

22 MEMBER BLEY: Go ahead.

23 MR. CARNEAL: Tara, I don=t know if you
24 have any additional remarks.

25 MS. INVERSO: Yes, thank you. This is

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1 Tara Inverso from the Rulemaking branch. And just a
2 couple of surrounding details about that first bullet,
3 that was our guiding rule when we first developed CER.
4 And it=s something that we still take into account.

5 When we first developed CER, the idea was
6 to look at all of the activities that are on your plate
7 and then to implement that regulation that you were
8 about to implement in a way that didn=t take away from
9 resources. So in that case when something was being
10 issued for adequate protection, you wouldn=t consider
11 those other elements.

12 I=d say as an example of when an issue was
13 adequate protection, we could yet consider CER as the
14 50.46(c) performance based fuel cladding rule where
15 those requirements and those changes are needed for
16 adequate protection to maintain that level of adequate
17 protection. But since the staff and the industry had
18 prepared the plant-specific safety justification, we
19 would take into account CER. We could look into ways
20 to implement the rule in such a way that resources were
21 balanced. It is a little bit case by case though I=ll
22 say.

23 MR. CARNEAL: And you heard the industry=s
24 perspective at the end of their presentation.
25 Apparently, those last three bullets that they had at

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1 the end of their last presentation, the staff is
2 currently considering those as part of the working
3 group. So our responses to that will be included in the
4 March 2015 SECY paper.

5 And that=s all I had as far as the
6 overarching broader cumulative effects of regulation
7 presentation. I=ll turn over the specifics -- Oh
8 actually. Okay.

9 Staff perspectives. Some benefits of
10 considering CER in our processes increases interaction
11 with external stakeholders. It can improve the quality
12 of regulatory analyses by seeking cost information
13 early in the process. It can inform implementation
14 schedule and limit unintended consequences. One of the
15 big ones there is also providing stability by issuing
16 the guidance along with the requirements. You don=t
17 get this situation where you have multiple
18 interpretations on the new requirement causing issues
19 down the line.

20 The information gathered can be used to
21 evaluate regulatory actions necessary to address safety
22 or security issues. And with that, I=ll turn it over.

23 CHAIRMAN STETKAR: No, you won=t.

24 (Laughter)

25 MEMBER SKILLMAN: Let me ask you a

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1 question, Jason. How does the NRC ensure that these
2 potential benefits you've identified aren't
3 misinterpreted as a further example of the NRC being in
4 bed with industry. I could see those who are not privy
5 to a meeting such as this interpreting from these
6 bullets is just further indication that industry and the
7 NRC are in collusion with each other.

8 MR. CARNEAL: Particularly for these
9 actions that we've identified, those are targeted at the
10 general public as well as industry. It's all our
11 external stakeholders. I see the benefit of increased
12 interactions on the front end. It gets us a better idea
13 if we can get this type of input from various parties
14 that will have a better idea of what those new
15 requirements and what effect they'll have not only on
16 licensees but on the public.

17 For example, we're currently considering
18 -- We have another SECY paper going up on a
19 decommissioning transition rule. And we would expect
20 significant public interaction on that rule
21 particularly with our state partners and with anyone who
22 is involved with emergency planning. So we'll be
23 looking for that type of input not just from licensees
24 or industry but we really need to hear from the public
25 on how these types of requirements will affect them.

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1 Some of these actions are meant to solicit that type of
2 input early and up front.

3 MEMBER SKILLMAN: Thank you.

4 MR. KOKAJKO: May I add something please.

5 CHAIRMAN STETKAR: Yes.

6 MR. KOKAJKO: Lawrence Kokajko. I'm the
7 Director of the Division of Policy and Rulemaking. One
8 of the comments that you have is something of concern
9 to us as well. And I'd like to point out that even those
10 who are intervenor type groups such as Union of
11 Concerned Scientists may also have the concerns about
12 the cumulative impacts of regulation as well because
13 they believe that if you focus on the wrong safety
14 significant items you could be detracting from
15 something much more significant.

16 In fact at the recent regulatory
17 information conference last March, David Lochbaum of
18 the Union of Concerned Scientists and Joe Glitter and
19 I were on a panel. And we discussed just that topic.
20 And they said that -- David Lochbaum agreed that if you
21 focus forcing low safety significant activities you
22 would detract from those that could be more important
23 to overall safety. And he thought it was a good
24 initiative.

25 Now that=s one datapoint. But we do

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1 believe that to be true. And I think the Commission
2 we've got to be true which is why we're on this pathway
3 now.

4 MEMBER SKILLMAN: Thank you. Thanks.

5 CHAIRMAN STETKAR: Jason, the second
6 subbullet under there includes quality of regulatory
7 analyses by seeking cost information early in the
8 process. We've collectively, ACRS and ACRS
9 subcommittees, over the last six months or so have had
10 presentations on improvements or enhancements to the
11 regulatory analysis process.

12 How does this particular initiative, if I
13 can call it initiative or cumulative effects of
14 regulation, RPI, fit into that process. I mean you
15 raised it under this second subbullet here.

16 MR. CARNEAL: Yes.

17 CHAIRMAN STETKAR: I'm curious about that.

18 MR. CARNEAL: Particularly in their
19 regulatory basis development stage we've added steps
20 where we're soliciting input on the cumulative effects
21 of regulation into that process and development of that,
22 of the regulatory basis for a rule will inform the
23 regulatory analysis. And what we've seen in the past
24 is we think we need better information up front on how
25 a proposed rule language would affect, be implemented

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1 in the field and how maybe more operational experience.

2 For example, we did some case studies with
3 the industry that are included in the COMSECY-14-0014
4 where it was shown that our cost estimates for
5 implementation of certain rules range between five and
6 19 times lower than actual implementation costs. In
7 that regard, we would be looking for input from the
8 affected parties on how that would be, these in the
9 requirements, would affect their day to day operations
10 and solicit input on if there are any unintended
11 consequences.

12 Simply, one example would be Part 26 QC to
13 QV rule that we're looking at right now. In that,
14 there's a provision for redefining unit outage. But
15 just a simple word change we found can have very drastic
16 consequences and implementation. That's the type of
17 feedback we'd be looking for.

18 MS. INVERSO: This is Tara Inverso again.
19 If I could just add one more element that not only did
20 the CER case studies give the general magnitude
21 difference but the NRC and the industry calculated the
22 implementation. The industry also provided a handout
23 at a public meeting with some suggestions on overall how
24 to improve regulatory analyses.

25 This team, the CER team, and the regulatory

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1 analysis updates Alysia Bone and Fred Schofer that
2 you=ve heard from quite a few times. They do
3 communicate and work together. So those suggestions
4 will be spoken to in the SECY paper and eventually ruled
5 into the cost benefit plan in SECY-14-0002.

6 CHAIRMAN STETKAR: Is there any notion at
7 all -- and you can tell me that=s irrelevant -- of using
8 the risk prioritization part of this as input to the
9 regulatory analysis?

10 MS. INVERSO: We have discussed that. And
11 I can say we=re still discussing it. And it will be
12 addressed in the SECY paper. What I can say is that we
13 do think that there is a value in what we=ve seen both
14 from the generic assessment evaluation team and the
15 integrated decision making panel even if it=s just to
16 better understand the affected groups in the regulatory
17 analysis. But you can break it down. You can break out
18 the different implementation schedules. So exactly
19 the details is still a little bit to be determined.

20 CHAIRMAN STETKAR: But you did say that you
21 do plan to address that explicitly.

22 MS. INVERSO: Yes.

23 CHAIRMAN STETKAR: To some greater or
24 lesser degree in the paper.

25 MS. INVERSO: Yes, in the paper.

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1 CHAIRMAN STETKAR: Good. Thank you.

2 MR. CARNEAL: And some of that will be
3 discussed specifically in the RPI section when we
4 discuss our options for moving forward on RPI.

5 MEMBER BLEY: Jason, several times in your
6 slides you've said in dealing with this cumulative
7 effects of regulation that you're seeking input to
8 determine whether -- It kind of sounds like you're
9 saying AIt=s up to you guys out there to squeal and say
10 we've got a problem here.@ Is there anything in this
11 plan that=s pushing the staff to look to see if the new
12 things there thinking of implementing are in fact
13 affecting this cumulative effects of regulation?

14 MR. CARNEAL: A lot of the changes that
15 have already been made such as rulemaking process and
16 approved by the Commission those are focused at
17 soliciting frequent and up front interaction with the
18 public and external stakeholders. The working group is
19 currently talking about the possibility of implementing
20 other new processes with the staff to try and address
21 some of the concerns with cumulative X --

22 MEMBER BLEY: And function.

23 MR. CARNEAL: Yes, internally.

24 MEMBER BLEY: Okay.

25 MR. CARNEAL: Internal NRC process.

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1 We=re currently coming to consensus on what that would
2 look like and how we would implement it. So that will
3 be covered in the March 25 paper.

4 MEMBER BLEY: Oh, it will be in there.
5 Okay.

6 MR. CARNEAL: It=s a hot topic of
7 discussion.

8 MEMBER BLEY: Thank you.

9 MR. CARNEAL: Do you have any other
10 questions before we move onto the specifics on RPI?

11 MR. ZOULIS: You=re doing such a great job.

12 MEMBER BLEY: I was going to say try as I
13 might I can=t think of any more.

14 MR. ZOULIS: I=m going to go through your
15 slides.

16 MEMBER BLEY: I=m going to jump the gun,
17 Antonios. Before you put up your slides, as we went
18 through this whole day today we saw the process of
19 screening with a 30 minute look or whatever and then a
20 more deep look. And if you get past these qualitative
21 screens without the benefit of additional modeling you
22 don=t look any further. In some areas, staff has argued
23 that we should quantify where we can. And when you
24 can=t, then rely on these other paths.

25 Are you in agreement or have you decided yet

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1 whether you're in agreement with these qualitative
2 screening steps in cases where quantification is
3 readily at hand?

4 MR. ZOULIS: That's a great question. And
5 thanks for that. This is Antonios Zoulis. From our
6 observations what we've noticed is where risk
7 information was available it facilitated the discussion
8 of the IDP.

9 MEMBER BLEY: I haven't had the benefit of
10 sitting in.

11 MR. ZOULIS: And we think --

12 MEMBER BLEY: They do go for it where they
13 have it.

14 MR. ZOULIS: Well, when they did it was
15 beneficial.

16 MEMBER BLEY: Okay.

17 MR. ZOULIS: It wasn't done in our
18 observation the majority of the time. It was actually
19 in the minority of the time. So we think -- Again, the
20 opinion of the staff is if the information is readily
21 available it should be used. But again, Bruce from
22 Robinson left. Bu we understand though there is a
23 cumulative back. So we wanted it to be balanced where
24 the resources weren't overburdened now by a new process
25 and being over utilized to try and address this through

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1 additional PRA resource to address the concern of
2 cumulative impact.

3 But again when it was used it facilitated
4 the discussion. We think it was more, the results were
5 more, objective. It removed a lot of subjectivity out
6 of the decision making. And I think Fernando who is
7 also co-leading this effort with me had discussed that
8 it shouldn't be quantified as needed. Quantified as
9 available is our opinion kind of on our take. I don't
10 know if Fernando wants to elaborate on that.

11 MR. FERRANTE: This is Fernando Ferrante.
12 I'm also co-lead on the RPI effort and have been in
13 several of the licensees on pilots and tabletops. We
14 did provide a comment explicit to NEI and we haven't had
15 the benefit of looking at the response they just sent
16 to us. But we did indicate that maybe there needs to
17 be something where a question is asked ADo you have
18 readily available PRA modeling and to what level of
19 confidence is the model@ so that you can have a direct
20 discussion first on what the insights are.

21 If you're going to do qualitative screening
22 and then ask that question, then you might bypass the
23 information that you have. We think that's one way to
24 incentivize at least what you already have existing in
25 terms of PRA capabilities to be used further.

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1 We did see on a lot of these demonstration
2 pilots that PRA language seems to seep in more where it
3 wasn't there before. At this point in time it isn't
4 clear to us at least that it will incentivize further
5 modeling. So there's a question on the table in terms
6 of the guidance that we receive on the COMSECY that
7 started RPI whether it's going to incentivize to the
8 level that maybe was understood on that COMSECY or
9 whether it will be sufficient for the effort that we're
10 now trying to do conjoined with CER.

11 But those are some of the questions that we
12 explicitly put to NEI and we will have to discuss on the
13 March 2015 paper and see how do we move on and what kind
14 of response we get there.

15 MEMBER BLEY: Okay. Thanks. I mean
16 there were cases we saw and that the staff brought to
17 us where it goes a little further and they've said AOh
18 my. If you want to quantify this, it will be really
19 difficult. And we need to take the qualitative look.
20 And on some of those, at least those of us who have done
21 the PRA thing thought actually very quick modeling could
22 get you the kind of answer you're looking for without
23 doing immense amounts of effort. I hope you're
24 thinking about that as you go forward.

25 MR. ZOULIS: I think that was illustrated

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1 at one of the pilots where we had kind of brought that
2 up and in subsequent meetings they were able to provide
3 that evaluation to us. So this illustrates that with
4 a little effort you can get I think a substantial benefit
5 from using risk insights and quantitative information.

6 MEMBER BLEY: Sorry for the interruption.
7 Go ahead.

8 MR. ZOULIS: Are you sure you're done with
9 your questions?

10 MEMBER SCHULTZ: I've got one more, but
11 maybe go ahead with your presentation. I'll come back
12 to my comment.

13 MR. ZOULIS: I'm Antonios Zoulis. Again,
14 I'm with the Division of Risk Assessment. I thank you
15 for the opportunity to present to you today.

16 This initiative as Chairman Stetkar has
17 mentioned earlier was as a result of Commissioners
18 Magwood and Apostolakis issuing a Commission memorandum
19 back in 2012 and asked the Commission to evaluate a
20 process where we could utilize risk information to
21 prioritize issues on an integrated manner on a
22 plant-specific basis.

23 Part of that also asked that if you
24 developed a full scope Level 1 and Level 2 PRA you could
25 propose alternatives and perhaps defer issues that was

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1 not as safety significant on your site. The Commission
2 issued then the SRM in February 2013 asking the staff
3 to again develop a notation rule paper to explore how
4 such a process could incentivize as Fernando mentioned
5 earlier PRA Levels 1 and 2.

6 It also asked us to consider rulemaking and
7 whether or not we could develop maybe a modification
8 5012 or some other rule to institutionalize this process
9 and have a way where plants who do develop a PRA could
10 just come in with an alternative order or a schedule
11 change.

12 I think also Joe alluded to it earlier
13 without having to come to us. But that would obviate
14 the need of an exempt. But we think that would require
15 rulemaking in order to accomplish that aspect.

16 It asked us to address how -- I think Dennis
17 mentioned earlier -- if you have a lot of issues that
18 are low or very low how would you ensure that they don't
19 get continuously deferred. The SRM talked about
20 backstop ensuring that perhaps at a certain time
21 regardless of the significance you would have to
22 implement or do something with that issue.

23 The following SRM to COMSECY-2014-0014
24 asks us to evaluate how inspection and compliance issues
25 should be treated. We'll get into that later. From

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1 our observations, it=s demonstration pilots. We have
2 some currently strong feelings about those issues.

3 And, of course, the process needs to be
4 risk-informed principles. We understand that
5 risk-informed is how we do business at the NRC. We=re
6 not risk-based. You need to look at all those aspects
7 of not only the risks but deterministic attributes and
8 qualitative attributes.

9 We feel that the nuclear safety is advanced
10 when licensees and staff focus their time, attention and
11 resources on issues of greater safety significance at
12 each plant by addressing the most safety significant
13 issues first. And again, as our tag line says, it=s not
14 only for the industry but it=s also staff. We=re also
15 faced with these impacts. And we need to make sure the
16 staff is focusing their efforts on the most important
17 issues, not only the industry.

18 Since the SRM was issued back in 2013, there
19 had been a lot of activity between the staff and other
20 interested parties. We=ve had seven public meetings.
21 We had a RIC sessions that was highly attended as
22 Lawrence mentioned earlier. We supported tabletops,
23 both generic and plant-specific. And we merged
24 recognizing that RPI is very closely related to CER
25 these two into one deliverable due in March of 2015 and

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1 of course our interactions and participation in the
2 demonstration pilots.

3 And I want to mention that the DPR and DRA
4 staff have been working very closely all along on this
5 issue together. Both have participated in the CER
6 working groups and their participation in the RPI
7 working groups. We understand that these efforts are
8 very closely linked and that=s the way we=ve been
9 approaching this problem or this issue.

10 I=m going to go into a little bit now about
11 demonstration pilots. And this is one of our favorite
12 slides here.

13 CHAIRMAN STETKAR: It=s really pretty.

14 MR. ZOULIS: It is. Beautiful colors.
15 This kind of illustrates on a pictorial how the issues
16 that were prioritized at the demonstration pilots
17 impact almost every division in NRR, the regions and
18 other offices in the agency. So we=re talking about a
19 process that has tentacles throughout the agency.

20 I don=t know if Sam=s here. And Sam Lee,
21 our deputy director, he was very instrumental in making
22 sure that we had participation from all the divisions
23 in NRR if they could to come to the demonstration pilots
24 making more that some of our efforts were doing outreach
25 to the other offices, meeting with management and NSIR

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1 and other divisions to make sure they understood what
2 we're trying to do with this process. They wanted to
3 maintain that this is focused on what's most safety
4 significant. Let's focus our efforts on those items.
5 I think we did a tremendous job in doing that for
6 participation in the demonstration pilots.

7 Getting on to some specific observations
8 that we had, back in July of 2014 we developed, the staff
9 developed, a plan to participate in the demonstration
10 pilots. I reference the ML number on the back of these
11 slides. And we came up with eight high level
12 objectives, what we were looking for through this
13 process to be able to evaluate if this process is viable,
14 if it was repeatable, transparent, how it incentivized
15 the PRA, how it handled those low issues and deferral
16 of those issues, and how it addressed findings,
17 violations and degraded or nonconforming conditions.

18 We feel that through observations there was
19 good discussion during the GAP and the IDP panel
20 meetings. And the strength was they were concerning
21 both the positive and adverse effects of an issue. I
22 mean that I think was a very positive impact. Because
23 as you mentioned earlier, Dick, there are issues that
24 you may do that cause unintended consequences. And you
25 need to be able to flush out those. I think the IDP did

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1 a good job trying to look at that kind of information.

2 A lot of this stuff was mentioned
3 throughout the day. So if I'm repeating myself I
4 apologize or repeating what others mentioned earlier.
5 There was exposure to the staff and other management to
6 PRA which we thought that was a plus where they may have
7 not been exposed to that kind of risk insights. Now
8 they were. So we thought that was a positive aspect and
9 a way that perhaps could incentivize PRA and the use of
10 PRA.

11 As I mentioned earlier, when PRA
12 information was used it helped inform and facilitate the
13 discussion of the IDP and I believe, my personal
14 opinion, reduced the subjectivity of the decision
15 making.

16 The process did not exercise how you would
17 defer issues or how you may eliminate issues or what
18 would occur if you came back and reshuffled the deck.
19 That was not well exercised.

20 However, as Sonja illustrated earlier,
21 there was direct benefit from participating in the
22 pilots for issues that they felt were of low safety
23 significance such as the modification, such as the
24 commitment to monitoring gas, which they had a very
25 robust process in place already. And they were already

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1 doing performance based evaluations. There wasn't a
2 real benefit to them to go to this monthly interval for
3 the gas inspection. So they saw a benefit to doing
4 this.

5 For inspection findings and corrective
6 actions, this is an area where we feel, the staff feels,
7 strongly that this is already risk-informed. We have
8 the ROP which is already a risk-informed process. And
9 we're really talking about issues that are very low
10 safety significant. If they are of high of safety
11 significance, those issues are usually handled
12 immediately. They're not going to be allowed to linger
13 or to not be corrected.

14 So we're looking at a very small subset of
15 issues which are of very low safety significance. And
16 the premise of the ROP and how we deal with those very
17 low issues is that the corrective action program of the
18 facility is going to address those issues. It's going
19 to be put into the corrective action plan. You're
20 supposed to correct them at the best available interval.

21 We didn't really understand how not having
22 an additional prioritization process on top of that
23 would benefit or add any value to an already
24 well-established risk-informed process. We felt it
25 may actually introduce some regulatory stability now

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1 where inspectors would go out and try to evaluate
2 corrective actions and not know whether or not the
3 corrective actions were completed or why they were
4 deferred.

5 I don't want to say that you can use it ever
6 for inspection findings right now. But we're
7 struggling with the benefit of that process of why you
8 would want to risk inform an already risk-informed
9 process which is like I said well established and it's
10 been going on for at least 14 years already. We're very
11 confident in the way --

12 MEMBER BLEY: Did any of the pilots look at
13 inspection items?

14 MR. ZOULIS: There was one issue that was
15 inspection.

16 MEMBER BLEY: Oh, there was. Okay.

17 MR. ZOULIS: One issue. So again we need
18 a little more further discussion and a little more
19 exploration on that. The Commission asked us directly
20 to consider that. We're going to have to address that.

21 There was discussion about the aggregation
22 process. And as was alluded to earlier, the IDPs did
23 look at issues within the priority and against the cross
24 priority. And while that was done I think in a positive
25 way, the structure -- I think you mentioned this, John,

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1 Chairman -- there really wasn't a structured way of
2 doing that. And guidance in my opinion on how you would
3 change the priority of an issue from one priority to
4 another I think introduces again subjectivity into the
5 process. You've already conducted this objective
6 thorough process. You've come to the priority. Now
7 because your SRO or your champion says, AI want it to
8 be priority two@ you've changed the priority now and
9 kind of discredited all what was done prior to that.

10 I can understand when the licensees
11 evaluate issues for scheduling. For resources
12 perhaps, you may end up doing something that=s priority
13 four before something that=s priority three. I think
14 that=s acceptable personally. However, any of the
15 priority without very clear guidance on why you did that
16 may kind of introduce some subjectivity to the process.

17 The reliability category. That was tossed
18 around today many times. Overall we think if there=s
19 a nexus to safety, a clear nexus as a circ water pumps
20 as John Grubb mentioned earlier had a clear nexus to
21 safety that they should be prioritized. The plant
22 should be focusing on those issues that are safety
23 significant and also have a reliability attribute.

24 However, when we didn't see that connection
25 or that connection wasn't clearly identified, we=re

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1 struggling with whether or not those issues should be
2 included or part of the process.

3 MEMBER BLEY: The guidance is -- The NEI
4 guidance has sort of rules on how to put those priorities
5 in and safety trumped everything in those rules as I
6 remember them. So it seems they've covered that unless
7 you're talking about how the licensee might rearrange
8 the priorities.

9 MR. ZOULIS: Let me give you an example one
10 of our team members observed. If you had an issue that
11 had to do with obsolescence -- Let's say you had a
12 obsolescence issue -- and there was a long lead time to
13 repair that issue, that could come out as a higher or
14 medium priority in reliability.

15 MEMBER BLEY: Right.

16 MR. ZOULIS: And that may or may not have
17 a direct impact to safety. It just happens to be that
18 the issue is an obsolescence issue and it has a long lead
19 time to repair the item. So we were clear how an issue
20 like that can trump a safety issue.

21 MEMBER BLEY: But if you follow the rules,
22 it doesn't. The rule is if it's a -- I'm sorry. If it's
23 a high safety --

24 MR. ZOULIS: It will be a priority two. If
25 it's a high --

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1 MEMBER BLEY: If it=s a high, it=s a
2 priority one. If it=s a medium, it=s a priority two.

3 MR. ZOULIS: Never going to get a priority
4 one item. Never. But most likely you will never get
5 any priority one items.

6 MEMBER BLEY: But you could get from the
7 rules a low safety being trumped I think by two high
8 reliability ones. Thank you.

9 MR. ZOULIS: Based on observations, there
10 was a little bit of issue with the reliability category.
11 I understand why it=s there. I think it=s an important
12 characteristic. But again, it=s going to play out on
13 how in the March paper what we identify as options, how
14 we think we will be able to integrate some sort of
15 process like this into our regulatory structure.

16 MEMBER BLEY: I think put numbers on it.
17 But the very lows and lows I suspect if you put numbers
18 on it wouldn=t jump up in any analysis you guys would
19 probably do either. But I=m not sure I understand where
20 you=re headed. Go ahead.

21 MR. ZOULIS: There was a lot of discussion
22 that through the demonstration pilots that I believe
23 incorporated updating the guidance. And tomorrow
24 we=re going to have a public meeting to discuss those
25 updates and the insights gained from the demonstration

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1 pilots.

2 The other issue, the third bullet,
3 assessing issues of RP, security and EP, those flow
4 charts have gone through some modification. But the
5 staff is still struggling with whether or not they're
6 characterizing those issues.

7 MEMBER BLEY: And you're looking at the
8 most current versions of this.

9 MR. ZOULIS: We haven't seen the new.

10 MEMBER BLEY: The one you showed us this
11 morning you just got.

12 MR. ZOULIS: We just got it last week.

13 MEMBER BLEY: Okay.

14 MR. ZOULIS: So security has been working
15 with NEI and trying to make sure that those issues are
16 being characterized appropriately. So those are still
17 things we're trying to work through in those areas of
18 EP and Security.

19 MEMBER BLEY: Were there any of the pilots
20 that actually had actions that were security issues to
21 begin with?

22 MR. ZOULIS: Davis-Besse had a few issues.
23 There were a couple of cyber security.

24 MEMBER BLEY: Oh, that's right. There
25 were.

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1 MR. ZOULIS: We had a separate public
2 meeting September 8th to go through tabletops just for
3 EP, RP and Security.

4 MEMBER BLEY: Okay.

5 MR. ZOULIS: So we've been working with NEI
6 to make sure that those flow charts do get updated. We
7 would have again interactions with our staff to
8 participate from NSIR and also from DRA and RP to work
9 through those flow charts.

10 Again, it's kind we're going back to that
11 issue where you can have a gold-plated, full scope Level
12 1-Level 2 PRA. But that still may not address issues
13 that may not lend themselves well to quantitative
14 analysis. So just as the ROP struggled with those
15 cornerstones and how to evaluate them, we're kind of
16 getting to those roadblocks as well to make sure that
17 we're characterizing the issues appropriately.

18 CHAIRMAN STETKAR: That's why I brought it
19 up in the broadest sense of the regulatory analysis
20 because we had the discussion about these qualitative
21 considerations and that. When you're looking at a lot
22 of the issues across the agency that are dealt, there
23 isn't a clear nexus with safety. And yet the agency has
24 to make decisions about obligating rulemaking or
25 anything on those issues. That's even outside the

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1 reactor community is an issue.

2 MR. ZOULIS: So again we=re working and
3 observing the demonstration pilots. And of course
4 we=re going to brief the ACRS in February as Joe
5 mentioned earlier and then the full committee briefing
6 in March right after the paper is issued. We=re looking
7 forward to interacting with the ACRS on these issues and
8 working with our stakeholders to make sure that we have
9 the information we need to develop the paper to the
10 Commission with the options.

11 MEMBER POWERS: The areas that you=re
12 having difficulty doing quantitative analysis on those
13 are just security issues. Or what range of issues are
14 you having?

15 MR. ZOULIS: Well, RP and EP are
16 qualitative. They=re very qualitative. And Security
17 right now is qualitative. So all three of those areas.

18 MEMBER POWERS: I don=t understand why
19 radiation protection is qualitative.

20 MR. MARKLEY: This is Tony Markley. I was
21 at the Summer and the Robinson RPI tabletops and
22 exercises. And the example I give for radiation
23 protection is if you look at the seal replacement issue
24 that was evaluated. If you go to a reactor coolant pump
25 seal that you have to replace maybe every six years

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1 versus every two year and you look at the number of seals
2 where you have three of four pumps per plant, you're
3 going to have a significant positive impact of radiation
4 dose averted by going with the longer life seals.

5 This process did a great job if you have
6 numbers that you can plug into the evaluation and
7 decision process. But for things like this in terms of
8 positive benefits or adverse benefits in radiation
9 protection, EP and security, it really doesn't do a good
10 job with that.

11 MEMBER POWERS: But I guess the question I
12 have is why is radiation protection not an eminently
13 quantifiable topic.

14 MR. ZOULIS: I don't know if our HP expert
15 is here.

16 MEMBER POWERS: On security, I have the
17 same question. I'm just not as prepared to rebut any
18 answer you give. I think I'm willing to take that issue
19 on because I can't think of anything that's more
20 eminently quantifiable than radiation protection.

21 MR. CARNEAL: I had a chance to observe the
22 Prairie Island demonstration process and one of the
23 issues that was on their list was an upgrade to rad
24 monitors. And I think it might have been more of a
25 process definition issue as they were following the

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1 process that was defined in the guidance. And then the
2 feedback that the members from the industry that
3 participated there had back to NEI was that those
4 process diagrams didn't fit really the RP
5 considerations. They thought it should screen out a
6 little higher than what the process was giving them.
7 That=s an issue.

8 MEMBER POWERS: That=s their business.

9 MR. CARNEAL: Yes.

10 MEMBER POWERS: Radiation protection I
11 think. Security is a little more problematical.
12 Certainly people are making progress in that area. But
13 I=m probably way too immature for the regulatory process
14 right now. Environmental protection --

15 MR. CARNEAL: Emergency planning.

16 MEMBER POWERS: I=m sorry. Emergency
17 planning. Now that you have the ETEs, can=t you use
18 those as the vehicle for quantification?

19 MR. GLITTER: This is Joe Glitter. I
20 mean, Dr. Powers, it=s possible to quantify a lot of that
21 information. For example, in radiation protection,
22 depending on whether you=re using linear no threshold
23 or linear threshold models, you can always come up with
24 latent cancer risks and that sort of thing and likewise
25 with evacuation time estimates.

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1 But the question you have to ask yourself
2 is are you really getting anything from that
3 quantification. And I think in the way this process is
4 being implemented I think that the quality of the
5 information you get in those areas is probably what you
6 want for decision making purposes. If you overburden
7 yourself with quantitative information, it=s not even
8 clear what you do with that information.

9 CHAIRMAN STETKAR: The only part of that,
10 Joe, though is right now the way the priorities are set
11 is you get one from column A or two from column B or one
12 medium from column C or those types of things where
13 column A safety in principle has more quantitative
14 information. The other ones if they=re completely
15 qualitative it=s hard to say how objective am I in terms
16 of evaluating. Do I have a medium versus a low or a very
17 low in those other areas?

18 You don=t need to necessarily have them
19 all on the same playing field in terms of you obviously
20 can=t have protection against somebody falling in the
21 spent fuel pool on the same metric as core damage
22 frequency. But you can use personnel dose averted.

23 MR. GLITTER: And there have been areas for
24 example in one of the tabletops I=ve observed. When
25 they were looking at a cyber security problem, they

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1 looked at a subset of critical digital assets that had
2 a direct nexus on safety. And they're rated the same
3 as safety. They didn't treat them any differently.

4 So there are ways you can do it. But I
5 think in the flow charts that have been developed and
6 the process that's been outlined follows fairly closely
7 to what we do in the ROP where we also have to balance
8 inputs in those areas along with safety inputs.

9 MEMBER SCHULTZ: I'm not sure if that's a
10 criticism or --

11 MEMBER POWERS: Yes. I mean defense but
12 it's scandalous.

13 MEMBER SCHULTZ: Again, the way I
14 understood what has been proposed is it's a guidance
15 document. And the prescription for the categorization
16 is I think a good guidance. And it does match up with
17 what the agency has considered to be the appropriate
18 priority in general.

19 It would be good to have -- There's no
20 reason why with regard to radiation protection that
21 those elements can't be quantified as Dana has
22 suggested. Like in the safety area, there's been a push
23 to say if you can't quantify them one to another than
24 it's appropriate or at least allowable to do a
25 qualitative evaluation of them and rank them low, medium

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1 and high and move forward with that. I don=t
2 necessarily think that=s a problem.

3 I think what the process doesn=t -- I
4 haven=t studied the diagrams, but I think what the
5 process doesn=t capture is all of the connectivity
6 between safety and radiation protection and safety and
7 emergency planning. And how one evaluates those would
8 be something that with experience with --

9 You know these pilots have just been an
10 initial phase of the work. And one would expect that
11 in this initial phase we would focus on safety. And you
12 said there are other pilot exercises that have been held
13 where you=ve gone off and said, ALet=s look at the
14 projects that have an impact on radiation protection and
15 see if we can differentiate. Come up with a process
16 that better differentiates those one to another.@
17 That=s good process.

18 But I think in time that will be developed.
19 I think rather that=s a reason to move forward rather
20 than to hold up anything that is a concern with the
21 project.

22 I think the elements that you=ve chosen,
23 the eight objectives that you looked to exam here, are
24 good ones. But I don=t think they all necessarily fit.
25 That is each one looks at the process a little

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1 differently. And so the fact that the process doesn't
2 meet all of the eight objectives as you'd like to see
3 it or hope to see it doesn't draw back from it. I think
4 to some extent the process has met all of your
5 objectives, the outset objectives.

6 MR. ZOULIS: We think you summarized it
7 correctly. We are working with industry. We are
8 trying to make sure that those flow charts are approved
9 and we have continuous interaction to do that. And
10 there are continuing to be interactions. But whether
11 they're final there, I don't think that's --
12 Personally, I don't think -- I know for security
13 definitely it's not the case. But there is some
14 discussion with our SMEs.

15 So I think that's all I had. Next steps.

16 MR. CARNEAL: Sure. I'll just cover the
17 next steps that the staff is currently undertaking.
18 We're addressing those outstanding items from the two
19 SRMs we received, continue and enhance existing
20 processes whether they're to be in rulemaking or
21 expanding to other areas.

22 We're continue to explore means to expand
23 or address CER for a broader range of regulatory
24 activities. In that, we're including considerations
25 of processes like rulemaking for RPI for developing

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1 additional internal processes to address CER in-house
2 and at NRC.

3 The roll-up of the lessons learned from
4 above efforts will be folded into our March 2015 paper.
5 And in that paper we are going to develop and propose
6 options moving forward for RPI. The Commission
7 specifically requested that we brief ACRS ahead of the
8 March 2015 paper. And then as we've discussed we're
9 looking at subcommittee in February of 2015 and a full
10 committee in early March.

11 Are there any other questions?

12 CHAIRMAN STETKAR: You're on target for
13 March 2015?

14 MR. CARNEAL: I think we're on target for
15 March 2015. It's going to be a significant effort
16 writing all this stuff and gaining consensus is going
17 to be.

18 CHAIRMAN STETKAR: Are you on target to
19 come to us at the subcommittee level in February?

20 MR. CARNEAL: Yes.

21 CHAIRMAN STETKAR: Okay.

22 MR. CARNEAL: A typical plan is to send you
23 a copy of that two weeks ahead of time I'm told.

24 CHAIRMAN STETKAR: It's usually a month
25 but we can negotiate over time. Not the day before the

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1 subcommittee meeting.

2 MR. CARNEAL: I'm not sure we can do a
3 month.

4 CHAIRMAN STETKAR: It sounds like this one
5 will be rather meaty. Do any of the members have any
6 more for the staff?

7 MEMBER SCHULTZ: One comment or question
8 that I have is that we talked about the RPI and then of
9 course there's the indication that cumulative effects
10 of regulation looks somewhat similar to the RPI process.
11 So we've determined that it would be appropriate to
12 consider them in the same SECY discussion and then
13 regulatory analysis is another thing that also uses PRA
14 and all these other things. And it would be nice if that
15 looked somewhat the same. So we'll put that in.

16 There is some benefits for once we decided
17 to do. But I see a potential negative and that is with
18 all of that combination we don't focus on any one of
19 those things enough so that we get it done. Rather we
20 put together this large document and process approach
21 that only sits. Then somebody will say AThat's all very
22 interesting and we certainly took care of all those risk
23 related elements and prioritizations and cumulative
24 effects.@ And nothing happens.

25 Whereas I was excited about risk

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1 prioritization initiative being something that that=s
2 a meaty thing that looks like it=s been developed. And
3 if we could only get everyone to focus on it and do it,
4 it would be an extremely useful approach that could
5 incentivize a number of different types of applications
6 that will bear both low-hanging fruit and long-term
7 benefit.

8 MR. CARNEAL: Yes.

9 MEMBER SCHULTZ: Combining all of this
10 together makes me nervous. And I look forward to your
11 report.

12 MR. CARNEAL: Alright. And in the March
13 2015 paper as far as RPI is concerned, we=re considering
14 both near-term and long-term actions of how we can best
15 implement this.

16 MEMBER SCHULTZ: I=m encouraged by and
17 really excited about the involvement that the staff has
18 taken with regard to participating the process in both
19 observing and providing good deliberation and input
20 into the process as well. A lot of good thinking has
21 been done by the staff to assure that it=s headed in the
22 right direction from the staff=s perspective.

23 MR. CARNEAL: Thank you.

24 CHAIRMAN STETKAR: Anything else for the
25 staff?

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1 (No verbal response)

2 Antonios, Jason, Joe, thanks a lot for
3 coming in and at least giving us some insight as far as
4 a snapshot of where you are and what you've done anyway.
5 We're really looking forward to seeing that SECY paper.

6 Now I've been told there's nobody on the
7 bridge line. So if you're out there and can hear me,
8 I've been told you're not out there.

9 Is there anybody left in the room here who
10 would like to make any comments? Or any questions?

11 (No verbal response)

12 If not, as we usually do in the subcommittee
13 meeting, I'll go around the table and ask for any final
14 comments of the members. And I'll start with you. Dr.
15 Bley.

16 MEMBER BLEY: Yeah, I've got a few. And I
17 too want to thank everybody. Really good discussions
18 and presentations today. We haven't seen this really
19 before at all.

20 I do like that the process they brought is
21 looking at multi-attributes and not just safety and
22 prioritization. I like Antonios' map of how the
23 process impacts nearly everybody around NRC. I thought
24 that was pretty good.

25 I haven't thought enough about this

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1 business of lower safety things being beaten by other
2 things. I think that=s worthy of a lot of thinking and
3 examination.

4 The thing I=m a little uncomfortable about
5 here and I=m uncomfortable about it in other places
6 where we use expert panels is the lack of facilitator
7 training back to what Steve said. And there=s a lot of
8 ways expert panels go wrong and have gotten in trouble.
9 And one of the big ones is you really need the
10 facilitator to understand, have a knowledge of and
11 control of biases that can affect it and understand
12 things like anchoring and adjustment, availability
13 which is really biases related to the ease with which
14 things come back to mind, recency, familiarity,
15 salience, representativeness which let=s us bring in
16 stereotypes and ignore the probabilistic side of
17 things.

18 The facilitator who really understands
19 what they=re doing can feedback the implications of the
20 judgments from the team in a way that can let the experts
21 have a confirmation that they really understand the
22 implications of what they=ve said. So that process can
23 clean up a lot of problems.

24 And in a way, a good facilitator can turn
25 all the others, the experts, into those professional

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1 critics or naysayers we were talking about during the
2 thing by forcing them to think a little bit outside.
3 Could there be anything that could push this in one
4 direction or another? To have something formal in that
5 regard I think could avoid problems. I don't know if
6 we've had any problems, but I've sure seen it in other
7 kind of expert elicitation.

8 The idea of thinking about the dependence
9 among the alternatives not analyzing them in detail but
10 at least recognizing they could be there I think is
11 important.

12 I have another impression and it's a worry
13 that if the PRA is not complete or isn't completely
14 examined you can miss some of the risk significance of
15 an issue. And just an example is -- I haven't thought
16 a whole lot about but just hearing it today -- the open
17 phase issue. From what I've heard, I'm not sure they
18 really looked at the actual risk that an open phase
19 condition can cause. It's different than just losing
20 an offsite power connection especially should equipment
21 that's not running get start signals while you're under
22 this condition.

23 Battery evaluation that we heard about
24 focused on little differences in two possibilities, but
25 didn't think about those broader things like John

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1 brought up. That=s more of a worry. But I really like
2 a lot of what we saw and heard today. And I think the
3 fact that staff=s been involved in this all the way.
4 Sorry for the long run, but I had a bunch of things.

5 CHAIRMAN STETKAR: Dana.

6 MEMBER POWERS: I don=t think any
7 substantive comments to add what Dennis said.

8 CHAIRMAN STETKAR: Dick.

9 MEMBER SKILLMAN: I do. Just two.
10 Assessing the risk of the resource impact for critical
11 skill sets. Assessing the risk of the resource impact
12 for critical skill sets, I would have thought the
13 important characterization would have at the minimum
14 attempted to put a very thick magnifying glass on if this
15 change is made do I reduce the burden. If I don=t make
16 the change, do I persist with or increase the burden on
17 a critical skill set group?

18 Critical skill set group could be EMTs. It
19 could be firefighters. It could be the shift manager
20 or the lead SRO that has the duty for the plant for that
21 shift. Some of the projects that we saw from the
22 various participants were those kinds of things. This
23 would actually reduce burden. This would actually take
24 an issue off the table.

25 So I=m thinking that that resource impact

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1 might be something that should be included in the
2 importance characterization. I understand Don Dube's
3 point. They considered that and chose to use that as
4 a modifier. It seems to me if it can be used as a
5 modifier it ought to be a standalone. That's number
6 one.

7 The second one based somewhat in part from
8 Sonja Myers' comment relative to their communication
9 system inside containment and the ability to get a false
10 positive for fire, that will drive the site into their
11 EALs and it will drive them into an unusual event. At
12 least my experience would tell me that anything that can
13 push you into an EAL deserves a greater amount of formal
14 recognition in terms of characterization. I've been
15 through I think four fires on site and one site area
16 emergency. And I understand the distraction that that
17 wheel of events initiates. And it is a true distraction
18 to the control room. It's a safety event at least in
19 my judgment.

20 Those are the two, the potential impact on
21 critical skill sets and in the EP realm being forced into
22 an EAL when you don't need to be forced into that EAL.
23 Thank you.

24 CHAIRMAN STETKAR: Steve.

25 MEMBER SCHULTZ: I said a lot this

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1 afternoon. But I did want to close with a couple of
2 integrating comments. First, I really appreciate the
3 preparation and the presentations that have been
4 provided to us. It really gave us a very good
5 impression of what has been done and what could be the
6 benefits from the RPI process and where we will go going
7 forward.

8 And that=s where I wanted to focus, going
9 forward. With regard to the risk prioritization
10 initiative, the pilot approach I think has been really
11 impressive and I think it=s been well done to
12 demonstrate the value of the process, both the
13 development and the value of the process. And we just
14 got the latest, but it shows how the process has been
15 improved as a result of the pilots. That=s always a
16 good thing.

17 The piece that I=m still trying to figure
18 is how do we move the process then into real
19 implementation. John Butler had on one of his slides
20 the picture not to scale of how the process can be used
21 to provide an improvement and reduction in risk as a
22 function of time for any plant. If it=s used
23 appropriately it=s going to result in that. And that=s
24 obviously a good thing.

25 But how do we assure that this process in

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1 fact will be used in what I think ought to be it to both
2 become a continuous improvement process for the
3 facility? And as you said in your presentation,
4 Antonios, that you would want to see it enhancing the
5 utilization of risk practices and safety improvement at
6 the plants utilizing risk insights better. How do we
7 make that happen in a going forward process and ensure
8 that it becomes a program that not only enhances what
9 is already existing at the sites, but couples and
10 coordinates the plant health committee with other
11 aspects of safety improvement at the plants?

12 And I've said I see the advantages
13 associated with combining this effort in evaluation
14 with cumulative effects of regulation and regulatory
15 analysis. But those features have different aspects
16 and inputs.

17 So I think we just have to be careful to keep
18 the differences separate and the similarities the same
19 whatever. Take advantage of it, but don't lose the
20 opportunity to improve all of those elements because
21 they are different. But thank you for the
22 contributions provided today. They have been very
23 good.

24 CHAIRMAN STETKAR: Thank you. And I don't
25 have much to add. I think I'll -- One thing I'd

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1 mentioned, it=s come up here. It=s come up a couple of
2 times. I do very much like this notion of an integrated
3 perspective of all of the issues. I think that=s very,
4 very useful.

5 The concern about does a reliability issue
6 trump safety, some of those questions I think are more
7 complex than just its reliability or its safety because
8 in many cases it=s difficult to simply divorce
9 reliability from safety. I think there might be some
10 artificialities creeping into the way the things are
11 evaluated.

12 I know -- and I hate to put Palisades on the
13 block just because I happened to be there -- that when
14 I was sitting there watching the aggregation process the
15 group in some sense was struggling at times saying,
16 AWell, according to the guidance this is in category two
17 because it=s got one of these. I really would have
18 liked it to be an and/or some sort of other convoluted
19 logic because this didn=t seem to work okay for me. But
20 following the guidance it has to be here.@

21 I don=t know how often the teams in the
22 pilots struggled with that. So obviously this thought
23 process when you=re balancing especially if you become
24 more objective on some of the other metrics kind of
25 shakes out after some more trials. But that was

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1 something that I saw people struggling with.

2 And with that because it=s getting late, I
3 would again like to really thank all of the industry
4 participants. I really appreciate all the time and
5 effort you put into not only running through the
6 process. But also I know it takes a lot of time and
7 effort to prepare materials and congregate here. And
8 I really do appreciate that. Thank you very much. It
9 was really, really useful. I wish we could have started
10 it earlier, but we couldn=t. That=s just a dig. Not
11 necessarily to the people on this side of the room. And
12 with that, unless there=s any other comments, we are
13 adjourned.

14 (Whereupon, at 5:54 p.m., the
15 above-entitled matter was concluded.)

16

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Overview of Prioritization and Scheduling Initiative

John Butler, NEI

Jim Chapman, Curtiss-Wright

Don Dube, ERIN

Purpose

- Provide overview of process
- Discuss detailed results from three of six pilot applications
 - Palisades
 - Hatch
 - Robinson

COMGEA-12-0001/COMWDM-12-00002

- A plant-specific approach to implementation of regulatory actions would serve to focus licensee and NRC attention more effectively on important safety issues in those cases in which they present higher relative risks and to defer other issues of lower safety significance. **If such a prioritization were effected at each plant, it would improve the safety of the fleet** and would also enable licensees to manage their resources and work in a more effective and efficient manner.
- Industry's proposal is to **enhance safety by promoting the use of the risk significance of current and emerging reactor issues in an integrated manner and on a plant-specific basis** when prioritizing regulatory actions, in order to recognize that each operating nuclear power plant faces unique contributors to risk.

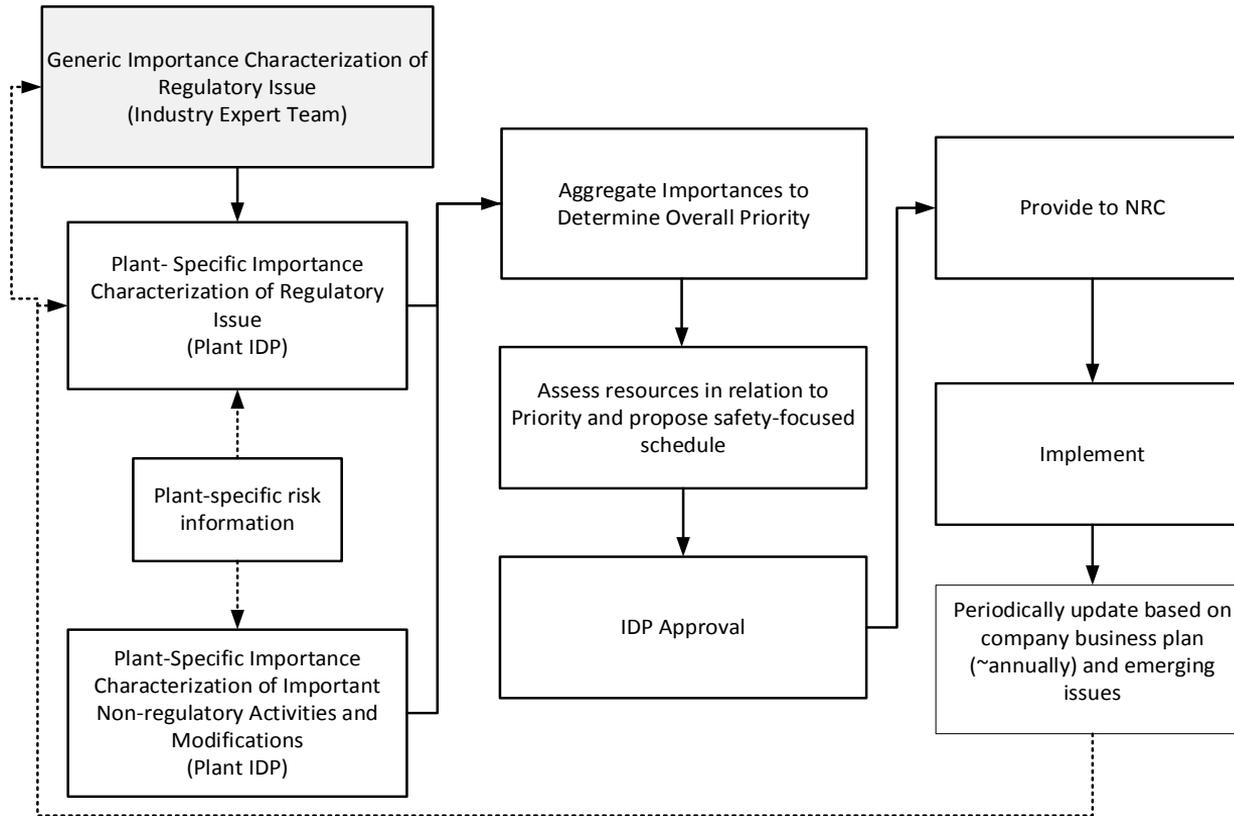
Timeline for Process Development

- Generic tabletops at NRC (Nov – Dec 2013)
- Plant-specific tabletops (Feb – Mar 2014)
- Generic Assessment Expert Team tabletops (May 2014)
- Plant-specific pilots at six sites (Summer 2014)
- Follow-up tabletops on EP, RP and Security (September 2014)
- Guidance revised to incorporate lessons learned; Issued as NEI 14-10 (October 2014)

Overview of Prioritization Approach

- Nuclear safety impact is the **primary focus**
- **SDP** thresholds are used (reverse perspective)
- Regulatory issues and plant-initiated activities are characterized into **broad categories** spanning a decade of risk
- Screening questions are risk-informed adaptations of NEI 96-07 (10 CFR 50.59) guidance
- Definition of “**more than minimal**” is consistent with RG 1.174 and 50.59 guidance
- Cost/benefit and personnel burden reduction are possible tie-breakers or adjustments at the end of the process.

Plant Process for Schedule Prioritization



Key Elements and Features of Prioritization

- Generic characterization of regulatory issues by expert team
 - Problem statement and potential solutions
 - Assignment of generic priority if appropriate
 - Considerations for plant-specific prioritization
- Plant-specific evaluation
- Formal plant review by Integrated Decision-making Panel like 50.65, 50.69, RITS 5b

What gets prioritized?

- Actions addressing regulatory issues and findings
- Plant-initiated actions addressing equipment with safety implications
- Other issues and activities, as identified by resource peaks in the business plan

What does NOT get prioritized?

- General O&M, facilities maintenance, etc.
- Immediate action necessary for continued safe operation
- Immediate repairs necessary for continued power production

Importance Characterization

- 5 categories
 - Nuclear Safety
 - Security (includes cyber)
 - Emergency Preparedness
 - Radiological Protection
 - Reliability of SSCs

Safety Importance Characterization

- Step 1: No Impact or Adverse Impact?
- Step 2: Minimal Impact?
- Step 3A: Relative Impact versus Current Relative Risk
 - Very Low
 - Low
 - Medium
 - High
- Step 3B: Quantitative

Table 3-1 Matrix by Current Risk and Potential Impact

UB is upper bound of the risk range; Mid is “mid-range” (0.3 times UB); LB is factor of 10 lower than UB¹

Current Risk associated with Issue	Potential Impact of Action Resolving Issue (Reduction in Risk)				
	None	Very Small/Minimal	Small	Medium	High
	0%	0 to 25%	25 to 50%	50% to 90%	>90%
Importance					
Green (VL) LB	Very Low	Very Low	Very Low	Very Low	Very Low
Green (VL) Mid	Very Low	Very Low	Very Low	Very Low	Very Low
Green (VL) UB	Very Low	Very Low	Very Low	Very Low	Very Low
White (L) LB	Very Low	Very Low	Very Low	Very Low	Very Low
White (L) Mid	Very Low	Very Low	Low	Low	Low
White (L) UB	Very Low	Low	Low	Low	Low
Yellow (M) LB	Very Low	Low	Low	Low	Low
Yellow (M) Mid	Very Low	Low	Medium	Medium	Medium
Yellow (M) UB	Very Low	Medium	Medium	Medium	Medium
Red (H) LB		Medium	Medium	Medium	Medium
Red (H) Mid		High	High	High	High
Red (H) UB		High	High	High	High

The thresholds in the left column are consistent with the SDP and are (in units of per yr), for CDF:

Green/White = 10^{-6} ,
 White/Yellow = 10^{-5} ,
 Yellow/Red = 10^{-4} ;

and for LERF:
 Green/White = 10^{-7} ,
 White/Yellow = 10^{-6} ,
 Yellow/Red = 10^{-5} .

Security, EP & RP Importance Characterization

- Captures nexus with nuclear and public safety
- 2-step process following Safety importance characterization:
 - Step 1: What is the relative significance?
 - flowchart
 - Step 2: How effective is the proposed measure to address it?
 - matrix

Reliability Importance Characterization

- Concerned with reliability of SSCs (safety-related or power generation)
 - aging management, availability, forced outage, power reduction, or potential for a reactor scram
- **Forward looking with strong nexus with Safety**
- Performance indicators (PIs) under ROP include measures of unplanned scrams and unplanned power changes; MSPI
- Exceeding a threshold for a PI could result in the plant being placed in a column of the Action Matrix with heightened regulatory scrutiny.

Criteria to assign priority level

- Priority 1
 - Issue defined by NRC as adequate protection, OR
 - High for Safety, OR
 - Two or more Highs for any of the four other categories (Security, EP, RP, Reliability)
- Priority 2
 - Medium for Safety, OR
 - One High for any of the four other categories, OR
 - Two or more Mediums for any of the four other categories

Criteria to assign priority level (cont.)

- Priority 3
 - Low for Safety, OR
 - One Medium for any of the four other categories, OR
 - Two or more Lows for any of the four other categories
- Priority 4
 - Very Low for Safety, OR
 - One Low for any of the four other categories
- Priority 5
 - Does not meet any of the criteria for Priorities 1 through 4

Adjusting Licensing/Regulatory Schedules

- Assessment results used to support existing processes for re-scheduling
- Process an exemption request per 10 CFR 50.12 or 52.7
- Use commitment change process as described in NEI 99-04, Rev. 0, *Guidelines for Managing NRC Commitment Changes*

Backup Slides



Safety Importance – Step 1

Does the proposed activity or issue:

1. YES NO **Result in an impact on the frequency of occurrence of a risk significant accident initiator?**
2. YES NO **Result in an impact on the availability, reliability, or capability of SSCs or personnel relied upon to mitigate a risk significant transient, accident, or natural hazard?**
3. YES NO **Result in an impact on the consequences of a risk significant accident sequence?**
4. YES NO **Result in an impact on the capability of a fission product barrier?**
5. YES NO **Result in an impact on defense-in-depth capability or impact in safety margin?**

If ALL the responses are NO, issue or activity screens to NO IMPACT and Nuclear Safety Importance is None.

If ANY response is YES, continue on to Step 2.

Safety Importance – Step 2

Does the proposed activity or issue:

1. YES NO **Result in more than a minimal decrease in frequency of occurrence of a risk significant accident initiator?**
2. YES NO **Result in more than a minimal improvement in the availability, reliability, or capability of SSCs or personnel relied upon to mitigate a risk significant transient, accident, or natural hazard?**
3. YES NO **Result in more than a minimal decrease in the consequences of a risk significant accident sequence?**
4. YES NO **Result in more than a minimal improvement in the capability of a fission product barrier?**
5. YES NO **Result in more than a minimal improvement in defense-in-depth capability or improvement in safety margin?**

If ALL the responses are NO, issue or activity screens to MINIMAL IMPACT and Nuclear Safety Importance is Very Low.

If ANY response is YES, continue on to Step 3.

Table 3-1 Matrix by Current Risk and Potential Impact

UB is upper bound of the risk range; Mid is “mid-range” (0.3 times UB); LB is factor of 10 lower than UB¹

Current Risk associated with Issue	Potential Impact of Action Resolving Issue (Reduction in Risk)				
	None	Very Small/Minimal	Small	Medium	High
	0%	0 to 25%	25 to 50%	50% to 90%	>90%
Importance					
Green (VL) LB	Very Low	Very Low	Very Low	Very Low	Very Low
Green (VL) Mid	Very Low	Very Low	Very Low	Very Low	Very Low
Green (VL) UB	Very Low	Very Low	Very Low	Very Low	Very Low
White (L) LB	Very Low	Very Low	Very Low	Very Low	Very Low
White (L) Mid	Very Low	Very Low	Low	Low	Low
White (L) UB	Very Low	Low	Low	Low	Low
Yellow (M) LB	Very Low	Low	Low	Low	Low
Yellow (M) Mid	Very Low	Low	Medium	Medium	Medium
Yellow (M) UB	Very Low	Medium	Medium	Medium	Medium
Red (H) LB		Medium	Medium	Medium	Medium
Red (H) Mid		High	High	High	High
Red (H) UB		High	High	High	High

The thresholds in the left column are consistent with the SDP and are (in units of per yr), for CDF:

Green/White = 10^{-6} ,
 White/Yellow = 10^{-5} ,
 Yellow/Red = 10^{-4} ;

and for LERF:
 Green/White = 10^{-7} ,
 White/Yellow = 10^{-6} ,
 Yellow/Red = 10^{-5} .

Safety Importance – Step 3A

Safety Importance – Step 3B

Safety Importance determination using quantitative analyses

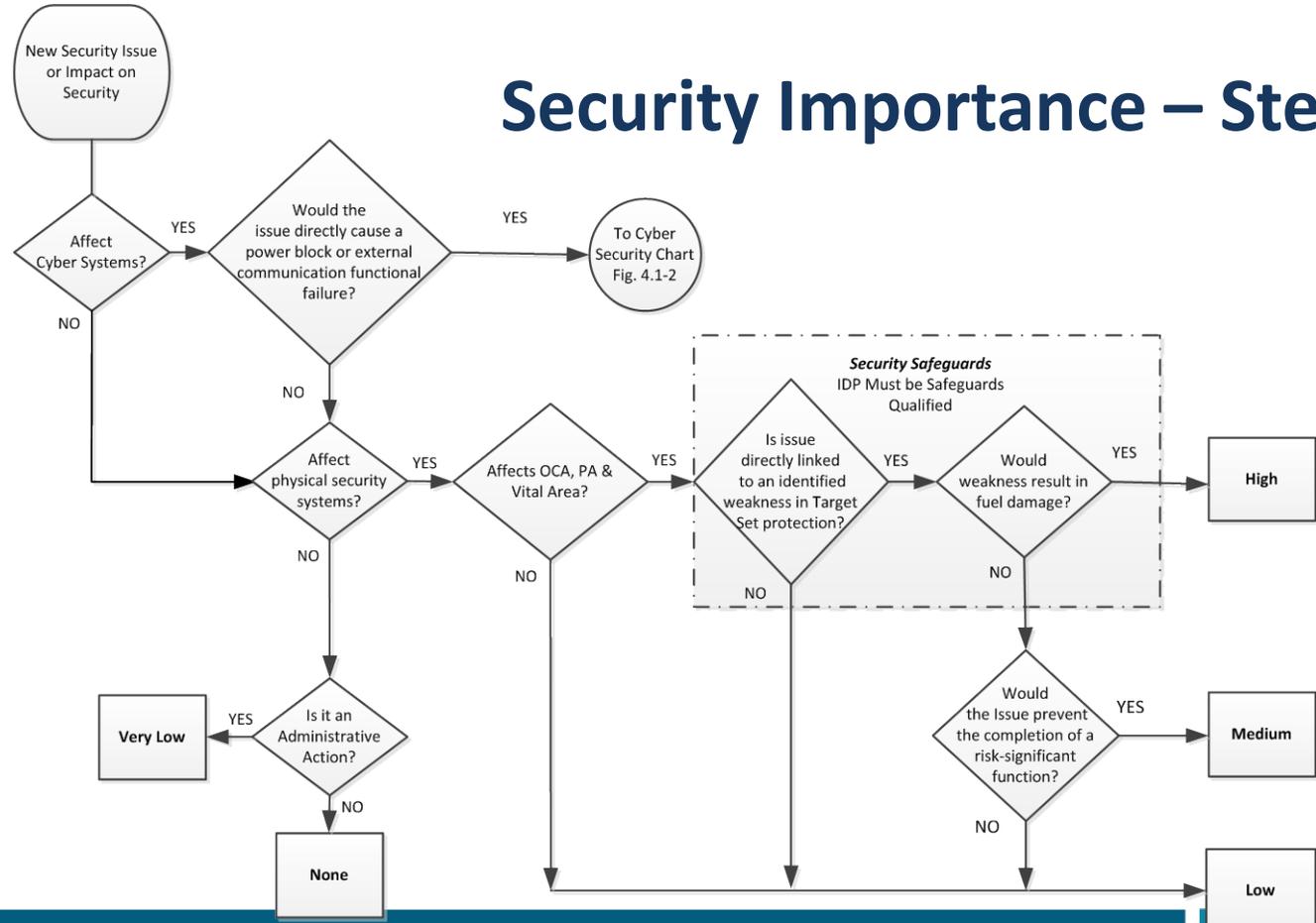
HIGH: $\Delta\text{CDF} > 1\text{E-}4$ /yr, or
 $\Delta\text{LERF} > 1\text{E-}5$ /yr

MEDIUM: $1\text{E-}4$ /yr $\geq \Delta\text{CDF} > 1\text{E-}5$ /yr, or
 $1\text{E-}5$ /yr $\geq \Delta\text{LERF} > 1\text{E-}6$ /yr

LOW: $1\text{E-}5$ /yr $\geq \Delta\text{CDF} > 1\text{E-}6$ /yr, or
 $1\text{E-}6$ /yr $\geq \Delta\text{LERF} > 1\text{E-}7$ /yr

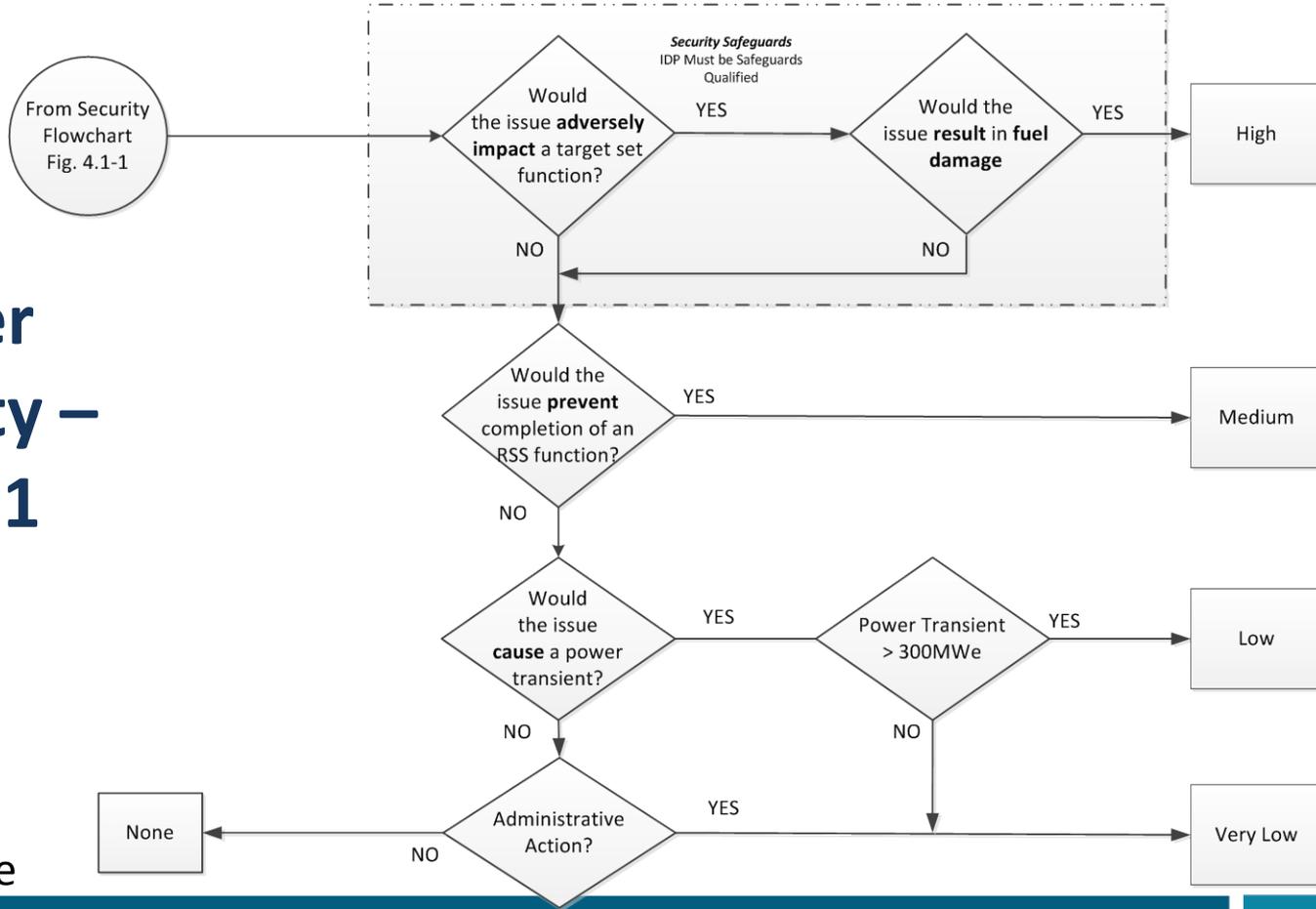
VERY LOW: $\Delta\text{CDF} \leq 1\text{E-}6$ /yr, or
 $\Delta\text{LERF} \leq 1\text{E-}07$ /yr

Security Importance – Step 1



Pilot Guidance

Cyber Security – Step 1

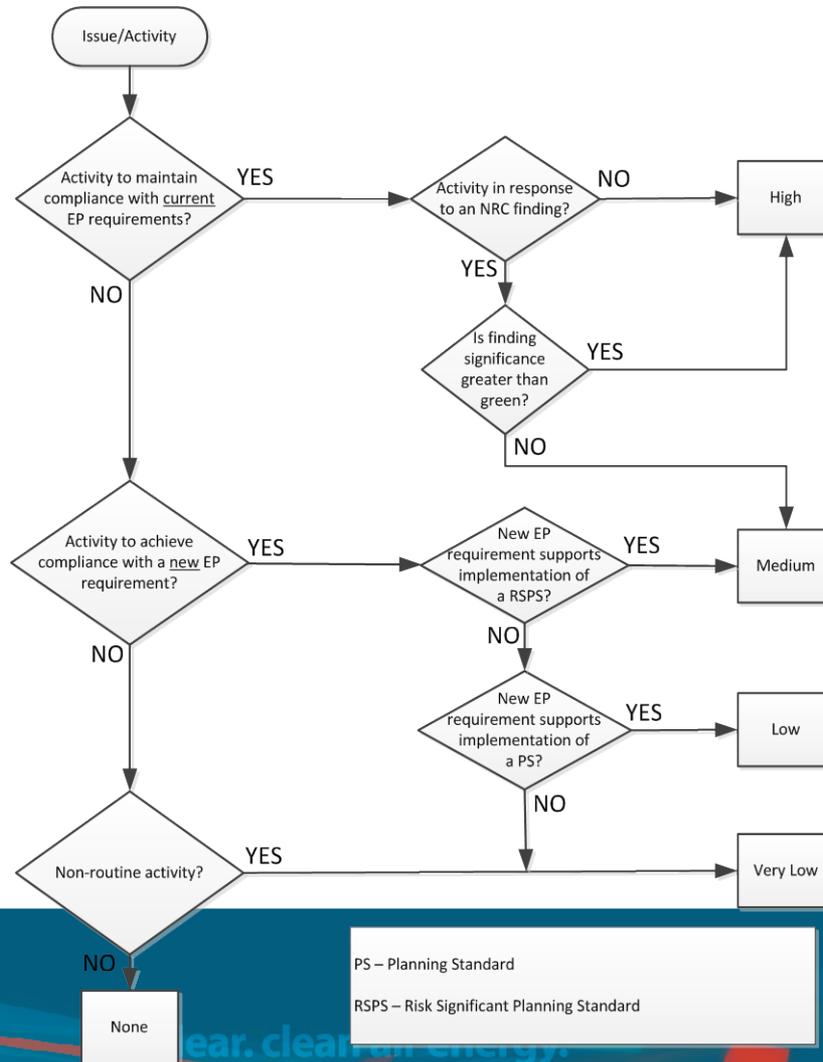


Pilot Guidance



NOTE: As used in this document the term issue may be a cyber-security intrusion or a potential cyber-security intrusion

EP Importance - Step 1

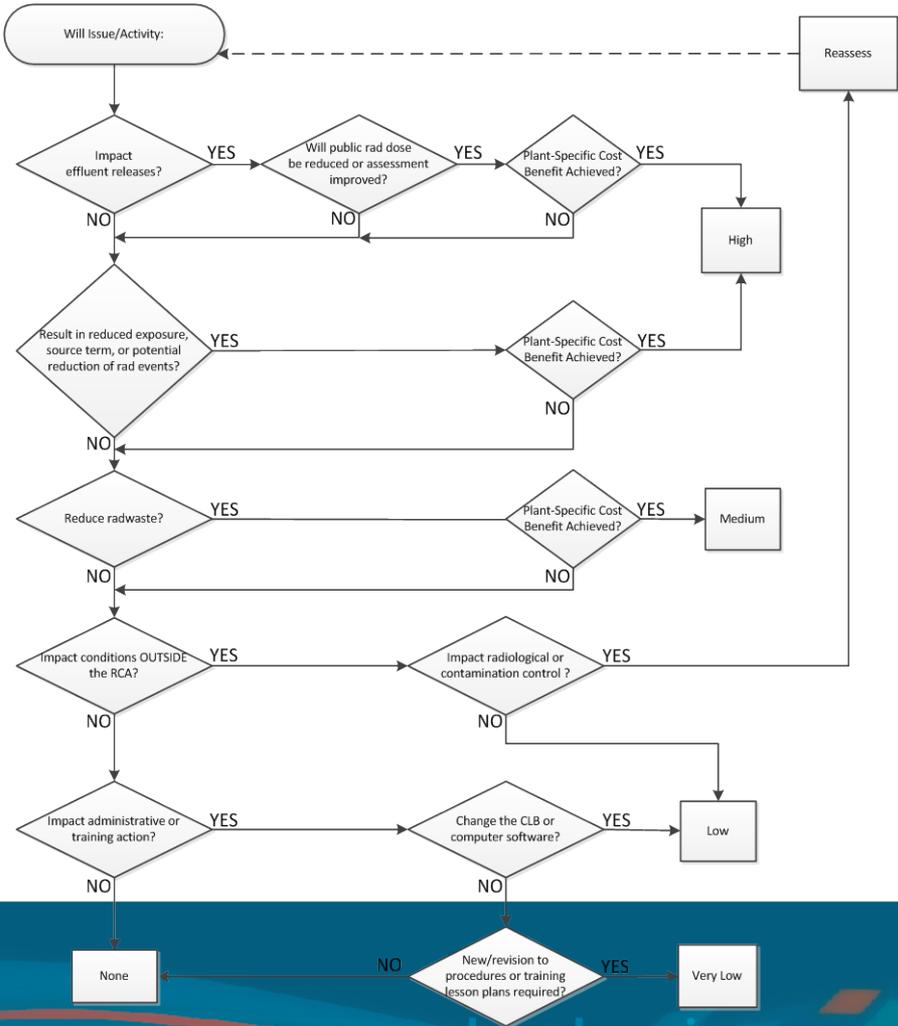


Pilot Guidance



PS – Planning Standard
RSPS – Risk Significant Planning Standard

RP Importance – Step 1



Pilot Guidance



Security, EP, RP Importance – Step 2

Table 4-1 Matrix by Current Significance and Potential Impact			
Current significance associated with the issue (from Step 1 Flowcharts)	Potential Impact of Action Resolving Issue (Effectiveness)		
	Not Effective	Somewhat Effective	Mostly Effective
	0 to 25%	25 to 80%	>80%
	Importance		
Very Low	Very Low	Very Low	Very Low
Low	Very Low	Very Low	Low
Medium	Very Low	Low	Medium
High	Very Low	Medium	High

Reliability Importance – Step 1

For the proposed activity or issue:

1. YES NO **Is there a significant risk of SSC failure?**
2. YES NO **Is there a significant replacement lead time?**
3. YES NO **Is there an obsolescence issue?**
4. YES NO **Is there an impact on plant reliability?**
5. YES NO **Is there an impact on SSC or personnel availability due to frequency of preventive maintenance?**

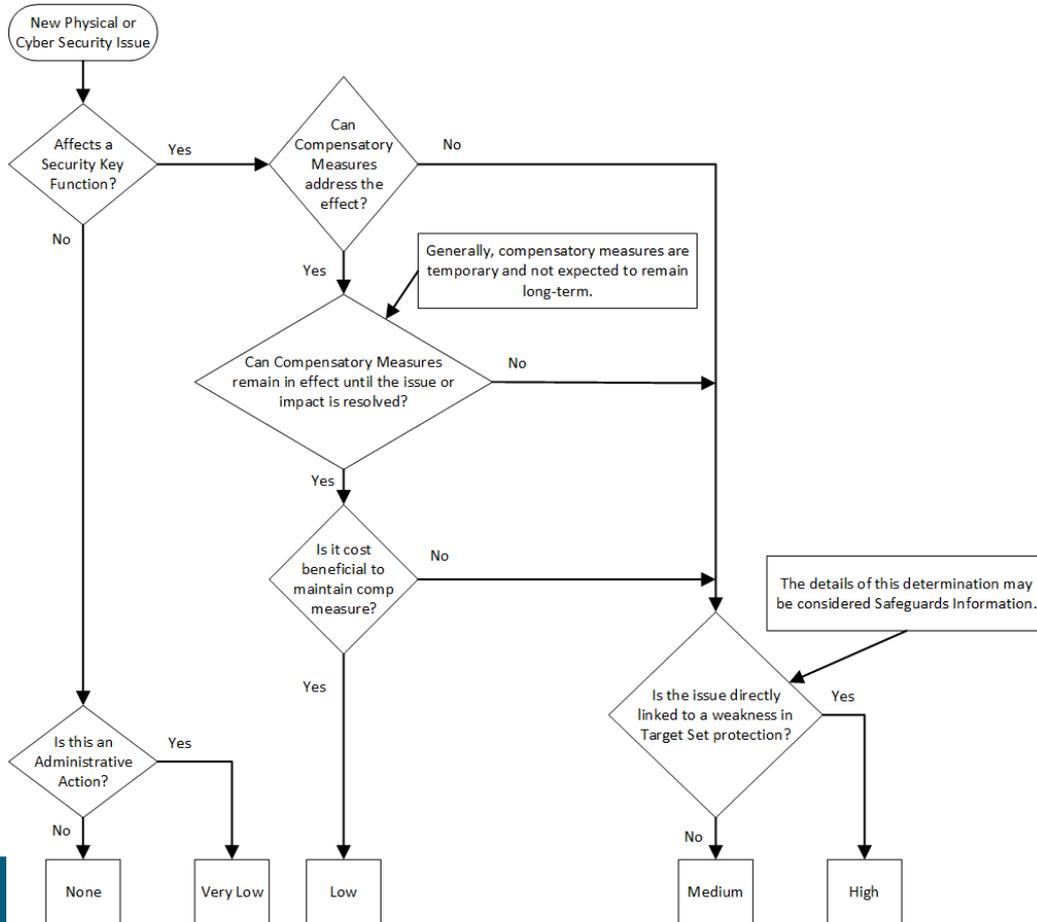
If ALL the responses are NO, issue or activity screens to NO IMPACT and Reliability Importance is None.

If ANY response is YES, continue on to Step 2.

Reliability Importance – Step 2

Table 4-2 Matrix by Urgency and Potential Impact			
Time frame (in operating cycles) for action associated with the issue	Potential Impact of Action Resolving Issue (Duration of Plant Outage Avoided)		
	Day(s)	Week(s)	Month(s)
	Importance		
Long (≥ 2)	Very Low	Low	Medium
Short (< 2)	Low	Medium	High

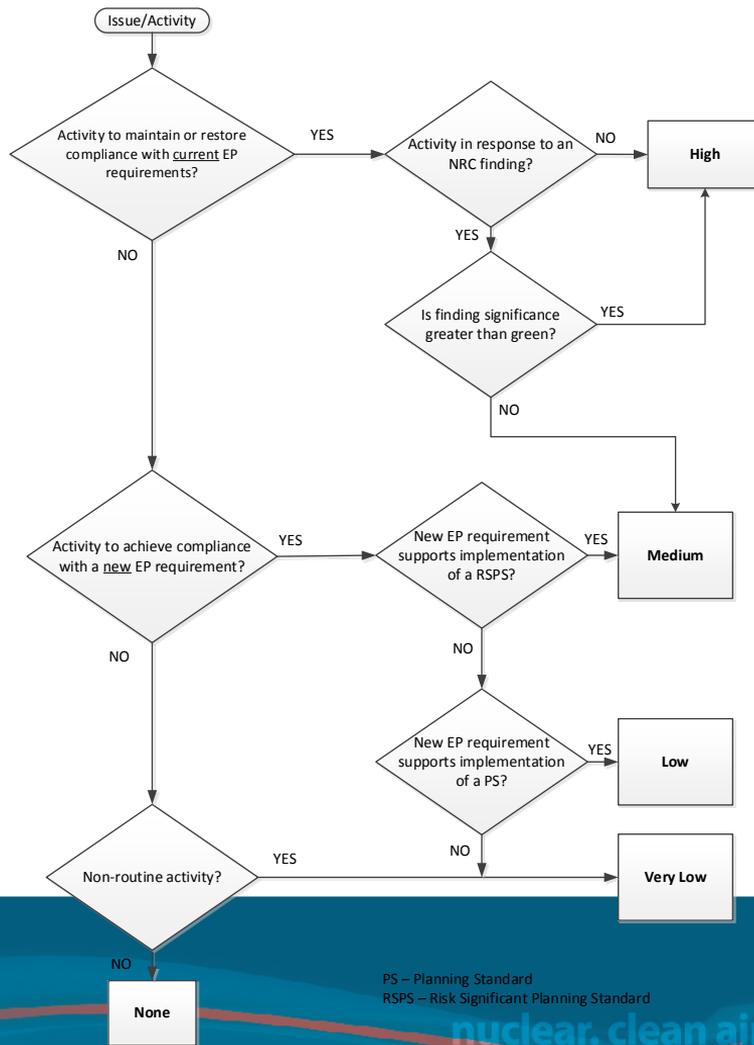
Security – Step 1 (Revised)



Security Key Functions are defined as the ability to Detect, Assess, Delay, and Respond in accordance with the Physical Security Program required by 10 CFR 73..



EP Importance – Step 1 (Revised)



RP Importance – Step 1 (Revised)



Palisades Power Plant

Advisory Committee on Reactor Safeguards

November 3, 2014



Cumulative Impact Task Force

CITF Pilot

May through September 2014

Jim Miksa, Regulatory Assurance Engineer

Introduction

- **Entergy Interest**
 - Cumulative Impact Initiatives
 - 10 Sites with 12 Reactors
 - PWR and BWR designs
 - GE, CE, West, B&W NSSS designs
- **Palisades Selection**
 - Aging Management
 - Risk Informed Initiatives
 - Emergent Industry Issues

Pilot Application

- **SME Selection**
- **IDP Member Selection**
- **Training**
- **Pilot Schedule**
 - May – Site Lead Trained, Projects Selected
 - June – SME and IDP Members Selected, Process Training
 - July & August – Importance Evaluations
 - September – IDP Importance Review, Aggregation Meetings

Project 1 – Incipient Detection

Project Description

- Regulatory project in support of NFPA-805 license amendment.
- Incipient Detection, Very Early Warning Fire Detection System (VEWFDS), is an air aspirating type incipient fire detection system.
- Continually samples air to detect pre-combustion particles at the earliest stage of a fire (incipient stage) prior to visible/smoldering smoke.
- Allows for fire conditions to be identified in time for resolution prior to any noticeable fire damage.
- Installation planned for the Main Control Room, Cable Spreading Room, 1C & 1D Switchgear Rooms, Electrical Equipment Room, and both Station Battery Rooms.
- Replaces the existing fire alarm control panels that integrates the replacement detection, remaining detection, and control room annunciators.

Project 1 – Incipient Detection

Importance Evaluation

- Safety (Medium)
 - Step 1 – Any Impact
 - Q1 - Reduces Frequency of risk significant accident initiator (Fire)
 - Q5 – Improves defense in depth (Detect pre-combustion particles prior to visible smoke allowing resolution prior to noticeable fire damage.)

Project 1 – Incipient Detection

Importance Evaluation

- Safety (Medium)
 - Step 2 – More Than Minimal Impact
 - Q1 – Modification Allows crediting of detection in NFPA-805 fire scenarios which discernibly impacts core damage frequency in the Fire PRA by allowing assumed equipment lost to be limited to the fire scenario versus the entire fire area.
 - Q5 – Not more than minimal since allows for improved detection versus an added defense in depth function.

Project 1 – Incipient Detection

Importance Evaluation

- Safety (Medium)
 - Step 3a – Impact on Issue Risk (Qualitative)
 - Issue Risk Level – Red (H) LB for CDF based on risk value if allowance for sub-area detection can not be credited in fire PRA
 - Project Risk Reduction – High 90% based on system’s ability detect fire at the incipient stage

Project 1 – Incipient Detection

Importance Evaluation - Step 3a – Impact on Issue Risk (Qualitative)

Table 3-1 Matrix by Current Risk and Potential Impact

UB is upper bound of the risk range; Mid is "mid-range" (0.3 times UB); LB is factor of 10 lower than UB¹

Current Risk associated with Issue	Potential Impact of Action Resolving Issue (Reduction in Risk)				
	None	Very Small/Minimal	Small	Medium	High
	0%	0 to 25%	25 to 50%	50% to 90%	>90%
Importance					
Green (VL) LB	<Very Low	<Very Low	<Very Low	<Very Low	<Very Low
Green (VL) Mid	Very Low	Very Low	Very Low	Very Low	Very Low
Green (VL) UB	Very Low	Very Low	Very Low	Very Low	Very Low
White (L) LB	Very Low	Very Low	Very Low	Very Low	Very Low
White (L) Mid	Very Low	Very Low	Low	Low	Low
White (L) UB	Very Low	Low	Low	Low	Low
Yellow (M) LB	Very Low	Low	Low	Low	Low
Yellow (M) Mid	Very Low	Low	Medium	Medium	Medium
Yellow (M) UB	Very Low	Medium	Medium	Medium	Medium
Red (H) LB		Medium	Medium	Medium	Medium
Red (H) Mid		High	High	High	High
Red (H) UB		High	High	High	High

¹ The thresholds in the left column are consistent with the SDP and are (in units of per yr), for CDF: Green/White = 10⁻⁶, White/Yellow = 10⁻⁵, Yellow/Red = 10⁻⁴; and for LERF: Green/White = 10⁻⁷, White/Yellow = 10⁻⁶, Yellow/Red = 10⁻⁵.

- The Nuclear Safety Importance is: <Very Low Very Low Low Medium High Reassess to identify an effective activity/action

Project 1 – Incipient Detection

Importance Evaluation

- Other Categories (None)
 - Security – System does not impact physical security barriers or cyber systems
 - Emergency Planning – System performs a preventive function vs mitigative function
 - Radiation Protection – System Located outside RCA
 - Reliability – New system

Project 1 – Incipient Detection

Prioritization and Scheduling

- NEI Process Priority 2
- Palisades Project Priority 2
- NEI Process Schedule Jun 2016
- Palisades Project Schedule Oct 2016
- Action to evaluate ability to move up in schedule

Project 2 – Open Phase

Project Description

- Regulatory issue associated with the January 30, 2012, Byron Station, Unit 2 Loss of Offsite Power Event.
- Installs an open phase monitoring and isolation system on Start Up Transformer 1-2 & Safeguards Transformer 1-1.
- Detects an open phase condition on the transformers' high side bushings.
- The system (OPDI) will accomplish the required automatic detection, isolation and trip annunciation functions necessary for the various open phase conditions (single OP, single OP with grounded fault, double OP, double OP with grounded fault with loaded, minimally loaded and no load conditions).
- Palisades is not vulnerable to a failure mechanism identical to Byron because all transformers of interest have insulators either in compression or are of dual insulator design.
- A generic industry Probability Risk Assessment (Open Phase Condition Industry Update) for OPC determined that there is a “Very Low” probability of this type of event occurring.

Project 2 – Open Phase

Importance Evaluation

- Safety (Very Low)
 - Step 1 – Any Impact
 - Q2 - Impacts availability of SSCs and availability / reliability of personnel should an OPC exist.

Project 2 – Open Phase

Importance Evaluation

- Safety (Very Low)
 - Step 2 – More Than Minimal Impact
 - Q1 – OPC Modification provides automatic detection and isolation which discernibly improves SSC availability and personnel availability and reliability impacts as compared to the current detection and isolation methods

Project 2 – Open Phase

Importance Evaluation

- Safety (Very Low)
 - Step 3b – Impact on Issue Risk (Quantitative)
 - Issue Risk Level – Green (VL) Mid for CDF based on associated issue risk value of 2.5 E-7 from PRA model
 - Project Risk Reduction – High 90% based on system’s ability detect and isolate a OPC condition

Project 2 – Open Phase

Importance Evaluation - Step 3b – Impact on Issue Risk (Quantitative)

Table 3-1 Matrix by Current Risk and Potential Impact

UB is upper bound of the risk range, Mid is "Mid range" (0.3 times UB), LB is factor of 10 lower than UB(1)

Current Risk associated with Issue	Potential Impact of Action Resolving Issue (Reduction in Risk)				
	None	Very Small/Minimal	Small	Medium	High
	0%	0 to 25%	25 to 50%	50% to 90%	>90%
Importance					
Green (VL) LB	< Very Low	< Very Low	< Very Low	< Very Low	< Very Low
Green (VL) Mid	Very Low	Very Low	Very Low	Very Low	Very Low
Green (VL) UB	Very Low	Very Low	Very Low	Very Low	Very Low
White (L) LB	Very Low	Very Low	Very Low	Very Low	Very Low
White (L) Mid	Very Low	Very Low	Low	Low	Low
White (L) UB	Very Low	Low	Low	Low	Low
Yellow (M) LB	Very Low	Low	Low	Low	Low
Yellow (M) Mid	Very Low	Low	Medium	Medium	Medium
Yellow (M) UB	Very Low	Medium	Medium	Medium	Medium
Red (H) LB		Medium	Medium	Medium	Medium
Red (H) Mid		High	High	High	High
Red (H) UB		High	High	High	High

1 -The thresholds in the left column are consistent with the SDP and are (in units of per yr), for CDF: Green/White = 10⁻⁶, White/Yellow = 10⁻⁵, Yellow/Red = 10⁻⁴; and for LERF: Green/White = 10⁻⁷, White/Yellow = 10⁻⁶, Yellow/Red = 10⁻⁵.

- The Nuclear Safety Importance is: <Very Low Very Low Low Medium High Reassess to identify an effective activity/action.

Be the best at what matters most:

Operational Excellence.

Project 2 – Open Phase

Importance Evaluation

– Other Categories (None)

- Security – System does not impact physical security barriers or cyber systems
- Emergency Planning – System performs a preventive function vs mitigative function
- Radiation Protection – Only Areas outside RCA impacted
- Reliability – New system

Project 2 – Open Phase

Prioritization and Scheduling

- NEI Process Priority 4
- Palisades Project Priority 18
- NEI Process Schedule Nov 2018
- Palisades Project Schedule May 2017
- Action to evaluate submitting an exemption to the OPC isolation function and maintain the monitoring function based on Palisades design.

Project 3 – “B” Cooling Tower

Project Description

- Rebuild the “B” Cooling Tower to ensure reliability through the end of current operating license (2031).
- “B” cooling tower is a wood structure that has been in service for 37 years
- Standard life expectancy for Redwood Cooling Tower Structures is 20 years.
- The Tower has been maintained by performing inspections and replacing members in accessible areas.
- Fill sections are not easily accessible and neither outage inspections nor routine walk downs can provide adequate inspection in these areas.
- There is an increased risk of cooling tower structural failure because the fill material surrounds the most heavily loaded columns in the tower, those that support the distribution header.
- The east end of the “B” Cooling Tower is experiencing bowing columns similar to “A” tower prior to replacement but to a lesser extent.
- Prior to replacement of “A” cooling tower the external visible evidence showed the columns in first 10 cells of the west end of “A” Tower were bowing by 6-8”.

Be the best at what matters most:

Operational Excellence.

Project 3 – “B” Cooling Tower

Importance Evaluation

- Safety (Very Low)
 - Step 1 – Any Impact
 - Q1 - Reduces frequency of risk significant accident initiator (Unplanned Power reduction)
 - Q5 – Improves defense in depth (Circulating water system to act as a heat sink via condenser)

Project 3 – “B” Cooling Tower

Importance Evaluation

- Safety (Very Low)
 - Step 2 – More Than Minimal Impact
 - Q1 – Not more than minimal (Operator transient training and operating history give high probability of recovering loss of vacuum prior to unit trip)
 - Q5 – Not more than minimal (Maintaining circulating water system as a defense in depth function is not discernable because of multiple other methods to remove decay heat, such as atmospheric dump valves, main steam relief valves, and once through cooling.)

*If ALL questions are answered **NO**, then the issue or activity screens to minimal impact and the Nuclear Safety Importance is **VERY LOW**.*

Project 3 – “B” Cooling Tower

Importance Evaluation

- Reliability (High)
 - Step 1 – Any Impact
 - Q1 – Risk of SSC failure (OE Vermont Yankee and “A” tower gives an increased risk of tower failure from this condition)
 - Q2 – Replacement Lead Time Impact (Repairs of failed tower would take a minimum 3 months, with an additional 1-2 month design, sourcing, and mobilization effort.)
 - Q4 – Plant Reliability Impact (Require an immediate derate to 55% for a minimum of 3 months)
 - Q5 – Preventive Maintenance Impact (Increased PM scope due to tower age)

Be the best at what matters most:

Operational Excellence.

Project 3 – “B” Cooling Tower

Importance Evaluation

- Reliability (High)
 - Step 2 – Reliability Importance
 - Timeframe for Action – Short (<2 cycles) based on based on VY OE, PAL “A” Tower condition at replacement, tower age, inability to inspect
 - Potential Unit Outage Time Avoided – Months (\geq 60 days) based on time to repair a failed tower.

Project 3 – “B” Cooling Tower

Importance Evaluation - Reliability – Urgency and Potential Impact

Table 4-2 Matrix by Urgency and Potential Impact

Time frame (in operating cycles) for action associated with the issue	Potential Impact of Action Resolving Issue (Duration of Plant Outage Avoided)		
	Day(s)	Week(s)	Month(s)
	Importance		
Long (≥ 2)	Very Low	Low	Medium
Short (< 2)	Low	Medium	High

- The Reliability Importance is: Very Low Low Medium High

Be the best at what matters most:
Operational Excellence.

Project 3 – “B” Cooling Tower

Importance Evaluation

– Other Categories (None)

- Security – No impact system does not impact physical security barriers or cyber systems located outside protected area
- Emergency Planning – No Impact system is not relied upon for accident mitigation
- Radiation Protection – No Impact areas outside RCA

Project 3 – “B” Cooling Tower

Prioritization and Scheduling

- NEI Process Priority 2
- Palisades Project Priority 4
- NEI Process Schedule May 2017
- Palisades Project Schedule May 2017

Aggregation and Scheduling

- **Assigned NEI Priority**
- **Pairwise Comparison between NEI Priorities**
 - Exception taken – Install Permanent Reactor Cavity Fall Protection downgraded priority 3 to 4.
- **Pairwise Comparison with-in NEI Priority**
- **Assign Palisades Priority**
- **Schedule Completion Dates Assigned**

Aggregation and Scheduling

NEI Priority Guidance

5.0 AGGREGATION TO DETERMINE PRIORITY

After the plant IDP has assigned each issue a level of importance (high, medium, low, very low, or none) in each of the five categories (Safety, Security, EP, RP, and Reliability), the following criteria are used to assign the issue a priority level from 1 to 5. Prioritization and scheduling will be periodically updated based on plant-specific planning, e.g., annually in conjunction with updates to the business plan.

Priority 1

- Issue defined by NRC as adequate protection, OR
- High for Safety, OR
- Two or more Highs for any of the four other categories (Security, EP, RP, Reliability)

Priority 2

- Medium for Safety, OR
- One High for any of the four other categories, OR
- Two or more Mediums for any of the four other categories

Priority 3

- Low for Safety, OR
- One Medium for any of the four other categories, OR
- Two or more Lows for any of the four other categories

Priority 4

- Very Low for safety, OR
- One Low for any of the four other categories

Priority 5

- Does not meet any of the criteria for Priorities 1 through 4

Aggregation and Scheduling

Priority Assignment Examples

Issue	Category	Importance Category					NEI Priority	Palisades Priority
		Safety	Emergency Planning	Radiation Protection	Security	Reliability		
Additional High Head Diesel Driven Aux Feedwater Pump	Regulatory	Medium	None	None	Very Low	None	2	1
Incipient Detection for Cable Spreading, electrical equipment room	Regulatory	Medium	None	None	None	None	2	2
Cooling Tower E-30B Replacement due to Aging	Plant Improvement	Very Low	None	None	None	High	2	4
Combine EOPs and SAMGs into one Procedure	Regulatory	Low	Very Low	None	None	None	3	7
Replace Refueling Machine Control Consoles due to Aging	Plant Improvement	None	None	None	None	Low	4	8
Install Permanent Personnel Fall Protection at Rx Cavity Tilt Pit	Plant Improvement	None	None	Medium	None	None	4	11
Reliable Spent Fuel Pool Instrumentation Installation	Regulatory	Very Low	None	None	None	None	4	12
Develop and install an electrical open phase detection and isolation	Regulatory	Very Low	None	None	None	None	5	18
Replace pressurizer heater breakers due to Accelerated Aging from Elevated Ambient Temperatures	Plant Improvement	None	None	None	None	None	5	19

Be the best at what matters most:
Operational Excellence.

Aggregation and Scheduling

- NEI Scheduling guidance
- Identify each project as Outage or On-Line
- Sort each group (Outage and On-Line) per NEI/Palisades priority
- Based on plant conditions (i.e. Outage train windows) assign target completion dates
- Based on available resources (Personnel, Budget, etc.) adjust completion dates

Be the best at what matters most:

Operational Excellence.

Aggregation and Scheduling

NEI Scheduling guidance

- Sufficient resources (financial and skilled personnel) should be dedicated to Priority 1 activities.
- Priority 2 activities should be worked after maximum feasible resources are assigned to all Priority 1 activities.
- Priority 3 activities should be worked after maximum feasible resources are assigned to all Priority 1 and 2 activities.
- Priority 4 activities should be worked after maximum feasible resources are assigned to all Priority 1, 2 and 3 activities.
- Priority 5 activities should be worked after maximum feasible resources are assigned to all Priority 1, 2, 3 and 4 activities.

Be the best at what matters most:

Operational Excellence.

Aggregation and Scheduling

Schedule Completion Dates Assignment Examples

Issue	Plant Condition	Current Schedule	Pilot Scheduled	Comments
Additional Diesel Driven Auxiliary Feedwater Pump (NFPA-805)	Outage	MAY 2017	MAY 2017	First left train outage to support modification implementation is 1R25.
Incipient Detection in Cable Spreading and Electrical Equipment Room (NFPA-805)	On-Line	OCT 2016	JUN 2016	Discuss with fleet projects the ability to move up modification implementation to before Jun 2016.
Cooling Tower E-30B Replacement (Aging)	Outage	MAY 2017	MAY 2017	
Combine Emergency Operating Procedures and Severe Accident Management Guidelines into one Procedure (Fukushima)	On-Line	DEC 2016	JUN 2016	
Replace Refueling Machine Control Consoles (Aging)	Outage	MAY 2017	MAY 2017	
Permanent Personnel Fall Protection Install at Rx Cavity Tilt Pit (Personnel Safety)	Outage	OCT 2015	OCT 2015	Resources available to complete in 1R24 without impacting higher priority projects.
Reliable Spent Fuel Pool Instrumentation Installation (Fukushima)	On-Line	JAN 2015	DEC 2017	Project is currently designed and funded for installation in 2015
Install Electrical Open Phase Detection and Isolation (NRC Bulletin)	Outage	MAY 2017	NOV 2018	Isolation function placed in service after 18 months of monitoring. Consider exemption to not install isolation function.
Replace Pressurizer Heater Breakers (Aging)	On-Line	MAR 2015	JUN 2019	

Aggregation and Scheduling

Aggregation Actions:

- Consider feasibility of installing incipient detection earlier than currently scheduled (Currently October 2016).
- Request procedure change for addition of PRA risk insights to Plant Health Committee discussions and priority assignments.
- Consider use of PRA insights as a basis for an exemption from the open phase isolation function.

Lessons Learned

Value/Benefit

- Issue characterization evaluations provided a systematic approach using PRA insights to consistently determine the importance of projects .
- Characterization evaluations completed by SMEs and reviewed by site senior leadership provides valuable input used to make risk informed decisions on project priority.
- The project aggregation through pairwise comparison of project benefits aids in maintaining a risk reduction focus when allocating limited resources.
- IDP meetings provided a venue for station senior leadership to align priorities including key members of the plant health committee.
- The NEI process provides a common platform for the industry and the NRC staff to discuss the risk benefits of individual issues/projects.

Lessons Learned

Process Improvement Opportunities

- Completed importance evaluations, new importance evaluations, and emergent importance evaluations require re-aggregation on a periodic or emergent basis.
- Project scope definition is critical to the quality of the importance evaluation and has a significant impact on time spent completing the importance evaluation.
- The training material assumed the SMEs had a basic understanding of 50.59 evaluations and an intermediate understanding of PRA modeling.
- During aggregation and scheduling the IDP panel discussions affecting prioritization and scheduling should be documented.

Plant Hatch Cumulative Impacts Pilot Advisory Committee on Reactor Safeguards

Greg Johnson – Regulatory Affairs Mgr

11/03/2014

Hatch CITF Pilot

Danny Bost (Southern Nuclear CNO) is Chairman, NEI Cumulative Impact Working Group.

Danny Bost asked Hatch be a CITF Pilot Plant.

Original vision was a process which would allow for re-schedule of NRC related projects and even removal of projects based on risk. An “everything on the plate” perspective.

Hatch CITF Pilot

Hatch Pilot Preparation:

20 Projects selected to Pilot.

Core Team established to perform individual assessments with subject matter experts.

NEI Training conducted with Pilot kick off.

Pilot Integrated Decision-Making Panel (IDP) selected. Same as Maintenance Rule expert panel.

Hatch CITF Pilot

Hatch Pilot Preparation:

Pilot Integrated Decision-Making Panel (IDP).

Regulatory Affairs Manager

OPS Control Room SRO (2)

Work Controls Planner

Engineering Supervisor

Maintenance Manager

Licensing Supervisor

Risk Informed (PRA) – Principal Engineer

Licensing Engineer (3)

Hatch CITF Pilot

Hatch Issue Prioritization:

20 Projects Total

6 Projects were related to NRC Commitments

1 Project NEI Commitment (Open Phase)

13 Projects, Plant Health

Hatch CITF Pilot

Project	Project Description	Comments
1	HPCI Controls Replacements	Plant Health, Obsolescence issue
2	RCIC Controls Replacements	Plant Health, Obsolescence issue
3	Battery Charger Replacement	Plant Health, Obsolescence issue
4	600V Breaker Replacements	Plant Health, Obsolescence issue
5	MSIV Conversion	Plant Health, Component Upgrade
6	Safety Relief Valve Upgrades	Plant Health, Component Upgrade
7	Motor Control Center Pan Assemblies	Plant Health, Obsolescence issue
8	EDG Improvements	Plant Health, System Upgrade
9	Rx Building Roof	Plant Health, Material Condition
10	Seismic Monitoring System	Plant Health, Obsolescence issue
11	Diagonal Cooler Replacements	Plant Health, Material Condition
12	EDG Excitation Panels	Plant Health, Obsolescence issue
13	NFPA-805	NRC Commitment: Not able to assess.
14	Cyber Security	NRC Rule
15	Reliable Spent Fuel Pool Instrumentation	NRC Flex Order
16	Open Phase Protection	NRC Bulletin . NEI commitment no firm NRC commitment.
17	License Renewal Commitments	NRC Program Commitment: Too broad to review.
18	Diesel Generator LOCA/LOSP Timer Cards	Plant Health, Component Upgrade
19	Degraded Grid Transformers	NRC CDBI Finding W Commitment date
20	Weld Overlay	NRC Program Commitment (ISI)
	NRC Commitment Related	

Hatch CITF Pilot

Project	Project Description	Comments
1	HPCI Controls Replacements	Plant Health, Obsolescence issue
2	RCIC Controls Replacements	Plant Health, Obsolescence issue
3	Battery Charger Replacement	Plant Health, Obsolescence issue
4	600V Breaker Replacements	Plant Health, Obsolescence issue
5	MSIV Conversion	Plant Health, Component Upgrade
6	Safety Relief Valve Upgrades	Plant Health, Component Upgrade
7	Motor Control Center Pan Assemblies	Plant Health, Obsolescence issue
8	EDG Improvements	Plant Health, System Upgrade
9	Rx Building Roof	Plant Health, Material Condition
10	Seismic Monitoring System	Plant Health, Obsolescence issue
11	Diagonal Cooler Replacements	Plant Health, Material Condition
12	EDG Excitation Panels	Plant Health, Obsolescence issue
13	NFPA-805	NRC Commitment: Not able to assess.
14	Cyber Security	NRC Rule
15	Reliable Spent Fuel Pool Instrumentation	NRC Flex Order
16	Open Phase Protection	NRC Bulletin . NEI commitment no firm NRC commitment.
17	License Renewal Commitments	NRC Program Commitment: Too broad to review.
18	Diesel Generator LOCA/LOSP Timer Cards	Plant Health, Component Upgrade
19	Degraded Grid Transformers	NRC CDBI Finding W Commitment date
20	Weld Overlay	NRC Program Commitment (ISI)
	NRC Commitment Related	

Hatch Pilot Projects

Project	Project Description	Comments
1	HPCI Controls Replacements	Plant Health, Obsolescence issue
2	RCIC Controls Replacements	Plant Health, Obsolescence issue
3	Battery Charger Replacement	Plant Health, Obsolescence issue
4	600V Breaker Replacements	Plant Health, Obsolescence issue
5	MSIV Conversion	Plant Health, Component Upgrade
6	Safety Relief Valve Upgrades	Plant Health, Component Upgrade
7	Motor Control Center Pan Assemblies	Plant Health, Obsolescence issue
8	EDG Improvements	Plant Health, System Upgrade
9	Rx Building Roof	Plant Health, Material Condition
10	Seismic Monitoring System	Plant Health, Obsolescence issue
11	Diagonal Cooler Replacements	Plant Health, Material Condition
12	EDG Excitation Panels	Plant Health, Obsolescence issue
13	NFPA-805	NRC Commitment: Not able to assess.
14	Cyber Security	NRC Rule
15	Reliable Spent Fuel Pool Instrumentation	NRC Flex Order
16	Open Phase Protection	NRC Bulletin . NEI commitment no firm NRC commitment.
17	License Renewal Commitments	NRC Program Commitment: Too broad to review.
18	Diesel Generator LOCA/LOSP Timer Cards	Plant Health, Component Upgrade
19	Degraded Grid Transformers	NRC CDBI Finding W Commitment date
20	Weld Overlay	NRC Program Commitment (ISI)
	NRC Commitment Related	

Hatch Pilot Project – SRV's

SRV Project

- Replace the existing Hatch U1 and U2 two-stage pilot operated Main Steam Safety/Relief Valves (SRVs) with 3-stage pilot operated SRVs. The 3-stage SRVs have a modified pilot that helps reduce the possibility of an inadvertent lift and leak by.
- One of 11 U2 SRVs was replaced with a 3-Stage in 2013.
- All eleven U1 SRVs were replaced during the 2014 refueling outage and replaced with 3-stage SRVs.
- Remaining 10 of 11 U2 SRVs will be replaced in 2015.

Hatch Pilot Project – SRV's

SRV Project (continued)

Importance Evaluation

Safety (low)

- Step 1- Any Impact?
 - Q2 – Yes, Increased reliability of a SSC relied upon to mitigate a risk significant transient.
 - Q4 – Yes, Result in an impact in capability of fission product barrier. SRV is part of RPV boundary.

Hatch Pilot Project – SRV's

SRV Project (continued)

Importance Evaluation

Safety (low)

- Step 2- More than minimal impact?
 - Q2 – Yes, Improved reliability greatly reduces or eliminates the need for mid-cycle shutdown to replace. More than minimal improvement.
 - Q4 – No, Result in an impact in capability of fission product barrier. Not more than minimal. Past strategy to replace ensure capability of the SRV.

Hatch Pilot Project – SRV's

SRV Project (continued)

Importance Evaluation

Safety (low)

- Step 3a – Impact to risk (Qualitative)
 - The two stage SRV have a history of pilot valve leaking requiring mid-cycle shutdown. Replacing the SRV pilot mid-cycle results in a direct opening between the RPV and Primary Containment. During the mid cycle outage the decay heat levels are high with short reactor coolant boiling times. This results in higher than nominal shutdown risk levels. Because of this the existing risk evaluates to White with the improvement in risk as Medium. This yields an overall Safety Importance of Low.

Hatch Pilot Project – SRV's

Table 3-1 Matrix by Current Risk and Potential Impact					
UB is upper bound of the risk range; Mid is “mid-range” (0.3 times UB); LB is factor of 10 lower than UB ¹					
Current Risk associated with Issue	Potential Impact of Action Resolving Issue (Reduction in Risk)				
	None	Very Small/Minimal	Small	Medium	High
	0%	0 to 25%	25 to 50%	50% to 90%	>90%
	Importance				
Green (VL) LB	<Very Low	<Very Low	<Very Low	<Very Low	<Very Low
Green (VL) Mid	Very Low	Very Low	Very Low	Very Low	Very Low
Green (VL) UB	Very Low	Very Low	Very Low	Very Low	Very Low
White (L) LB	Very Low	Very Low	Very Low	Very Low	Very Low
White (L) Mid	Very Low	Very Low	Low	Low	Low
White (L) UB	Very Low	Low	Low	Low	Low
Yellow (M) LB	Very Low	Low	Low	Low	Low
Yellow (M) Mid	Very Low	Low	Medium	Medium	Medium

Hatch Pilot Project – SRV's

SRV Project (continued)

Importance Evaluation

Other Categories:

- Security (none)
- Emergency Planning (none)
- Radiation Protection (none)
- Reliability (Low)

Hatch Pilot Project - SRVs

Prioritization and Scheduling

- NEI Process Priority 3
- Hatch IDP Priority 2
- Project Schedule March, 2015*

*Unit 1 is complete. Unit 2 will complete March 2015

Hatch Pilot Project – EDG Excitation

EDG Excitation Project

- The standby ac power supply consists of five diesel generators for both Hatch Nuclear Plant Units 1 and 2 and supplies standby power for 4160-V emergency service buses.
- If an EDG is determined to be INOPERABLE, the Technical Specification Required Action Statement is to return the system to OPERABLE status within 14 days and if not returned to OPERABLE status within 14 days to then be in Mode 3 in 12 hours and Mode 4 in 36 hours.
- EDG is also a MSPI system.
- The EDG System Excitation Panels are subcomponents of the EDG which enable the generator to achieve the required output voltage. About 60% of the parts of the Excitation Panels are obsolete.
- Present project plans are to replace the EDG Excitation Panels one per refueling outage starting in 2015. The excitation panels currently installed in the plant are functioning reliably as designed. A limited quantity of spare parts is available on site. In the event failures were to start occurring, the replacement schedule would need to be accelerated due to depletion of the spare parts.

Hatch Pilot Project – EDG Excitation

EDG Excitation Project (continued)

Importance Evaluation

Safety (very low)

- Step 1- Any Impact?
- Q2– Yes, Improvement in reliability of SSC used to mitigate an accident.

Hatch Pilot Project – EDG Excitation

EDG Excitation (continued)

Importance Evaluation

Safety (very low)

- Step 2- More than minimal impact?
 - All Questions - No
 - Q2 – No, Reliability is not impacted at present and spare parts are presently available. With parts bridging strategy and implementation plan should not be a more than minimal impact to EDG reliability.

Hatch Pilot Project – EDG Excitation

EDG Excitation (continued)

Importance Evaluation

Other Categories:

- Security (none)
- Emergency Planning (none)
- Radiation Protection (none)
- Reliability (Medium)

Hatch Pilot Project – EDG Excitation

Prioritization and Scheduling

- NEI Process Priority 3
- Hatch IDP Priority 3
- Project Schedule March, 2020

Hatch Pilot Project – Degraded Grid

Degraded Grid

- With the existing medium voltage distribution system configuration, if grid voltage were to degrade, a small voltage band exists where manual operator action would be required to switch power to the diesel generator. If this condition happened concurrent with a loss of coolant accident (LOCA) it is possible that voltage margins would be too low to allow the required motors needed to mitigate the consequences of a LOCA to start.
- The proposed solution increases the number and size of the startup transformers to address this situation. Larger transformers would have lower impedance. More transformers would split loads, thereby using less current which results in a lower voltage drop. This helps to reduce voltage losses thereby increasing voltage margins.
- Logic would be introduced that would automatically tie to different off-site power, during a LOCA, when a grid under-voltage alarm is received.

Hatch Pilot Project – Degraded Grid

Degraded Grid (continued)

Importance Evaluation

Safety (very low)

- Step 1- Any Impact?
 - Q1 – Yes, Impact to accident initiator. LOSP
 - Q2 – Yes, Increased reliability of a SSC relied upon to mitigate an accident.
 - Q5, - Yes, impact to defense in depth.

Hatch Pilot Project – Degraded Grid

Degraded Grid (continued)

Importance Evaluation

Safety (very low)

- Step 2- More than minimal impact?
 - Q1 – Yes, 3rd transformer reduces likelihood of accident initiator.
 - Q2 – Yes, improved reliability.
 - Q5 – Yes, 3rd transformer provides defense in depth.

Hatch Pilot Project – Degraded Grid

Degraded Grid (continued)

Importance Evaluation

Safety (very low)

- Step 3a – Impact to risk (Quantitative)
 - Existing Risk: Degraded Grid X LOCA= 1.34 E-10.
 - Improved Risk due after 3rd transformer installed.
 - Increased Risk during implementation.
 - Net result is little improvement overall.

Hatch Pilot Project – Degraded Grid

Table 3-1 Matrix by Current Risk and Potential Impact					
UB is upper bound of the risk range; Mid is “mid-range” (0.3 times UB); LB is factor of 10 lower than UB ¹					
Current Risk associated with Issue	Potential Impact of Action Resolving Issue (Reduction in Risk)				
	None	Very Small/Minimal	Small	Medium	High
	0%	0 to 25%	25 to 50%	50% to 90%	>90%
	Importance				
Green (VL) LB	<Very Low	<Very Low	<Very Low	<Very Low	<Very Low
Green (VL) Mid	Very Low	Very Low	Very Low	Very Low	Very Low
Green (VL) UB	Very Low	Very Low	Very Low	Very Low	Very Low
White (L) LB	Very Low	Very Low	Very Low	Very Low	Very Low
White (L) Mid	Very Low	Very Low	Low	Low	Low
White (L) UB	Very Low	Low	Low	Low	Low
Yellow (M) LB	Very Low	Low	Low	Low	Low
Yellow (M) Mid	Very Low	Low	Medium	Medium	Medium

Hatch Pilot Project – Degraded Grid

Degraded Grid (continued)

Importance Evaluation

Other Categories:

- Security (none)
- Emergency Planning (none)
- Radiation Protection (none)
- Reliability (Low)

Hatch Pilot Project – Degraded Grid

Prioritization and Scheduling

- NEI Process Priority 4
- Hatch IDP Priority 4
- Project Schedule March, 2020

Hatch Pilot Projects - Aggregation

Project	Project Description	Step 2					Step 3	Other				NEI Priority	Comments
		Q1	Q2	Q3	Q4	Q5	Safety Risk Assessment	Cyber	EP	RP	Reliab		
1	HPCI Controls Replacements	N	N	N	N	N	VL	N	N	N	Med	3	Plant Health, Obsolescence issue
2	RCIC Controls Replacements	N	N	N	N	N	VL	N	N	N	Med	3	Plant Health, Obsolescence issue
3	Battery Charger Replacement	N	N	N	N	N	VL	N	N	N	Low	4	Plant Health, Obsolescence issue
4	600V Breaker Replacements	N	N	N	N	N	VL	N	N	N	Low	4	Plant Health, Obsolescence issue
5	MSIV Conversion	N	N	N	N	N	VL	N	N	N	Low	4	Plant Health, Component Upgrade
6	Safety Relief Valve Upgrades	N	Y	N	N	N	Low	N	N	N	Low	3	Plant Health, Component Upgrade
7	Motor Control Center Pan Assemblies	N	N	N	N	N	VL	N	N	N	Low	4	Plant Health, Obsolescence issue
8	EDG Improvements	N	N	N	N	N	VL	N	N	N	Med	3	Plant Health, System Upgrade
9	Rx Building Roof	N	N	N	N	N	None	N	N	N	None	5	Plant Health, Material Condition
10	Seismic Monitoring System	N	N	N	N	N	VL	N	N	N	Low	4	Plant Health, Obsolescence issue
11	Diagonal Cooler Replacements	N	N	N	N	N	VL	N	N	N	Med	3	Plant Health, Material Condition
12	EDG Excitation Panels	N	N	N	N	N	VL	N	N	N	Med	3	Plant Health, Obsolescence issue
13	NFPA-805												NRC Commitment: Not able to assess.
14	Cyber Security	Y	Y	Y	N	Y	VL	Med	VL	N	Med	2	NRC Rule
15	Reliable Spent Fuel Pool Instrumentation	N	N	N	N	N	VL	N	N	Med	None	3	NRC Flex Order
16	Open Phase Protection	N	Y	N	N	Y	VL	N	N	N	Low	4	NRC Bulletin . NEI commitment no firm NRC commitment.
17	License Renewal Commitments												NRC Program Commitment: Too broad to review.
18	Diesel Generator LOCA/LOSP Timer Cards	N	N	N	N	N	V/L	N	N	N	Low	4	Plant Health, Component Upgrade
19	Degraded Grid Transformers	Y	Y	N	N	Y	VL	N	N	N	Low	4	NRC CDBI Finding W Commitment date
20	Weld Overlay	N	N	N	N	N	VL	N	N	N	High	2	NRC Program Commitment (ISI)
	NRC Commitment Related												

Hatch Pilot Project - Aggregation

SNC Edwin I. Hatch Nuclear Plant Cumulative Effect Pilot Aggregation														
Project	Project Description	Step 2					Step 3	Other Importance				Priority and Schedule		
		Q1	Q2	Q3	Q4	Q5	Safety Risk Assessment	Cyber	EP	RP	Reliab	NEI Priority	Ranking	General Comments
17	License Renewal Commitments												N/A	NRC Commitment: Too broad to review.
13	NFPA-805												N/A	NRC Commitment: Not able to assess at this point in the 805 process.
20	Weld Overlay	N	N	N	N	N	VL	N	N	N	High	2	1	NRC Commitment (ISI Plan)
6	Safety Relief Valve Upgrades	N	Y	N	N	N	Low	N	N	N	Low	2	2	Plant Health
14	Cyber Security	Y	Y	Y	N	Y	VL	Med	VL	N	Med	2	3	NRC Commitment (Cyber)
15	Reliable Spent Fuel Pool Instrumentation	N	N	N	N	N	VL	N	N	Med	None	3	6	NRC Commitment (FLEX)
1	HPCI Controls Replacements	N	N	N	N	N	VL	N	N	N	Med	3	3	Plant Health
2	RCIC Controls Replacements	N	N	N	N	N	VL	N	N	N	Med	3	4	Plant Health
8	EDG Improvements	N	N	N	N	N	VL	N	N	N	Med	3	2	Plant Health
11	Diagonal Cooler Replacements	N	N	N	N	N	VL	N	N	N	Med	3	5	Plant Health
12	EDG Excitation Panels	N	N	N	N	N	VL	N	N	N	Med	3	1	Plant Health
3	Battery Charger Replacement	N	N	N	N	N	VL	N	N	N	Low	4	4	Plant Health
4	600V Breaker Replacements	N	N	N	N	N	VL	N	N	N	Low	4	3	Plant Health
5	MSIV Conversion	N	N	N	N	N	VL	N	N	N	Low	4	2	Plant Health
7	Motor Control Center Pan Assemblies	N	N	N	N	N	VL	N	N	N	Low	4	5	Plant Health
10	Seismic Monitoring System	N	N	N	N	N	VL	N	N	N	Low	4	8	Plant Health
16	Open Phase Protection	N	Y	N	N	Y	VL	N	N	N	Low	4	7	NEI commitment no firm NRC commitment.
18	Diesel Generator LOCA/LOSP Timer Cards	N	N	N	N	N	VL	N	N	N	Low	4	1	Plant Health
19	Degraded Grid Transformers	Y	Y	N	N	Y	VL	N	N	N	Low	4	6	NRC Commitment (Hatch CDBI)
9	Rx Building Roof	N	N	N	N	N	None	N	N	N	N/A	5	1	Plant Health
	NRC Commitment Related													

Hatch Pilot - Schedule

				2R23	1R27						
Priority and Schedule				Outage	U2	U1	U2	U1	U2	U1	
Project	Project Description	NEI Priority	Ranking	Scheduling Comments	2014	2015	2016	2017	2018	2019	2020
17	License Renewal Commitments			Perform as Scheduled. Programmatic improvements					July, 2018		
13	NFPA-805			Perform as Scheduled, LAR to the NRC by 10/4//2016			LAR to NRC Oct, 2016				
20	Weld Overlay	2	1	Perform as Scheduled. Last Outage opportunity before the end of the inspection period.		2R23					
6	Safety Relief Valve Upgrades	3	2	Perform as Scheduled. U1 complete. U2 in 2R23 in 2015.		2R23					
14	Cyber Security	2	3	Perform as Scheduled, Cyber Milestone 8 required to be complete 12/31/2016			MS 8 12/31/2016				
15	Reliable Spent Fuel Pool Instrumentation	3	6	Perform as Scheduled, Plan is to implement Fall 2015.			U1 3/2016, U2 12/2016				
1	HPCI Controls Replacements	3	3	Perform as Scheduled, Unit 1 NO 2018, Unit 2 NO 2019.					Unit 1 NO	Unit 2 NO	
2	RCIC Controls Replacements	3	4	Perform as Scheduled. Unit 1 NO 2016, Unit 2 NO 2017.			Unit 1 NO	Unit 2 NO			
8	EDG Improvements	3	2	Perform as Scheduled. % D/G's. 1 D/G per year (2015, 2016, 2017, 2018, 2020)		NO	NO	NO	NO		NO
11	Diagonal Cooler Replacements	3	5	Perform as Scheduled		U2 RHR/CS	U1 RHR/CS U1 RCIC	U2 RCIC			
12	EDG Excitation Panels	3	1	Perform as Scheduled		2A D/G	1C D/G	2C D/G	1A D/G		1B D/G
3	Battery Charger Replacement	4	4	Perform as Scheduled. U1 NO 2014, U2 NO 2015	U1 (NO)	U2 (NO)					
4	600V Breaker Replacements	4	3	Perform as Scheduled. Several/year thru 2019							
5	MSIV Conversion	4	2	Perform as Scheduled. U2 only, 3 in 2015, 3 in 2017.		U2 (3)		U2 (3)			
7	Motor Control Center Pan Assemblies	4	5	Perform as Scheduled. Several/year thru 2018							
10	Seismic Monitoring System	4	8	Could re-schedule, Obsolescence					U1	U2	
16	Open Phase Protection	4	7	Reassess based on on-going Industry/ NRC discussions. NEI Commitment date 12/2017			U1	U2			
18	Diesel Generator LOCA/LOSP Timer Cards	4	1	Could re-schedule		2A D/G	1B D/G	2C D/G			
19	Degraded Grid Transformers	4	6	Could re-schedule. Commitment Date is March 2020							U1&U2
9	Rx Building Roof	5	1	Activity is in progress. Could have been rescheduled.	In Progress						

Hatch Lessons Learned

Not every Project can be assessed by this process.

The aggregation process seems particularly valuable as a tool for looking at everything with the same perspective.

Hatch Pilot – Value Added

- Project Aggregation is beneficial.
- Provides an “everything on the plate” perspective.
- Rigorous and repeatable process.
- PRA insight driven, not a PRA science project.
- Reliability component is a needed and necessary part of the assessment tool. It provided needed input to make sure you are doing the right thing based on risk.

Hatch Pilot – Final Perspective

20 Projects assessed.

After Aggregate Review only 1 NRC related Project selected for a potential commitment date change. Change from a March 2020 date to a March 2022 date.

Any schedule change still requires NRC approval.



Cumulative Effects of Regulation

Pilot Results-Robinson Nuclear Plant



- Robinson Site Lead – Sonja Myers
 - Engineering Manager – Equipment Reliability
 - 3 years Robinson Experience
 - 32 years Nuclear Engineering Experience at
 - Equipment Reliability
 - Design
 - Licensing
 - Project Management
 - Multiple Stations
 - Robinson
 - Palo Verde
 - Comanche Peak
 - Prairie Island

Introduction of Robinson Participation in Pilot

- Duke Participation:
 - Opportunity to Optimize Use of Limited Resources
 - Immediate Need to Prioritize Regulatory Actions Against Plant-Identified Actions
 - Commensurate with Safety Significance and Cost Effectiveness
 - Better Prioritization Leads to Improved Plant Safety
- Robinson Nuclear Plant
 - Cost Impact of Each Issue for Single Unit Sites is Greater
 - Pre-GDC Plants Pose Opportunities for Unique Challenges
 - Opportunity based on Operating Cycle (i.e. No outage in 2014)

Selection of Integrated Decision Making Panel

- Panel Makeup
 - Diverse Panel Selected
 - Senior Management
 - Operations
 - Engineering
 - PRA
 - Licensing
 - Maintenance
 - Training
 - Included
 - Duke Fleet Experience
 - Robinson Specific
 - Outside Duke Experience

Selection of Integrated Decision Making Panel

- Site Director – Mike Glover – 40 years of Duke experience including Engineering, Operations and Senior Station Management at 3 Duke sites as well as Corporate
- Operations – Chris Orr-30 years nuclear experience. Held RO and SRO licenses at Catawba. On-Line Corporate Functional Area Manager (CFAM) in Nuclear Corporate. Assistant Ops Manager Robinson
- Major Projects – Terry Simonson - 30 years of Nuclear at Duke. Held various leadership roles at the site in Engineering and Maintenance.
- Probabilistic Risk Analysis – Bruce Morgen- 35 years of nuclear experience and is the Manager of PRA Applications for the Brunswick, Harris and Robinson Nuclear Plants
- Licensing- Richard Hightower 33 years of Nuclear experience including Program Engineering and is the Manager of Nuclear Regulatory Affairs at the Robinson Nuclear Plant.
- Ops Training – Robert Shane - 30 years of Nuclear experience. SRO at Robinson and was licensed for 18 years. Supervisor of Operator Initial Training.
- Engineering – Gary Swider - 38 years of nuclear experience. He has extensive experience in engineering management at St Lucie Power and Millstone. Engineering Recovery Manager for RNP

- Selection Process
 - Regulatory Issues Currently under Scoping, Design or Implementation
 - Reliability Issues near the funding line
 - Included Personal Safety, Emergency Plan Impacts, and Projects with Dose Impacts
 - Issues as Recommended by Station Management

- 11 Regulatory Based Projects
 - NFPA 805 Mods (3)
 - Fukushima Mods (2)
 - Cyber-security
 - TSTF 523 implementation
 - Insulation Replacement for GSI-191
 - Open Phase – Byron Event
 - MRP-227A material change-out
 - Lake Level Indication

- 11 Reliability based Projects
 - Loss of RCP Seal Cooling
 - LCV-1417A fail open to fail closed
 - Local Operator Action to Reset Breaker to Instrument Air Compressor
 - Operator Burden- Inhibiting Fire Suppression
 - Replace existing Vacuum switches
 - Replace System 6185 Cable Vault CO2 system
 - Install Communication Repeater in Containment
 - Diaphragm Valve replacement
 - Loose Parts Monitoring Upgrade
 - Isolation valve in RWST Supply to charging pumps pipe 4-SI-82
 - Replace B-Battery with Larger Battery

- Review of Example Evaluations
 - TSTF-523 Implementation
 - Replacement of B Battery with a Larger Capacity Battery
 - Installation of the Westinghouse RCP Shutdown Seals

TSTF-523 proposed modifying the existing Surveillance Requirements (SRs) related to gas accumulation for the Emergency Core Cooling Systems (ECCS) and adds new SRs on entrained gas to the specifications governing the Residual Heat Removal (RHR), Shut Down Cooling (SDC) and Containment Spray (CS) systems. Existing SRs are revised to facilitate the performance of the gas accumulation SR. The Bases are revised to reflect the change to the SRs. Changes to other SRs are made to facilitate performance of the gas accumulation SRs.

The Limiting Condition for Operation (LCO) Bases for the specifications governing the ECCS, and the RHR, SDC, and CS Systems are revised to acknowledge that management of gas voids is important to system operability.

The actions taken from Generic Letter 08-01 response has been effective in detecting and preventing voids at Robinson. Incorporating the monitoring and testing for voids into Tech Specs will assure sustainability of the actions. It is judged that there is not a discernable change by changing the commitment from the Generic Letter response to including the commitment into Tech Specs.

Implementing the change to Tech Specs will increase the frequency of testing. This will negatively impact personnel as the personnel will be unavailable to perform other maintenance or operations activities. Increased testing frequency would also increase the dose received by station personnel. Overall this was determined to have no increased safety impact and a negative impact on dose and equipment reliability.

Nuclear Safety importance	Very Low
Security importance	None
Emergency plan importance	None
Radiological protection importance	Negative Impact
Reliability importance	Negative Impact

Importance_Evaluation

- Safety (Very Low)
 - Step 1 – Any Impact
 - Q2 – Improves Performance of ECCS Functions if Voids are Found
 - Q3 – Improves Performance of Containment Spray Functions Impacting Long Term Containment Cooling
 - Q5 – Improves Defense in Depth for ECCS Functions. Specifically, RCS Pressure, RCS Heat Removal, and Inventory Control are Positively Impacted.

Importance Evaluation

- Safety (Very Low)
 - Step 2 – More Than Minimal Impact
 - Q2 – The actions taken from Generic Letter 08-01 response has been effective in detecting and preventing voids at Robinson. Not a discernable change by changing the commitment from the Generic Letter response to including the commitment into Tech Specs.
 - Q3 - The change has a positive impact on the dose received during risk signification accident sequences where long term containment integrity is required. However, based on the existing monitoring for voids, this impact is judged to be minimal.
 - Q5 – Not more than minimal since testing is already performed versus an added defense in depth function.

*If ALL questions are answered **NO**, then the issue or activity screens to minimal impact and the Nuclear Safety Importance is **VERY LOW**.*

- Other areas
 - Equipment Reliability
 - This will negatively impact personnel as the personnel will be unavailable to perform other maintenance or operations activities.
 - Radiation Protection
 - Increased testing frequency would also increase the dose received by station personnel. Overall this was determined to have no increased safety impact and a negative impact on dose and equipment reliability.

Replacement of B Battery with a Larger Capacity Battery

Station Battery B (STATION-B) has minimal margin for increased loading. Station Battery B does not currently meet the sizing requirements of IEEE 485, including recommended margins. A larger battery must be selected to meet the sizing requirements of IEEE 485. Space in the Battery Room is limited and in order to expand Station Battery B, Battery Charger B-1 (BAT-CHRGR-B-1) must be relocated. Originally, the station batteries were considered to have an eight (8) hour duty cycle. In 1987, the battery duty cycle was reclassified as a one (1) hour duty cycle based on an RNP commitment to the battery sizing methodology of IEEE 485.

Previously (prior to 2011) the battery chargers were manually restarted within 1 hour of a LOOP or LOCA/LOOP event. Modifications to the plant were made in 2011 to automatically restart the in-service battery charger within the first minute after restoration of power from the associated emergency diesel generator. The duty cycle of the battery was not changed due to the addition of the automatic restart capability.

Each of the two safety-related station batteries is sized to carry its expected shutdown loads following a plant trip and a loss of all AC power for a period of 1 hour without battery terminal voltage falling below minimum allowable voltage. The battery is capable of meeting its current design function. The additional margin does not result in a longer battery duty cycle.

The battery is currently scheduled for replacement in 2015 based on its time in operation. Based on the remaining 18 years for the plant operating, no additional age related replacement may be necessary based on prior operating history and replacement schedule. The change was determined to be only a minimal improvement.

Nuclear Safety importance	Very Low
Security importance	None
Emergency plan importance	None
Radiological protection importance	None
Reliability importance	Low

Replacement of B Battery with a Larger Capacity Battery

- Safety (Very Low)
 - Step 1 – Any Impact
 - Q2 – Improves Capability of Safety Related Battery in Response to LOCA/LOOP concurrent with the single failure of the A EDG
 - Q5 – Improves Defense in Depth for Vital Electrical Power During a LOCA/LOOP Concurrent with the single failure of the A EDG

Replacement of B Battery with a Larger Capacity Battery

Importance Evaluation

- Safety (Very Low)
 - Step 2 – More Than Minimal Impact
 - Q2 – The battery is capable of meeting its current design function. The Change does not result in a longer battery duty cycle. Based on estimated time increases of minutes, the change is not more minimal.
 - Q5 – Based on estimated time increases of minutes, the change is not more minimal.

*If ALL questions are answered **NO**, then the issue or activity screens to minimal impact and the Nuclear Safety Importance is **VERY LOW**.*

Installation of the Westinghouse RCP Shutdown Seals

This project is to replace all the reactor coolant pump (RCP-A, RCP-B, RCP-C) No. 1 seal inserts with the Westinghouse SHIELD thermal shutdown seals

The new seals reduce the RCS Inventory losses from the currently analyzed 25 gpm to 1 gpm during a loss of RCP seal cooling event. This results in an increase in the time response required before a Charging Pump is required to be started to make-up to the RCS in either a SBO or SSA postulated fire scenario. In the current calculation, RCP seal losses are assumed to be 25 gpm per pump. The installation of the Westinghouse SDS seals would significantly extend the time until the core was uncovered (likely days) during a postulated station blackout event as the pump seal loss contribution would drop from a total of 75 gpm to 3 gpm.

The proposed design change replaces the dependency on time critical manual operator actions with a mechanical design feature to ensure the RCS remains intact.

Nuclear Safety importance	Medium
Security importance	None
Emergency plan importance	None
Radiological protection importance	None
Reliability importance	Low

Importance Evaluation

- Safety (Medium)
- Step 1 – Any Impact
 - Q2 – Positive Impact
 - Increase the Capability of RCP seals to maintain RCS pressure boundary during loss of all seal cooling event by reducing the RCS inventory losses significantly.
 - Increase Availability of Operators by Reducing time critical manual operator actions required to respond to a loss of all seal RCP cooling event
 - Q3- Positive Impact
 - Reduces the RCS Inventory losses from the currently analyzed 25gpm to 1 gpm during a loss of RCP seal cooling event.
 - Reduces the need for time critical operator actions with the restoration of RCP seal cooling during a SBO or fire that results in a loss of RCP Seal cooling

Installation of the Westinghouse RCP Shutdown Seals

Importance Evaluation

- Safety (Medium)
- Step 1 – Any Impact
 - Q4 – Positive Impact
 - The new seal design will increase the capability of the RCP seals to maintain RCS pressure boundary during a loss of all seal cooling event. This is due to the decreased RCS inventory losses resulting in an increased time to start a Charging Pump and make-up to the RCS.
 - Q5 – Positive Impact
 - The installation of the new SDS shields introduces a second barrier (or defense in depth) in case of a loss of all seal cooling event.

Importance Evaluation

- Safety (Medium)
- Step 2 – More Than Minimal
 - Q2 – Positive Impact
 - Results in less operational challenge to maintain Pressurizer level on scale as required by 10CFR50, Appendix R during this postulated event.
 - Allotted time to start a make-up pump is planned to be increased due to the limited RCS losses.
 - Reducing / eliminating the dependency on Manual Operator Actions to ensure RCS integrity during SBO and Fire events.
 - Q3- Positive Impact
 - Reduces the RCS Inventory losses from the currently analyzed 25gpm to 1 gpm during a loss of RCP seal cooling event.
 - Reduces the need for time critical operator actions with the restoration of RCP seal cooling during a SBO or fire that results in a loss of RCP Seal cooling

Installation of the Westinghouse RCP Shutdown Seals

Importance Evaluation

- Safety (Medium)
- Step 2 – More Than Minimal
 - Q4 – Positive Impact
 - The new seal design will increase the capability of the RCP seals to maintain RCS pressure boundary during a loss of all seal cooling event. This is due to the decreased RCS inventory losses resulting in an increased time to start a Charging Pump and make-up to the RCS.
 - Q5 – Positive Impact
 - The installation of the new SDS shields introduces a second barrier (or defense in depth) in case of a loss of all seal cooling event.

Installation of the Westinghouse RCP Shutdown Seals- PRA insights

- Estimated Contribution to Core Damage Frequency from RCP Seal LOCAs

- -Contribution of RCP Seal LOCAs to Internal Events CDF: 2.5E-06
- -Contribution of RCP Seal LOCAs to Fire CDF: 2E-05
- -Contribution of RCP Seal LOCAs to Seismic CDF: 1E-05
- -Contribution of RCP Seal LOCAs to other External Events: 1E-06
- **-Estimated Contribution of RCP Seal LOCAs to Total CDF: 3.35E-05**

- Based on the above risks, the consequential LOCAs from loss of RCP seal cooling, the current risk is considered in a medium yellow category.
- Shutdown Seals are estimated to fail to actuate when demanded at a rate of 2.17%, and successful actuation results in the prevention of RCP Seal LOCAs. As such, installation of the Shutdown seals will reduce the CDF from Seal LOCAs by about 98% (3.28E-05), which is a 'High' impact in Table 1-1.
- This correlates to a high reduction of risk based on the matrix and a corresponding medium ranking.

Installation of the Westinghouse RCP Shutdown Seals-

Importance Evaluation - Step 3a – Impact on Issue Risk (Qualitative)

Table 1-1 Matrix by Current Risk and Potential Impact					
UB is upper bound of the risk range; Mid is “mid-range” (0.3 times UB); LB is factor of 10 lower than UB					
Current Risk associated with Issue	Potential Impact of Action (Reduction in Risk)				
	None	Very Small/Minimal	Small	Medium	High
	0%	0 to 25%	25 to 50%	50% to 90%	>90%
Priority					
Green (VL) LB 1E-7	Very Low	Very Low	Very Low	Very Low	Very Low
Green (VL) Mid	Very Low	Very Low	Very Low	Very Low	Very Low
Green (VL) UB 1E-6	Very Low	Very Low	Very Low	Very Low	Very Low
White (L) LB	Very Low	Very Low	Very Low	Very Low	Very Low
White (L) Mid	Very Low	Very Low	Low	Low	Low
White (L) UB 1E-5	Very Low	Low	Low	Low	Low
Yellow (M) LB	Very Low	Low	Low	Low	Low
Yellow (M) Mid Pre-Mod	Very Low	Low	Medium	Medium	Medium Post-mod
Yellow (M) UB 1E-4	Very Low	Medium	Medium	Medium	Medium
Red (H) LB		Medium	Medium	Medium	Medium
Red (H) Mid		High	High	High	High
Red (H) UB 1E-3		High	High	High	High

- Robinson performed Pairwise comparisons within the Priority Groups
 - All Priority items ranked within the group
 - Comparisons between Groups Performed
 - Overall Panel Consensus Gained
- Recommendations
 - TSTF-523 Commitment Re-evaluated – Acted upon to Remove Commitment
 - Cancellation of Battery Upgrade – Acted upon to change to Replacement with like for like
 - Cancellation of 2 additional projects – Returned to Plant Health Committee

- Process is repeatable
 - Comparisons to Pilot Results on Similar Issues Demonstrated this
 - Structure Removes Emotion
 - Battery Replacement Showed Little Risk Improvement
 - Operator Actions Remedy Showed Risk Improvement.
 - Proposed Solutions may Change based on the Review
- Reliability Issues can have impact on Risk
 - Using the process, documented the impact on Risk
 - Communicated the Risk associated with Reliability Issues
- Collaborative Review brought Insights to Scoring
 - Experienced Plant Personnel Assured Robinson Unique Design was Considered.
 - Plant Uniqueness Considered
 - The Inter-disciplinary Review Identified Factors That had not Been Fully Considered Previously

- The Process Added Value In Man-hour, Dose and Expenditure:
 - Regulatory
 - Commitment Change on ECCS Voids
 - Reduction in Future Dose Received
 - Actions implemented with initial Generic Letter Response were Effective
 - Changed Solution on Byron Open Phase based on Screening
 - Reliability Mods
 - 3 Projects recommended for Cancellation
 - Non-Project Alternates were Equally Effective
- Structure to Compare Risk Significance with Reg Driven Projects to Station Driven Projects

We are Robinson.



PERFORMANCE
IMPROVEMENT

OPERATIONAL
FOCUS

WORK
MANAGEMENT

ENGAGED
WORKFORCE

RESOURCE
CAPACITY



Panel Discussion

Jim Miksa, Entergy

Sonja Myers, Duke Energy

Phil Lashley, FirstEnergy

John Grubb, Xcel Energy

Greg Johnson, Southern Nuclear

Jerry Loignon, SCANA

All issues are not created equal

- Current plant scheduling processes typically place a high priority on regulatory driven issues
 - Independent of its importance at site relative to other activities
- Tabletops and pilots demonstrated the strength and value of a straightforward and robust process that prioritizes plant safety
 - Identified issues of low relative importance receiving high priority on plant schedule (and vice versa)
- Examples:
 - Spent Fuel Pool Instrumentation
 - Palisades Incipient Detection
 - Robinson Battery Enhancement

Plant Design Affects Issue Importance

- A “generic” resolution schedule is often applied to generic issues without consideration of plant-specific design features that affect issue importance
- Example:
 - Open Phase Vulnerability

Reliability Attribute Provides Forward Look on Safety

- Reliability attribute provides nexus to safety for key systems, structures and components required by Tech Specs and monitored under ROP
- Allows prioritization of plant improvements driven by parts obsolescence and/or plant reliability
- Examples:
 - Hatch HPCI/RCIC control
 - Davis-Besse Control Rod Replacement EOL

Value Seen in Multi-disciplinary Panel

- Use of a highly experienced multi-disciplinary panel, guided by a structured process, is seen to be critical to process success
 - Process focusses discussion on key importance attributes
 - Risk insights (both positive and negative)
- Pilot Examples

Process is Robust and Repeatable

- Pilots evaluated 107 issues
 - 61 plant-initiated (plant improvement) activities
 - 46 driven by regulatory requirement or plant commitment
- Results showed process to be robust and repeatable
- Examples:
 - NFPA 805 modifications
 - Spent Fuel Pool Level Instrumentation

NPFA 805 Modifications

Importance and Priority Determinations

Desig.	Safety	Security	EP	RP	Reliability	Priority
PAL02	M	N	N	N	N	2
PAL03	M	N	N	N	N	2
ROB02	M	N	N	N	N	2
ROB03	M	N	N	N	N	2
ROB04	M	N	N	N	N	2
PI02	M	N	N	N	N	2
PI03	M	N	N	N	N	2
HAT01	- *	-	-	-	-	-

Desig.	Title
PAL02	Incipient Detection for Cable Spreading, electrical equipment room
PAL03	Electrical Coordination Modifications
ROB02	NFPA 805 - Incipient Detection
ROB03	NFPA 805 - Suppression and detection modification
ROB04	NFPA 805 - Electrical Coordination
PI02	NFPA 805 – Hot Shutdown Panel
PI03	NFPA 805 - Incipient Fire Detection
HAT01	NFPA 805 – All changes

M – Medium, N – None * - Issue too broadly defined for assessment

Spent Fuel Pool Level Instrumentation

Importance and Priority Determinations

Desig.	Safety	Security	EP	RP	Reliability	Priority
PAL12	VL	N	N	N	N	4
SUM06	VL	N	N	N	N	4
DB17	VL	N	N	N	N	4
HAT11	VL	N	N	M	N	3

Desig.	Title
PAL12	Reliable Spent Fuel Pool Instrumentation Installation
SUM06	SFP Level Indication
DB17	Flex Spent Fuel Pool Level Modification
HAT11	Reliable Spent Fuel Pool Instrumentation

M – Medium, VL – Very Low, N – None

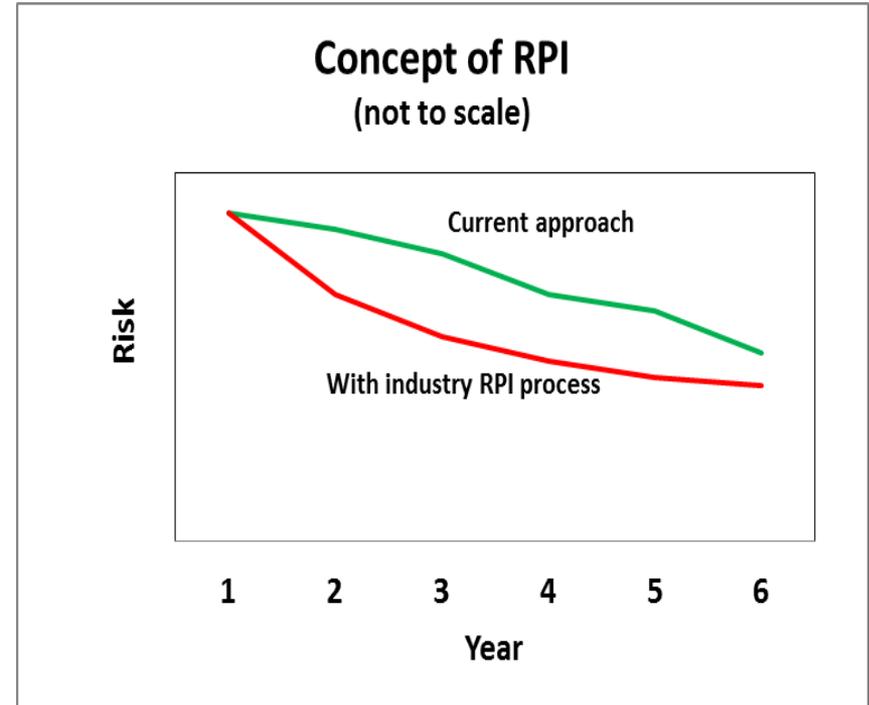
Results

- Value seen in viewing varied projects through common risk-informed lens
- Pilots identified recommended changes to schedule/scope for both regulatory and plant-initiated activities

Robinson	Hatch	Davis-Besse
<ul style="list-style-type: none">• Open Phase Initiative (Schedule Delay)• Gas Accumulation Tech Spec (Scope Change)• GSI-191 (Potential Scope/Schedule Change)• Battery Upgrade (Termination)	<ul style="list-style-type: none">• Open Phase Initiative (Schedule Delay)• Degraded Grid Transformers (Schedule Delay)	<ul style="list-style-type: none">• SFP Level Instrumentation (No change, too far advanced)

Value Proposition of Prioritization

- Prioritization and associated scheduling actions allows plants to implement sooner some key plant improvements that have languished due to competing regulatory priorities
- Results in faster safety improvements
- A **WIN – WIN** Proposition



Next Steps

- November 4 meeting with NRC staff to discuss pilot results
- Formal issuance of NEI 14-10, *Guidelines for Prioritization and Scheduling Implementation*
- Continuing discussions with NRC staff on application of prioritization to emerging issues and rulemakings
- Inclusion in March 2015 SECY paper:
 - “Endorsement” of NEI 14-10 as acceptable supporting basis for schedule changes based on importance at plant site.
 - Incorporation of safety focused prioritization in discussion and planning for new emerging issues
 - Use of safety focused prioritization in planning and scheduling of rulemakings

Cumulative Effects of Regulation / Risk Prioritization Initiative (CER) / (RPI)

ACRS Meeting Slides

November 3, 2014



Outline

- Background
- What is CER?
- NRC Actions to Address CER
- CER Relationship to RPI
- CER Key Messages
- Staff Perspectives
- RPI – Overview and Observations
- Next Steps
- References

Background

- CER began in late 2009 with Commission SRM (M091208), “Enhancements to Emergency Preparedness Regulations,” January 13, 2010:
 - “For this and future rulemakings the staff should consider if the schedule for implementing those new regulations should be influenced by the aggregate impact of new regulations(s) and others that may already be scheduled for implementation.”
- SECY-11-0032 “Consideration of the Cumulative Effects of Regulation in the Rulemaking Process”
 - Described rulemaking process enhancements to implement CER
 - SRM-SECY-11-0032 approved the CER processes and provided further direction in SRM (which led to SECY-12-0137)

Background Cont'd

- SECY-12-0137 “Implementation of the Cumulative Effects of Regulation Process Changes”
 - Provided update on CER implementation
 - Current focus is addressing SRM-SECY-12-0137(later slide)
- COMSECY-14-0014 “Cumulative Effects of Regulation and Risk Prioritization Initiative: Update on Recent Activities and Recommendations for Path Forward”
 - Merged CER and Risk Prioritization Initiative (RPI)
 - Deliverables have been merged in response to SRM-COMSECY-14-0014

What is CER?

- **Describes the challenges** that licensees, or other impacted entities (such as State partners) face while **implementing new regulatory positions, programs, or requirements**
- Is an organizational effectiveness challenge that results from a licensee or impacted entity implementing a number of complex regulatory positions, programs or requirements within **a limited implementation period and with available resources**
- Can potentially **distract** licensee or entity staff **from executing other primary duties that ensure safety or security**

NRC Actions to Address CER

- Rulemaking process modifications:
 - Interact with external stakeholders early in the rulemaking process
 - Publish guidance concurrently with proposed / final rules
 - Engage external stakeholders on CER impacts of proposed rules
 - Additional public interaction during final rule implementation
- NRC staff is considering expansion to other regulatory areas

CER Relationship to Risk Prioritization Initiative (RPI)

- RPI is an initiative to explore the idea of enhancing safety by applying probabilistic risk assessment (PRA) to determine the risk significance of current and emerging reactor issues in an integrated manner and on a plant-specific basis
- CER and RPI deliverables were merged in COMSECY-14-0014
- If approved, RPI could address CER concerns for power reactor licensees

CER Key Messages

- Resolution of adequate protection issues takes priority over CER concerns.
- The NRC has already implemented several rulemaking procedures that improve consideration of CER, including providing increased stakeholder interactions, publishing supporting guidance concurrent with rules, requesting specific comment on CER in proposed rules, and developing informed implementation timeframes.
- The staff's efforts to expand consideration of CER are being undertaken in conjunction with actions directed by the Commission, including SRM-COMGEA-12-001/COMWDM-12-002

Staff Perspective: Benefits of CER Consideration

- Potential Benefits:
 - Increases interactions with external stakeholders
 - Improves quality of regulatory analyses by seeking cost information early in process
 - Can inform implementation schedules and limit unintended consequences
 - Provides stability by issuing guidance along with requirements
- Information gathered can be used to evaluate regulatory actions necessary to address safety or security issues

Risk Prioritization Initiative (RPI)

NRR/DRA



Overview

From SRM on RPI:

“The Commission has approved an initiative to further explore the idea of enhancing safety by applying probabilistic risk assessment (PRA) to determine the risk significance of current and emerging reactor issues in an integrated manner and on a plant-specific basis.”

- ✓ Request NRC staff to develop a Notation Vote Paper
- ✓ Explore ideas on a process to incentivize Level 1, 2 PRA use
- ✓ Consider rulemaking options (voluntary) and resource estimates
- ✓ Address issue management (i.e., should not perpetually defer)
- ✓ Consider how inspection and compliance issues should be treated
- ✓ Should be risk-informed, i.e., follow NRC risk framework

Overview (Cont'd)

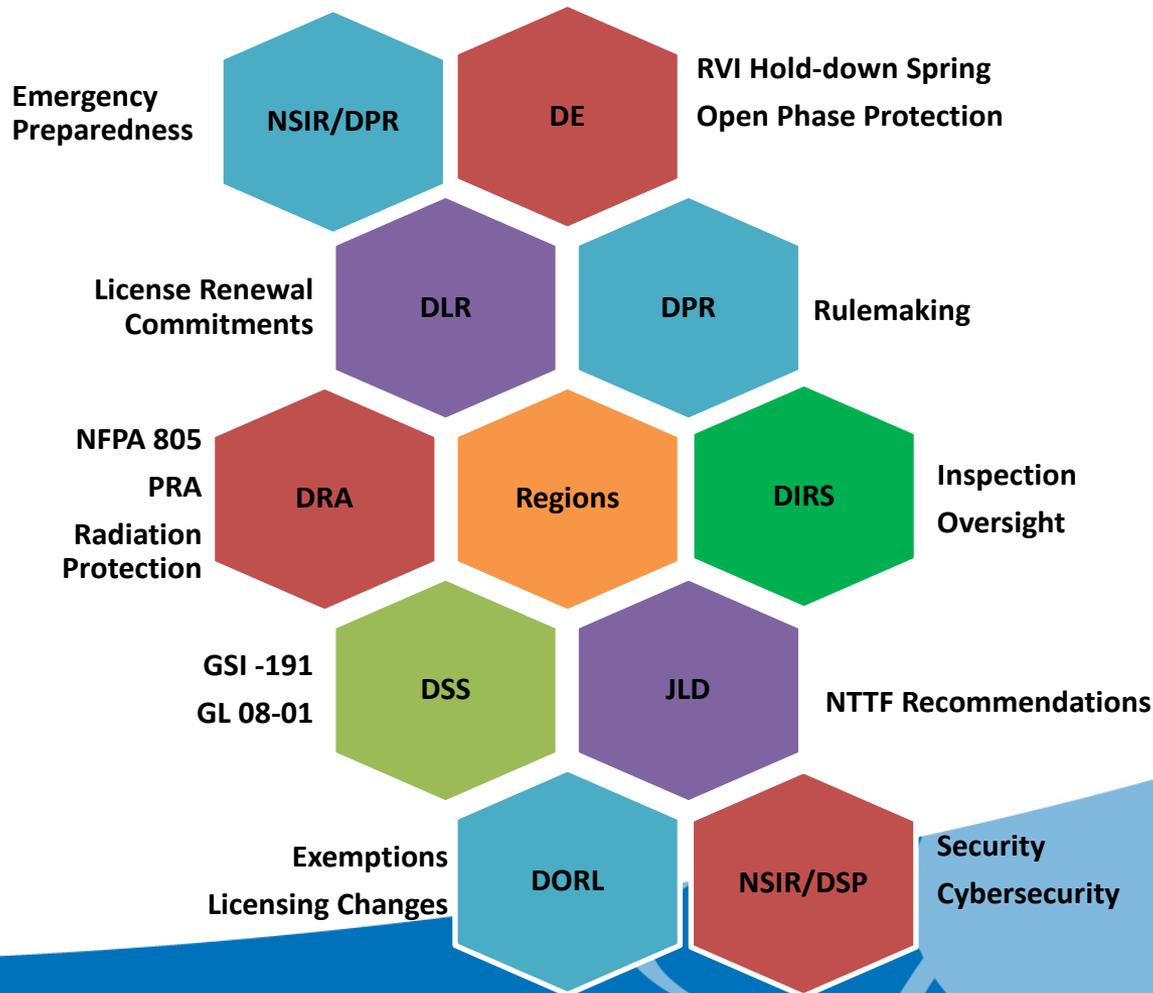
Nuclear safety is advanced when licensees and the staff focus their time, attention, and resources on the issues of greater safety significance at each plant – i.e. addressing the most safety significant issues first.

Overview (Cont'd)

- Public/Industry Interactions:
 - Draft Guidance developed by NEI
 - Generic and Plant-specific Tabletops
 - March 2014 RIC Technical Session
- COMSECY to the Commission to merge CER & RPI
- Demonstration Pilots

Demonstration Pilots

- Demonstration Pilots address issues across Offices and Divisions (Emergency Preparedness, Radiation Protection, & Security)



Observations

High-Level Objectives:

- Evaluate the extent to which the prioritization process is reliable, repeatable, and transparent
- Assess the level of incentive to develop PRA
- Critically evaluate the licensee's use of deferral and elimination processes for regulatory activities of low risk and safety significance
- Consider how the process informs (or not) an eventual discussion on how corrective actions for findings, violations, and degraded or nonconforming conditions adverse to quality will be treated as part of the risk prioritization initiative.

Observations (Cont'd)

High-Level Objectives:

- Evaluate how regulatory and non-regulatory activities are treated and the implications of the integrated assessment of priority of all items in the aggregation process.
- Obtain the most recent NEI guidance on the Risk Prioritization Initiative evaluate its use
- Assess the ability of the RPI under review to appropriately prioritize initiatives from multiple disciplines (e.g., RP, Security, and EP).
- Observe, note, and collect any items of importance for communication in an eventual full briefing to the ACRS in advance of the transmission of the March 2015 paper to the Commission.

Next Steps

- Addressing SRM-SECY-12-0137 and SRM-COMSECY-14-0014
 - Continue to enhance existing processes
 - Continue to explore means to expand/address CER for broader range of regulatory activities
 - Roll-up of lessons-learned from above efforts will be folded into March 2015 paper
 - Develop and propose options for RPI
 - Commission requested that the staff brief ACRS ahead of March 2015 paper

References

- SECY-11-0032, “Consideration of the Cumulative Effects of Regulation in the Rulemaking Process” (March 2, 2011; ML110190027)
- SRM-SECY-11-0032 (October 11, 2011; ML112840466)
- SECY-12-0137 “Implementation of the Cumulative Effects of Regulation Process Changes” (October 5, 2012; ML12223A162)
- SRM-SECY-12-0137 (March 12, 2013; ML13071A635)
- SRM to COMGEA-12-0001/COMWDM-12-0002 – “Proposed Initiative To Improve Nuclear Safety And Regulatory Efficiency,” dated February 6, 2013 (ADAMS Accession No. ML13037A541)
- COMSECY-14-0014 – “Cumulative Effects of Regulation and Risk Prioritization Initiative: Update on Recent Activities and Recommendations for Path Forward,” dated April 9, 2014 (ML14086A729)
- SRM-COMSECY-14-0014 (July 18, 2014; ML14199A187)
- Staff’s Plan to Participate In Demonstration Pilots (July 20, 2014; ML14169A167)
- Information about RPI: www.regulations.gov (Docket ID: NRC-2013-0064)