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 Open Session Meeting

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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

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NUCLEAR REGULATORY COMMISSION

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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

(ACRS)

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RELIABILITY AND PROBABILISTIC RISK ASSESSMENT (PRA)

SUBCOMMITTEE

+ + + + +

OPEN SESSION

+ + + + +

WEDNESDAY

SEPTEMBER 7, 2016

+ + + + +

ROCKVILLE, MARYLAND

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The Subcommittee met at the Nuclear
Regulatory Commission, Two White Flint North, Room
T2B1, 11545 Rockville Pike, at 1:03 p.m., John W.
Stetkar, Chairman, presiding.

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COMMITTEE MEMBERS:

JOHN W. STETKAR, Subcommittee Chairman

DENNIS C. BLEY, ACRS Chairman

RONALD G. BALLINGER, Member

MICHAEL L. CORRADINI, Member

WALTER L. KIRCHNER, Member

JOSE A. MARCH-LEUBA, Member

DANA A. POWERS, Member

JOY REMPE, Member

GORDON R. SKILLMAN, Member

MATTHEW W. SUNSERI, Member

DESIGNATED FEDERAL OFFICIAL:

JOHN LAI

ALSO PRESENT:

VICTORIA ANDERSON, NEI

ROBERT BEMENT, Arizona Public Service

WILLIAM DEAN, NRR

STEPHEN DINSMORE, NRR

ADRIENNE DRIVER, NRR

MARY DROUIN, RES

JOSEPH GIITTER, NRR

DONNIE HARRISON, NRO

J.S. HYSLOP, NRR

MICHAEL MONTECALVO, NRR

CANDACE PFEFFERKORN, NRR

STACEY ROSENBERG, NRR

MICHAEL TSCHILTZ, NEI

DON VANOVER, Jensen-Hughes

ANDREA D. VEIL, Executive Director, ACRS

SUNIL WEERAKKODY, NRR

TOM ZACHARIAH, NEI

*Present via telephone

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P R O C E E D I N G S

1:03 p.m.

1
2
3 CHAIRMAN STETKAR: The meeting will now
4 come to order. This is a meeting of the
5 Reliability and PRA Subcommittee, and I'm John
6 Stetkar, Chairman of the Subcommittee meeting.
7 Members in attendance are Ron Ballinger, Dick
8 Skillman, Mike Corradini. I believe we'll be
9 joined by Dennis Bley and Joy Rempe. John Lai of
10 the ACRS staff is the Designated Federal Official
11 for the meeting.

12 The Subcommittee will be briefed by the
13 staff and the industry on various activities
14 directed by the risk-informed steering committees.
15 That is a plural. There is one for the industry
16 and one for the staff. There will be a phone
17 bridge line. To preclude the interruption of the
18 meeting, the phone will be placed in a listen-in
19 mode during presentations and committee
20 discussions.

21 We have received no written comments or
22 requests for time to make oral statements from
23 members of the public regarding today's meetings,
24 and the entire meeting will be open to public
25 attendance. The Subcommittee will gather

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1 information, analyze relevant issues and facts and
2 formulate proposed positions and actions as
3 appropriate for deliberation by the full Committee.

4 The rules for participation in today's
5 meeting have been announced as part of the notice
6 of this meeting previously published in the *Federal*
7 *Register*. A transcript of the meeting is being
8 kept and will be made available as stated in the
9 *Federal Register* notice.

10 Therefore, we request that participants
11 in this meeting use the microphones located
12 throughout the meeting room when addressing the
13 Subcommittee. Participants should first identify
14 themselves and speak with sufficient and clarity
15 and volume so that they may be readily heard.

16 For those of you up front, if you don't
17 remember, when you speak there's a little thing
18 that says "push" down at the bottom. A little
19 green light comes on. Make sure the light is on.
20 When you're not speaking please make sure the light
21 is off because the rustling papers get picked up.
22 The microphones are really sensitive.

23 I'll also remind everybody in the room
24 to check all of your various and sundry
25 communications devices and make sure that they're

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1 off. We'll now proceed with the meeting. I don't
2 know whether -- Joe, do you want to say anything as
3 an introduction or will be --

4 MR. GIITTER: I don't have any opening
5 remarks. Thanks.

6 CHAIRMAN STETKAR: Okay, and I guess
7 we'll start with Bob Bement of Arizona Public
8 Service. Bob?

9 MR. BEMENT: Thank you. Good
10 afternoon. So I get to be here as Executive Vice
11 President of Palo Verde and also I am a member of
12 the Risk-Informed Steering Committee. The Risk-
13 Informed Steering Committee is a group with the NRC
14 and the industry working together to efficiently
15 and effectively risk-informed decision-making and
16 move us forward as an industry.

17 We have periodic meetings, good
18 attendance. Communication is one of the things
19 that's important in helping us move both the NRC
20 and the industry forward in risk-informed decision-
21 making together. Leadership is also a key. Bill
22 Dean from the NRC provides good, strong leadership
23 and Danny Bost from Southern Nuclear, the chief
24 nuclear officer, provides good leadership.

25 I have a lot. I want to talk about a

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1 lot of slides, but I will keep on time. I just
2 want to talk a little bit about what it looks like
3 at a site now when you talk about risk, and so I'm
4 going to talk about Palo Verde, because that's the
5 site that I am at on a daily basis, and I believe
6 in risk-informed decision-making and as a site we
7 are moving forward with the industry.

8 This is a just a couple of books that
9 we use, leadership model, standards and
10 expectations. Both of them we talk from on a daily
11 basis. Our meetings start in the morning, where
12 every group, whether it's Human Resources, the
13 Admin, Ops, Maintenance, Engineering, we start
14 talking about plant status and safety in our
15 morning meeting, and in that we talk about the
16 probabilistic risk assessment profiles of that day
17 and of the week.

18 And then at the beginning of every
19 meeting during the day, we talk about any changes
20 to plant status or safety, including changes to
21 risk. When we talk about changes to risk, we're
22 talking about changes in green, because we very
23 seldom get in the yellow anymore as a site, as an
24 industry.

25 So this is a just a graph. It's in our

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1 leadership model. It's up on posters across the
2 site and what I like about it it's one page. We
3 can bring people up to speed on a lot of stuff and
4 they can talk about it. On the left, contribution
5 to core damage frequency. You look at it, fire is
6 65 percent of the core damage frequency
7 contributors.

8 The next column in the middle talks
9 about risk reduction with perfect performance. So
10 it shows that Ops, if they implement the remote
11 shutdown during a control room fire perfectly, it
12 reduces risk 26 percent. On the right is the 60
13 thing that we talk about all the time. The risk
14 management action levels are your green, yellow,
15 orange and red, and it starts from the baseline
16 risk and for us that's 2E to the minus 6th.

17 If you take the equipment out of
18 service it's listed. It shows what color you go to
19 and what the multiplier is. And then down on the
20 left, it talks about the importance of what systems
21 are really important to helping us prevent core
22 damage, with aux feedwater at Palo Verde being that
23 key system at 44 percent.

24 MEMBER SKILLMAN: Bob, back a slide
25 please.

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1 MR. BEMENT: Yes sir.

2 MEMBER SKILLMAN: And back one more.
3 You talked about meetings daily. At what level are
4 these meetings conducted, and here's the real
5 question. When your maintenance teams are getting
6 ready to execute, is there a discussion where those
7 individuals understand the risk consequence of
8 screwing up the work that their hands are beginning
9 to touch?

10 MR. BEMENT: And is a great question.
11 When I started back in '81, the answer was no. But
12 now, you know, they are talking from this chart
13 here, and they have that out, and they're actually
14 talking about it out of this book. So they talk
15 about okay, this system contributes this much to
16 the safety. This component that we're working on.

17 So not only when they're working on it,
18 but how important it is to make sure when it's
19 restored that it operates the way we expect it to
20 operate.

21 MEMBER SKILLMAN: Yes sir. Thank you.

22 MR. BEMENT: Thank you. So from 50,000
23 feet, this is Palo Verde. The blue shows what
24 we've already had approved from the Nuclear
25 Regulatory Commission. The red shows what we've

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1 submitted or are going to submit.

2 Then I want to talk about a couple of
3 them. 5 Bravo, which is the surveillance frequency
4 relocation, Palo Verde, we're a member of the Stars
5 Alliance, which includes Diablo Canyon, Calloway
6 and Wolfe Creek, and we are going through that
7 initiative together and we created what we called a
8 STRIDE, the Surveillance Test Risk-Informed
9 Documented Evaluations, where we're sharing that
10 back and forth about we evaluated this and we can
11 move the frequency to this frequency.

12 And good challenges. One of the things
13 we review in that is are you going to change risk
14 color when you go from 18 months to 18 months
15 staggered, for example, and if you do, what do you
16 need to do prevent change in risk colors.

17 Down on the bottom you see that we
18 estimate a 5,000 man hours a year saving
19 implemented the STRIDEs that have been approved
20 above. And just talk -- there's several of them.
21 Most beneficial STRIDEs. The only one I'm going to
22 talk about the diesel generator and integrated
23 Safeguards loss of offsite power.

24 That's gone from an 18 month to an 18
25 month staggered. So we do one train at the

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1 beginning of every outage. That is a test that
2 puts the organization through a lot of -- a lot of
3 movement with starting diesel, starting components.
4 So just doing one train every outage has been very
5 beneficial to us.

6 So I want to move on to 4 Bravo. So 4
7 Bravo we've submitted, and I just want to talk
8 about on this slide operational benefits. The
9 increased flexibility in scheduling maintenance,
10 shorter list, complex refueling outages. I'm not
11 sure that people will get to see, but when you can
12 move a diesel generator from an outage to online,
13 it goes from being one of 1,000 tasks being
14 accomplished to the task.

15 And so when we do -- we now do diesels
16 online and we man our outage control center and we
17 have eight o'clock and 20 hundred calls with the
18 executives all the way down through the maintenance
19 organization. You get to put your A game
20 maintenance people on that maintenance.

21 It also allows you to focus our A game
22 maintenance people during a refueling outage on the
23 other tasks, and as you're using less contractors
24 to do the maintenance on your critical equipment.

25 MEMBER SKILLMAN: So Bob, when you made

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1 that change, what you didn't say is you took the
2 diesel out of the outage and you made a special,
3 excuse me, a refueling outage and you put a diesel
4 on an outage of its own?

5 MR. BEMENT: That's correct.

6 MEMBER SKILLMAN: Before you did that,
7 you must have evaluated the risk consequence of
8 that change?

9 MR. BEMENT: Absolutely.

10 MEMBER SKILLMAN: What did you found?

11 MR. BEMENT: Well, the risk actually
12 went down moving it to online from the outage.

13 MEMBER SKILLMAN: Okay, thank you.

14 MR. BEMENT: And then the next
15 submittal for Palo Verde is risk-informed --

16 MEMBER CORRADINI: Can I just --

17 MR. BEMENT: I'm sorry.

18 MEMBER CORRADINI: Since I'm not a risk
19 person, so every time I go to a Risk Subcommittee I
20 learn something. So why, why did it go down?

21 MR. BEMENT: Well, if you look at the
22 plant configuration during an outage, you're in
23 abnormal configuration with less components
24 available to you. So taking a diesel out of
25 service while you're doing maintenance on a whole

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1 train makes the risk go up compared to when you do
2 it online, and everything else is stable.

3 Your switchyard is stable. You're not
4 doing work on breakers out there, and the increase
5 of focus on it. Does that help? I appreciate the
6 question. So and I'm with you on the risk. I
7 learn something every time I get engaged with it as
8 a site vice president.

9 MEMBER CORRADINI: So I'm sure I'll be
10 told to stop eventually by the chairman. So what
11 was the delta-change in risk and how sure are you
12 that the delta change is real?

13 MR. BEMENT: I can't tell you the risk.
14 A great question, and but I'm sure it's real. I'm
15 sure based on what we -- how we evaluate risk, our
16 PRA model is -- I'm very confident. So 10 C.F.R.
17 50.69 is our next big submittal, and there's a
18 couple of neat things about this. One you go
19 through and you categorize all your equipment,
20 safety-related and non-safety related into high
21 risk and low risk.

22 So I'll start with Risk Category 2, the
23 blue box. That is we're going to find that some of
24 our non-safety related equipment is high risk
25 significance, and we'll treat it different than

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1 we're treating it right now.

2 Then we'll also find with a lot of the
3 safety-related it will end up being low risk
4 significance, which then kicks it into the next
5 graph, where it can be exempted from the special
6 treatment requirements that you see, such as
7 maintenance rule, in-service inspection, in-service
8 testing, the quality requirements for procurement
9 under 50 Appendix Bravo.

10 So it allows us as the utility to look
11 at, based on operating experience, what we want to
12 do inside of those 12 special treatment
13 requirements. And then just talking about on the
14 benefits, I'll just focus on operational benefits.
15 One, it reduces the regulatory burden on low
16 safety-significant components.

17 It streamlines our procurement process
18 and then less outage burden for regulatory testing
19 and inspection. Just you know, for me the testing
20 and inspection, we've got to test the equipment
21 often enough, but not so often that it's taking my
22 maintenance people or my operators from the
23 preventive maintenance, corrective maintenance and
24 modifications during an outage.

25 50.69 will be part of delivering the

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1 Nuclear Promise initiative that the industry is
2 going through, and I am the executive sponsor. Tom
3 Zachariah next to me is the brains behind how we're
4 moving that forward and bringing the industry
5 together, so we can work with Joe and his staff and
6 give him good submittals that can minimize the
7 approval time.

8 Next slide is a passion of mine, and in
9 that as we -- as we've implemented FLEX for the
10 Fukushima mod, now we're pushing how do we use FLEX
11 to reduce risk at the nuclear plant 365 days a
12 year, and without increasing the burden of that
13 equipment. And so one of the things that we want
14 to do is we want to use FLEX equipment for all
15 beyond-design basis conditions, and it not be in
16 the maintenance rule scope.

17 You can see the four things that we've
18 got to look at, to make sure that we don't hit one
19 of those. But when we implemented FLEX, we worked
20 with JLD or the Japanese Lessons Learned Division
21 of the NRC, and we came up with templates, PM
22 templates, EPRI templates that EPRI generated, and
23 we agreed between the NRC and us that those
24 templates implemented across the industry were what
25 we needed to make sure that equipment is going to

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1 be operable when we needed it.

2 And so what I'm looking at or what
3 we're looking at is making sure that we can use
4 those same templates across the industry as we use
5 the equipment in beyond design basis events or for
6 beyond design basis defense-in-depth.

7 So we've -- industry has proposed
8 change to NUMARC 93-01. We're working with the
9 Nuclear Regulatory Commission to increase the
10 flexibility of using FLEX support guidelines in the
11 emergency operating procedures, to add defense-in-
12 depth.

13 MEMBER REMPE: Excuse me. I have a lot
14 of questions about that, this topic that I'll bring
15 up to other people today. But I wanted to ask you,
16 because you're at the plant. Could you talk a
17 little bit about how you estimate the time required
18 for deploying that equipment, and how you ensure
19 that time is appropriate with you get new staff
20 coming on board? I mean how often do you take it
21 out and deploy it and put them on a stop watch?

22 MR. BEMENT: So a great question.
23 Every time we deploy it, we get better data and we
24 improve that process. So for me, I just hooked up
25 the 4160 volt diesels to the connection box, which

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1 isn't hooking it up to the plant. But it's hooking
2 it up to the connection box where we hook it up,
3 tied it down for the seismic restraints.

4 We got that timed. We videoed it.
5 We're taking the videos, incorporating those into
6 the training. So we continue to improve that
7 process across the industry every time we hook the
8 equipment up. So that the times, you know, we set
9 those times based on how long it took us going
10 through the mockup process, and then we continued
11 to hone those times based on experience.

12 MEMBER REMPE: So once a year? Once
13 every six months? How often do you make sure that
14 every person on your staff that needs -- that would
15 be responsible for doing it can do it within that
16 time?

17 MR. BEMENT: I don't know the exact
18 time frame, but it's not going to be that often.
19 It's not going to be once a year. What we have to
20 balance is, you know, what you're talking about is
21 the timing for if you have a Fukushima-like event,
22 an external event.

23 MEMBER REMPE: But now you're going to
24 try and use it for --

25 MR. BEMENT: Now I connect it off

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1 critical path. I connect it before we're going to
2 take a diesel out of service. So it's connected,
3 so the timing isn't as important. Am I
4 understanding the question?

5 MEMBER REMPE: Okay. I guess I thought
6 that some folks were going to try and use it for
7 other events, to get credit for reducing the plant
8 risk for -- and if you are going to do that -- and
9 you're right. If it's for a non-critical event,
10 you've got all the time in the world. But if
11 you're going to do it for other types of events
12 where you need to have credit for a particular
13 time, I'm just curious on how often that they are
14 going to be tested for doing it, and to ensure that
15 you can do it within that time frame?

16 MEMBER CORRADINI: I think the reason
17 she's asking is the same reason that I was going to
18 ask in a similar vein. There's an example
19 somewhere from industry in one of their white
20 papers that I was going to go to. But I think
21 that's where Joy's going to.

22 MEMBER REMPE: Absolutely.

23 MEMBER CORRADINI: It's not something
24 you do in anticipation of some planned action.
25 It's rather something that's an unexpected event,

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1 an accident, and now you say well if I have the
2 opportunity to FLEX, I can use it and that reduces
3 the risk some delta. I'm not --

4 MEMBER REMPE: And there was a lot of
5 discussion about prioritization, but when we
6 brought up this question about how often do you
7 test folks on it in other subcommittee meetings,
8 it's usually the staff or with all due respect an
9 NEI person who says "well, I don't know. I'm not
10 at the plant."

11 Here you are from the plant and I am
12 curious about how often you do test people for
13 using this FLEX --

14 MR. BEMENT: And I don't have the
15 frequency in my head of how often we test them. So
16 I mean as an industry, and INPO is leading us with
17 that template of how often we're going to train
18 people, what is that going to look like? Is it
19 going to be a scenario, a training scenario or run
20 it as a drill, where they have to go and the group
21 that's on that day goes and implements or moves the
22 equipment.

23 MEMBER REMPE: So the answer is it's
24 not been decided yet?

25 MR. BEMENT: The answer is I don't know

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1 it sitting in front of you.

2 MEMBER REMPE: Okay, thank you.

3 MEMBER SKILLMAN: Bob, let me explore
4 this a little further. In the late 80's, plants
5 were tripping eight to ten times per year.

6 MR. BEMENT: I was in the control room.

7 MEMBER SKILLMAN: Okay, and a lot of us
8 around the table saw that.

9 MR. BEMENT: Right.

10 MEMBER SKILLMAN: And at the time 50.65
11 was the proposed maintenance rule and industry just
12 went wild, and the basic text was the NRC isn't
13 going to tell us how to maintain the plant. That's
14 our job. But in the course of time, the maturation
15 of the maintenance rule has probably done more for
16 safety than any other single piece of legislation.
17 It really has.

18 MR. BEMENT: Okay.

19 MEMBER SKILLMAN: And from the
20 maintenance drill we get system health reports, A-
21 1s and A-2s. People that came from the plant know
22 what red means. We know what consecutive red
23 means, and there's a lot of attention at a very
24 high executive level to get systems to A-2, bring
25 them back to full health, and the trip rate is once

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1 each two years.

2 Now that is the combination of an awful
3 lot of other issues, but it certainly shows that
4 the equipment is being well-maintained. So here is
5 a system, a maintenance system that's up and
6 running, has high visibility and high executive
7 buy-in across the fleet. Here we have new
8 equipment, brand new spanking new equipment and
9 we're saying this will really help us in the middle
10 of the night for an unexpected event.

11 Now why would a smart executive say "I
12 probably won't do everything with my FLEX equipment
13 that I do under the maintenance rule, but I'm going
14 to make sure it's good to go, and I'm going to make
15 sure I'm using the same processes that are already
16 tried and test under 50.65."

17 So why isn't there almost a logical
18 acceptance of at least some part of the maintenance
19 rule in terms of periodic testing for the FLEX
20 equipment, because you're counting on it for that
21 surprise event?

22 MR. BEMENT: I know, and it's a great
23 question. I believe if we are implementing FLEX
24 equipment back when we implemented the maintenance
25 rule, it would be a perfect solution. But I also

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1 believe that over the years, if you're talking
2 about a plant, my Plant Health Committee meetings
3 and other meetings aren't focused on the
4 maintenance rule.

5 If we hit maintenance rule, as an
6 organization we have failed, and between our
7 implementing of the work management process, our
8 implementing of low level trending, our corrective
9 action program, the maintenance rule for our
10 critical systems, you've seen -- you've probably
11 seen the numbers.

12 I mean the number of times people go
13 into the maintenance rule are less and less. So
14 what I would tell you is there's a couple of
15 things. One is we're implementing this industry-
16 wide with all that data of the PMs going into a
17 common template, not just a site template. So this
18 is something we don't have for the individual
19 equipment, whether you're a CE unit like me or
20 Westinghouse or BMW.

21 So the data set that we're getting is
22 different and we're getting it -- we're getting it
23 different, and it's going into the corrective
24 action program, which I think you would agree the
25 status of the corrective action program now

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1 compared to when we implemented the maintenance
2 rule is a totally different status.

3 So it just becomes how much is good
4 enough, and if we have, start having failures with
5 the equipment, the corrective action program has to
6 kick it into a review process. So to me, the
7 maintenance rule adds more than we need with this.
8 But we start having failures, I agree with you.

9 MEMBER CORRADINI: Thank you, Bob.

10 MR. BEMENT: Thank you. And my last
11 slide, I'm a huge proponent of risk-informed
12 initiatives, whether it's tech specs for 50.69, and
13 I think it allows us as an industry, ACRS, NRC to
14 focus on the significant areas, significant risk
15 and I also believe optimizing the use of FLEX
16 equipment reduces risk and what I'll tell you is
17 you look, you go to my simulator scenarios now and
18 you'll hear the operator says we want to look at
19 implement or bringing out the 4160 volt diesels or
20 the high pressure injection pumps or the secondary
21 injection pumps.

22 It has the operators, where when I
23 started, we just were in the plant like tech specs.
24 Then we invented risk management action levels, and
25 so it was tech specs and risk management action

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1 level. Now it's tech specs, risk management action
2 levels and how do you use the FLEX equipment to
3 give me another layer of defense when something's
4 going on or we're taking a piece of equipment out?

5 I believe it's critical for delivering
6 the Nuclear Promise, and the reason I believe this
7 is critical is because it helps improve the safety
8 and reduce the cost for the present fleet out
9 there, and then for risk decision-making to be
10 successful, we've all got to be engaged and that's
11 the Nuclear Regulatory Commission and industry and
12 y'all working together to make that efficient and
13 effective. With that, I appreciate your time.

14 CHAIRMAN STETKAR: Thank you very much,
15 Bob. A couple of administrative points. For the
16 record, Jose March-Leuba is trying -- this is an
17 ACRS member. The second thing is I need to remind
18 the subcommittee, we do need to hold to this agenda
19 pretty closely. We have another meeting scheduled
20 after this one and we have a little bit of
21 flexibility one way or the other.

22 But we can't afford to run too long on
23 this one. I'm not trying to squelch discussion,
24 but just be aware of the agenda. We have a lot of
25 stuff to cover today, and with that, Tom, I guess

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1 you're up next.

2 MR. ZACHARIAH: All right, sounds good.
3 All right. So I'm here to brief you on the
4 activities of the FLEX and risk-informed decision-
5 making task force and the industry. If you're
6 trying to figure out how to pronounce that acronym
7 it's FRIDM. It's the FRIDM Task Force.

8 (Laughter.)

9 MR. ZACHARIAH: You're welcome. So by
10 the way what we're going to be talking about --

11 CHAIRMAN STETKAR: This is opposed to
12 FRY-DEM.

13 MR. ZACHARIAH: Exactly, exactly.
14 We're going to be focusing -- there's a few
15 missions or objectives that this task force has,
16 but we're going to be focusing on crediting
17 portable equipment and mitigating strategies in
18 risk-informed decision-making, and Don's going to -
19 - here is going to help support me.

20 So when we started the FRIDM task
21 force, we were given the objective to maximize the
22 benefit of the industry's investment into FLEX
23 equipment. So we kind of took that and we ran with
24 it, and we kind of developed these three tenets of
25 what our task force was looking to do.

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1 One was to maximize the areas of
2 credit. So you know, beyond the order, beyond
3 Fukushima proposed --I'm sorry, the mitigating
4 strategies, proposed rule, this equipment and these
5 strategies inherently make the plant safer. So how
6 do we reflect that operational and regulatory
7 programs?

8 The next was what the equipment was
9 used for was a very stylized event around
10 Fukushima. But we could use this equipment for
11 other things. So wanted to maximize the
12 flexibility of where this equipment is used in
13 plant operations.

14 Lastly, we didn't want to just talk
15 about FLEX. FLEX is one of the biggest
16 implementation of portable equipment at sites, but
17 it wasn't first. B5B is the example, and it won't
18 be the last. So plants use rental equipment,
19 portable equipment all the time, so we want to be
20 all-inclusive.

21 So our strategy was to start with NEI-
22 1206, which is a governing document for FLEX and
23 the mitigating strategies rule and order, and add
24 two more documents. One was NEI 16-06. This is
25 where you actually credit these mitigating

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1 strategies and risk-informed decision-making. How
2 do we translate what we've done in the FLEX world,
3 in the mitigating strategies world into these
4 different processes.

5 We had recently developed and issued
6 that document, NEI 16-06, which we'll talk about
7 more in detail. The other document we're
8 developing, we've just started in the last couple
9 of weeks is NEI 16-08. This is really optimizing
10 the use of the portable equipment.

11 So now we have all this equipment on
12 site. What kind of things can we pre-deploy it
13 for, to reduce risk or improve operational --

14 CHAIRMAN STETKAR: Tom, you're going to
15 have to kind of help me out a bit.

16 MR. ZACHARIAH: Sure.

17 CHAIRMAN STETKAR: For the purpose of
18 this particular subcommittee meeting, we received
19 two NEI white papers, neither of which had any
20 identifying numbers on them whatsoever, one of
21 which has a Rev 1 Charlie. How do those relate to
22 what you have on this slide?

23 MR. ZACHARIAH: So I'll get into that.

24 CHAIRMAN STETKAR: Oh okay.

25 MR. ZACHARIAH: But more specifically,

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1 there is -- in NEI 16-06 there is a three tiered
2 approach. The first two tiers --

3 CHAIRMAN STETKAR: I don't care what's
4 in NEI 16-06. I'm trying to figure out how does
5 NEI 16-06 relate to anything that we received for
6 this subcommittee meeting?

7 MR. ZACHARIAH: Sure. So those two
8 tiers of NEI 16-06 are those white papers.

9 CHAIRMAN STETKAR: Okay, thank you.

10 MEMBER BALLINGER: What you're saying
11 is that we in effect have NEI 16-06, because I've
12 asked for it.

13 CHAIRMAN STETKAR: Are you on?

14 MEMBER BALLINGER: Yes.

15 MR. TSCHILTZ: I can answer that
16 question. I think in preparation for this, NEI 16-
17 06 wasn't officially issued until a couple of weeks
18 ago. So it's been forwarded to the staff to Bill
19 Dean by letter from NEI, and we've asked --

20 CHAIRMAN STETKAR: So it has been
21 submitted?

22 MR. TSCHILTZ: --Mike to provide it to
23 John.

24 MR. LAI: Yes. The staff just informed
25 me they have it, but they haven't sent to us.

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1 CHAIRMAN STETKAR: Okay, so that's
2 fine. I was just trying to -- since you've
3 organized it in this way, I want to make sure.

4 MR. ZACHARIAH: It's definitely
5 evolving.

6 MEMBER CORRADINI: So just to be clear,
7 so we've got something, White Paper 1 that's called
8 "qualitative assessment" and then White Paper 2 is
9 called -- I want to say semi-quantitative but okay,
10 streamlined approach. Are those essentially as
11 close as we have six and eight?

12 MR. ZACHARIAH: So there's another
13 element of PRA modeling, which is what 16-06 has
14 that the white papers don't.

15 MEMBER CORRADINI: Okay, thank you.

16 MR. ZACHARIAH: All right, no problem.

17 CHAIRMAN STETKAR: We'll get 16-06 I'm
18 sure in due course.

19 MR. ZACHARIAH: All right. So one of
20 our objectives like I mentioned before was how are
21 defining mitigating strategies. So we define
22 mitigating strategies and I'm paraphrasing from NEI
23 16-06 is utilizing portable equipment for various
24 safety functions for beyond design basis conditions
25 and the loss of permanently installed plant

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1 equipment.

2 So we want to be all-inclusive not just
3 FLEX but B5B. Flooding has alternating strategies
4 and there's things called targeted hazard
5 mitigating strategies. So we didn't want to just
6 keep using the term FLEX.

7 So as far as the applicability of the
8 equipment, so obviously permanently installed plant
9 equipment is not applicable to this because
10 traditional approaches would apply. Onsite
11 portable equipment, this is specifically what we're
12 targeting as the scope of our documents, and then
13 on site permanently staged portable equipment.

14 This is where plants have permanently
15 staged or bolted down portable equipment at their
16 sites that may have limited or no mobility but are
17 still the same type of portable equipment applied
18 at other sites. So this is kind of a gray area,
19 and then lastly offsite portable equipment. So we
20 had a lot of discussion regarding this, especially
21 with the staff on whether portable offsite
22 equipment is applicable or not, and we landed on
23 yes, it is. This has a potential to reduce risk.

24 However, given typical PRA mission
25 times of 24 hours, there is a high level of caution

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1 in using in the scenarios. It would either have
2 to be for scenarios where we've extended that
3 mission time or we have shown that this portable
4 equipment can be brought on site faster.

5 So this is kind of what I alluded to
6 earlier. We have a tiered approach in NEI 16-06.
7 One is a qualitative assessment. These are just
8 the foundational questions that we need to ask and
9 we'll get into what those questions are, and this
10 is really pulling together the information that's
11 necessary to do the other tiers.

12 A streamlined approach, this takes the
13 existing PRA results and applies more bounding and
14 conservative multipliers to give an estimate of the
15 risk-benefit without actually modeling it into our
16 PRA. And then the final tier is actually a PRA
17 approach the modeling the equipment and the
18 strategies into the PRA model itself, and this is
19 looking for credit and risk-informed applications.

20 We mapped out different areas where
21 this would -- we would benefit. The qualitative
22 approach, we found that it would be beneficial in
23 the STP realm. NOEDs, shutdown risk assessments,
24 if they're primarily defense-in-depth-driven and
25 the defense-in-depth portions of Rev Guide 1.200

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1 risk applications.

2 With the semi-quantitative approach,
3 STPs NOEDs are still applicable, but online
4 maintenance for Maintenance Rule A-4 we found was
5 also applicable. With PRA modeling, again STPs,
6 NOEDs. Then we added MSPI. We added the online
7 maintenance for A-4 and also the risk calculations
8 for Rev Guide 1.201 risk applications.

9 CHAIRMAN STETKAR: So why if I do the
10 ultimate PRA modeling, why don't I -- why isn't
11 that a potential application for defense-in-depth,
12 for example?

13 MR. ZACHARIAH: So in general, sites
14 don't have shutdown PRA models.

15 CHAIRMAN STETKAR: I was going to ask
16 you about shutdown separately, but if you want me
17 to address that, you can do it first.

18 MR. ZACHARIAH: I'm sorry. The
19 defense-in-depth --

20 CHAIRMAN STETKAR: No, that's fine.
21 You started on shutdown. I'll let you continue.

22 MR. ZACHARIAH: Sorry. So the shutdown
23 risk that they don't have -- typically PRA models
24 don't, aren't implemented at sites for shutdown
25 risk. It is using a defense-in-depth approach and

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1 that defense-in-depth approach would be more
2 appropriate for the qualitative approach currently.
3 It's a similar reason for the Reg Guide 1.200
4 defense-in-depth. That portion is looking at -- is
5 not looking at risk metrics. It's looking at --

6 CHAIRMAN STETKAR: Just interesting you
7 call it a Reg Guide 1.200 risk application, because
8 Reg Guide 1.200 only discusses technical adequacy
9 of the PRA. So I'm not quite sure.

10 MR. ZACHARIAH: Right. There are
11 applications that -- they're risk applications
12 where Reg Guide 1.200 needs to be met.

13 CHAIRMAN STETKAR: Okay. But PRA
14 modeling somehow does not. Never mind, go on.
15 They're boxes with checkmarks in them.

16 MEMBER CORRADINI: So but actually
17 John, you're asking the same thing. I had a
18 question. So in the second white paper that we
19 were provided entitled streamline approach, it
20 states that currently there is no accepted
21 consensus in non-Reg Guide 1.200 applications. So
22 the approach here is for non-1.200 applications or
23 for 1?

24 I was confused on the wording as to
25 what this applies to and what this does not apply

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1 to.

2 MR. ZACHARIAH: Correct. So the --

3 MEMBER CORRADINI: You can help me?

4 MR. ZACHARIAH: Yes. The semi-
5 quantitative is the white paper you're reading
6 from.

7 MEMBER CORRADINI: I think so. It's
8 entitled "Streamline Approach for Accrediting
9 Portable Equipment."

10 MR. ZACHARIAH: Yes. So that one would
11 not be applicable to Reg Guide 1.200 risk
12 applications, only non-1.200 risk applications.

13 MEMBER CORRADINI: And the reasoning
14 is?

15 MR. ZACHARIAH: The reasoning is
16 because that approach does not meet the PRA
17 technical adequacy for Reg Guide 1.200.

18 MEMBER CORRADINI: And so things that
19 it can't be used for are?

20 MR. ZACHARIAH: Correct.

21 MEMBER CORRADINI: Like?

22 MR. ZACHARIAH: NOEDs.

23 MALE PARTICIPANT: No, can't be used
24 for.

25 MR. ZACHARIAH: Oh, can't be used for.

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1 I'm sorry like 50.69, 5 Bravo, 4 Bravo.

2 MEMBER CORRADINI: Okay, thank you.

3 MR. ZACHARIAH: All right. So I'm
4 going to hand you over to Don. This is the
5 qualitative considerations of NEI 16-06.

6 MR. VANOVER: Okay. So I'm going to
7 walk through the three tiers of NEI 16-06. I'm Don
8 Vanover from Jensen-Hughes. My work on the FRIDM
9 task force was supported by Exelon, so I want to
10 acknowledge that support. So the lower tier, the
11 qualitative assessment looks at five areas to
12 determine if whether we want -- the situation we
13 want a credit for is valid or not.

14 So the first tenet is is the equipment
15 feasible to use in the scenario? This includes
16 whether it has the right capability, the right pump
17 capacity for whatever purpose we're using it for,
18 for example, and whether the scenarios we want a
19 credit for, can it be deployed in time and so
20 forth.

21 In the example on the first white
22 paper, for the NOED case, the hypothetical example
23 led to pre-deploying the equipment, so that it
24 would be available in time for the scenarios of
25 interest. And in the Palo Verde examples where

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1 they've taken advantage of the FLEX equipment on
2 site and reduced their outage risk, they've pre-
3 deployed a lot of that equipment and have more
4 plants to pre-deploy it to take credit for defense-
5 in-depth.

6 So that's how they've -- so that's the
7 first thing, and then obviously if we're using it
8 for the Envision scenarios, the ELAP and loss of
9 ultimate heat sink, then the time line would have
10 been established as part of the -- meeting the
11 requirements of the order. So depending on the
12 scenarios you want to take credit for, you would
13 have to provide confidence that it would be
14 available for the time frame.

15 The second tenet is will the equipment
16 be available, reliable and deployable, and that
17 it's back to the maintenance templates. So the
18 EPRI maintenance templates will help ensure that
19 that equipment will be reliable and EPRI is
20 embarking on collecting that data for the industry,
21 where everybody's using the same maintenance
22 templates and within the next year or so the
23 initial version of that data will be available for
24 the industry.

25 Time margin we have to factor in for

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1 the given scenarios. What time do we need it by?
2 Is it after battery depletion? Is it prior to
3 depletion, given aux feedwater would fail, for
4 example, and all that would have to be established
5 and addressed, similar to what was done in all the
6 FLEX validation studies for the specific scenarios.

7 And then is their clear and effective
8 command and control. Are there procedural
9 direction or written instructions to actually use
10 the equipment? You know, in an advance situation
11 it's not going to be, you're going to think out
12 what procedures exist and where it would be used,
13 or what new written instructions would be needed to
14 use it for a given configuration.

15 If those instructions don't exist, if
16 we're looking at after the fact, then we wouldn't
17 be able to take credit for that strategy. Then
18 lastly, if we get into a beyond external hazard,
19 will environmental conditions challenge the
20 implementation. Would the seismic magnitude be
21 such that it would severely hinder our ability to
22 deploy portable equipment and things like that?

23 So those are the five factors that are
24 common the qualitative assessment, and then we also
25 use those same factors as part of the streamlined

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1 approach.

2 CHAIRMAN STETKAR: Before we get too
3 far, and we don't have time to go into details, but
4 one of the things that I had a real problem with in
5 the white paper anyway, and I assume it's just been
6 carried through to 16-06, is that your method for
7 evaluating time margin in the equations that you
8 use are biased tremendously to give you excessive
9 calculated time margins.

10 Just put that on the record. In
11 particular, if you want to go into more details,
12 you do not have the time to clear debris in the
13 denominator. You do not have the cognitive
14 decision-making time in the denominator and you do
15 not necessarily account for the full execution time
16 in the denominator where execution may require
17 things like I need to cool down and depressurize,
18 and I can only cool down at 100 degrees an hour,
19 and I need to cool down 250 degrees.

20 So therefore it's going to take me at
21 least two and a half hours, despite the fact that I
22 can get the pump hooked up in 15 minutes.

23 MR. VANOVER: All those things are not
24 explicit in the variables, but they are embedded in
25 any individual variables.

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1 CHAIRMAN STETKAR: They are not. They
2 are not because some of the variables are not
3 included there. In the numerator in particular
4 debris clearing is in the numerator. It is not in
5 the denominator. It's on the record. Go look it
6 up.

7 MR. VANOVER: Okay.

8 CHAIRMAN STETKAR: But there are three
9 or four things that bias that time margin
10 calculation high. Why am I concerned about that?
11 Because you actually use that as justification for
12 where you are in your decision trees, and whether
13 or not you get a factor of two reduction for
14 something or not. But take a look at it.

15 The reason I just want to put that on
16 the record is I'm assuming that we'll eventually
17 get a chance to look at NEI 16-06 if it's being
18 submitted to the staff for endorsement. Is it?

19 MR. VANOVER: No.

20 MR. ZACHARIAH: No.

21 CHAIRMAN STETKAR: It is not?

22 MR. VANOVER: It is not.

23 CHAIRMAN STETKAR: Ahh, okay. Well
24 I'll just leave the stuff on the record and you
25 guys can deal with it.

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1 MR. VANOVER: Okay. So the purpose of
2 the streamline approach is the fact that, you know,
3 procedures have changed and plant has added
4 equipment that would change the response to station
5 blackout scenarios. Not just beyond design basis
6 external events but other station blackout
7 scenarios that are already modeled in the internal
8 events PRA models.

9 So if that same condition arose that
10 would lead to an ELAP-like situation, then some
11 credit for the new equipment is desirable. And
12 then the streamline approach, the purpose was to
13 really be a stop gap between the time that -- still
14 when he's had time to put the models in the PRA if
15 they choose to do so, and even if they do not
16 choose to do so then this mechanism would be
17 available to provide a rough estimate of the
18 benefit.

19 So that was the -- and the intent was
20 it does not meet all the PRA quality requirements
21 of putting it in the PRA model. It looks at all
22 the aspects that you would have to look at to
23 develop a PRA model, but it is -- we are, it is not
24 a Reg Guide 1.200 compliant approach that would
25 satisfy the technical adequacy requirements.

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1 CHAIRMAN STETKAR: So go ahead.

2 So it mirrors the factors considered in
3 the qualitative assessment. It's implemented in a
4 decision tree format, and it's not supposed to be a
5 human reliability analysis methodology. It's a
6 holistic construct to assign an overall estimated
7 probability for implementing a strategy.

8 And then the final failure
9 probabilities, depending on the time margin
10 available and the, you know, for the specific
11 scenarios range from .1 to .3 for the credit, the
12 likelihood for the failure probabilities, and if it
13 strikes out on any one of those five tenets, then
14 it would go to a guaranteed failed.

15 So if there's not enough time for a
16 specific scenario, we couldn't credit it. But the
17 idea is to provide an initial estimate of what the
18 potential benefit could be, which could be useful
19 in STP evaluations or NOED situations, where a full
20 PRA model may not be available to provide the same
21 thing.

22 At the same time, going through the
23 exercise of identifying scenarios in the current
24 model would be the precursor to then putting it in
25 the PRA model, because you've looked at what

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1 scenarios would be applicable given the existing
2 procedures and where the existing strategies could
3 be credited.

4 So the third tier of the NEI 16-06,
5 which is not part of the two white papers that you
6 had got in advance, talks about what you do do when
7 you want to put it in the PRA model and how you
8 would meet the Reg Guide 1.200 technical adequacy
9 requirements. And the conclusion we've come to is
10 that the existing methods and data are sufficient.

11 However, given the infancy of
12 collecting the data, there's going to be some
13 short-term surrogate values used perhaps for the
14 data multipliers on existing known data, until we
15 get enough data support, real data for the
16 equipment of interest.

17 Similarly, there's going to be unique
18 actions that aren't necessarily handled by existing
19 HRA tools. But the existing HRA tool that's widely
20 in use in the industry, the EPRI HRA Calculator,
21 does have enough flexibility that we can use
22 surrogates for the specific actions that are unique
23 to FLEX.

24 For example, if it's a simple action,
25 in the short term we can choose an execution error

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1 related to opening a valve, because it would be
2 similar to that type of error rate. If it's a
3 highly dependent set of actions where you have to
4 open six breakers on one panel, we would not -- the
5 recommendation is not to handle them as six
6 different execution errors, but to treat them as
7 one, because they would be dependent.

8 So that's the type of guidance that is
9 in 16-06. There's still going to be more guidance
10 coming to, you know, provide utilities more
11 information on what to do with the PRA models. But
12 the general thought is we can move forward with
13 what we have, and with a little bit of creativity
14 use the methods we have. We don't necessarily need
15 brand new methods to deal with this stuff. Any
16 questions on 16-06 or what's in there?

17 MEMBER REMPE: I guess this is pretty
18 much the last discussion on this approach, and I
19 haven't heard you mention anything about what will
20 done about prioritization of equipment with respect
21 to the FLEX equipment because it's different than
22 something that's installed, where you know that
23 template goes to that system. Is there a plan to
24 have guidance on how to prioritize, so that you
25 don't plan to use one ELAP for multiple systems?

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1 MR. VANOVER: Well, I mean if the
2 procedures that are in place, if the conditions
3 exist that an ELAP would be declared, and it's --
4 at some sites it's very clear that if you don't
5 have power back and you don't have power to your
6 Safeguard buses from your onsite equipment, you
7 declare an ELAP, and that directs you to start
8 using the FLEX equipment.

9 MEMBER REMPE: For the ELAP. But if
10 you're planning to take credit for it for other
11 events?

12 MR. VANOVER: Then we would have to
13 look at those -- we'd have to perhaps modify
14 procedures and give -- if we wanted to take credit
15 for it, for a NOED or a license amendment request
16 to extend an outage time, we would have to look at
17 that and make sure it's feasible and --

18 MEMBER REMPE: So they'll be some sort
19 of procedures and modifications developed for
20 prioritization.

21 MR. VANOVER: Yeah. But what we're
22 talking about mostly in the streamline approach is
23 the way the procedures are written now, because in
24 STPs you're going to be looking after the fact
25 anyway. For the NOEDs, perhaps you could pre-stage

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1 it and even, you know, look at it that way, to make
2 sure you've got the timing available.

3 But part of the guidance would be to
4 look at the procedures and the guidance, to get you
5 into using the equipment.

6 MR. BEMENT: And in also all cases
7 you're talking about the plus one equipment. So
8 you're not talking about the N equipment for one of
9 the units. You're talking about the plus one
10 implement now.

11 MEMBER REMPE: Thank you.

12 MEMBER CORRADINI: So just to follow on
13 Joy's question, so to walk this through, are you
14 going to pick a pilot or is our vice president here
15 an example of the pilot plant that's going to
16 develop these procedures?

17 MR. ZACHARIAH: So we're not --
18 currently not planning on picking one pilot to do
19 this for all different things, but there a handful
20 of sites that are looking to implement this in
21 different variations, Palo Verde being one that
22 actually has already implemented the diesel
23 generator example that Bob mentioned, used the
24 framework of NEI 16-06 outline.

25 MEMBER CORRADINI: But I guess I'm

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1 again, since I'm not a risk person, what I guess
2 I'm trying to understand is more things are good as
3 long as the more things don't confuse the issue
4 relative to what do I do first, what do I do
5 second, and that's where I am struggling.

6 So now you've got more, excuse my
7 English, more toys to play with, but you want to
8 make sure you use the toys in an appropriate manner
9 at an appropriate time. I'm trying to figure out
10 where in all of this is that being evaluated?

11 MR. ZACHARIAH: So I think that comes
12 more into play with our other guidance for NEI 16-
13 08, and I only have one slide on it since it hasn't
14 really been developed yet.

15 But this is going to your point of
16 using the equipment in different capacities than it
17 was originally designed for, how do we -- part of
18 the considerations would be okay, well how do we
19 make sure that a site understands when you can you
20 use it and what scenarios do you use it in?

21 CHAIRMAN STETKAR: There are some other
22 subtle impacts that I made notes on as I read
23 through the paper, and they deal with integrating
24 this into a full consideration of risk. In
25 particular, the approach is presented from the

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1 perspective of implementing these alternatives can
2 either not make anything worse or make things
3 better.

4 Now there are cases where implementing
5 the approach, the operators have the knowledge that
6 the approach is possible, can make things that are
7 explicitly modeled already in the PRA worse. In
8 other words, they will give up trying Option No. 1
9 that is explicitly modeled in the PRA because they
10 know they have this other stuff available.

11 So therefore the failure rate for --
12 personnel failure rate now, for implementing Option
13 1 might be a hell of a lot higher in the existing
14 PRA with the new option possible. I don't know
15 where the combination of the two will be, but just
16 saying that I have a multiplicative effect that
17 will always drive things down especially in the
18 human performance area is not necessarily the case.

19 If these options are introducing
20 alternatives that might cause people to essentially
21 give up, and I'll use the pejorative a bit, but not
22 assign the higher priority to the option that is
23 explicitly currently modeled in the PRA, that
24 you're now adding this thing too.

25 So it's not necessarily just that

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1 simple of throwing some things in and saying I have
2 a multiplier of .01 or, you know, .05 or something
3 like that. It doesn't work that way. So when you
4 think about this in the context -- and I don't know
5 what kind of context you're going to think about
6 it, even on a particular --

7 Whether it's a NOED or whether it's a
8 significance determination, where you actually have
9 a better handle about the context, even there you
10 need to think about those things, especially about
11 the area of human performance, that the equipment
12 will take care of itself.

13 MR. VANOVER: In the white paper and in
14 16-06, we did consider the potential negative
15 impacts of DC load shed. Perhaps that could lead
16 to more time required to reestablish equipment, and
17 we did look at that issue based on some initial
18 comments we had from the NRC, from the December
19 version.

20 CHAIRMAN STETKAR: Okay.

21 MR. VANOVER: And then -- but yeah. If
22 we were to do a full dependency analysis in a PRA
23 model, then we would have to account for all those
24 actions together.

25 CHAIRMAN STETKAR: But again, I'm not

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1 talking about pumps and pipes and valves and
2 electron dependency. I'm talking about human
3 performance dependence. The fact that simple --
4 now that I know that I can go to bleed and feed, am
5 I really going to do every -- am I going to die
6 trying to get auxiliary feedwater back?

7 No, I'm not going to try to get
8 auxiliary feedwater back. Whereas before I knew
9 about the concept of bleed and feed, I would
10 probably die trying to get auxiliary feedwater
11 back. That's the whole point. That's me
12 performing. Doesn't have anything to do with the
13 pumps or the valves or, you know, the equipment.

14 There's just a caution that when you
15 start including these, especially from the human
16 performance perspective, it isn't always
17 necessarily just a nominal dependence multiplier.
18 The integrated scenario performance is what's
19 important.

20 MR. ZACHARIAH: So just to complete
21 this slide, so the purpose of 16-08 is twofold.
22 One to provide guidance to industry on how to
23 identify beneficial uses of the portable equipment,
24 and then drive consistency across the industry and
25 implementation. If it's programmatic, what the

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1 technical basis consideration should be, what the -
2 - what training should -- what type of training and
3 command and control there should be, and preventing
4 any unintended consequences.

5 Bob mentioned in his slides ensuring
6 that there isn't potential for a SCRAM or impacting
7 a safety-related system. Things like that are
8 built into the considerations of what this document
9 is looking to do, and I think that's --

10 MEMBER SKILLMAN: Where does this stop?
11 So we had our installed equipment and we said now
12 we have FLEX. We have a little more conservatism
13 or now we have more margin so we'll take credit for
14 that margin. Where do we say that's the limit,
15 that's the end of the line? Once you've exhausted
16 your resources for installed and once you've
17 allowed yourself to become dependent on your FLEX,
18 where do you simply say no more?

19 If we don't achieve what we need to
20 achieve with this supplemental equipment, there is
21 no more and we're moving into this status and we
22 know will keep us safe. Where does it end?

23 MR. BEMENT: I'm not sure I understand
24 the question. Are you talking about --

25 MEMBER SKILLMAN: Remember the old

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1 Volkswagens? The early ones that you imported had
2 a little switch for your reserve tank. So the real
3 aggressive driver would say well, you know, I'm
4 almost out of gas but I can tap my gauge here. I
5 can get about 10 or 15 more miles and all of the
6 sudden the engine sputters and you flip over to the
7 reserve tank, and you say good. I've got a couple
8 more miles.

9 So if you run on the reserve tank and
10 you begin running out of gas again and you tap on
11 your gas gauge, and now you really, really are out
12 of gas. Here we've got out installed equipment.
13 Now we're going to depend on FLEX equipment, and
14 where do we simply say this is where it ends?

15 MR. BEMENT: I don't know how to
16 answer. I mean, you know, our whole mission is to
17 keep the core covered and keep the core cooled. So
18 I think what we learned from the Fukushima event
19 was we don't know exactly what that event could be.
20 But if it takes out our installed equipment, we
21 want to have the ability to implement backup
22 equipment. That's why obviously the FLEX rule.

23 And so I think you're building into the
24 operations and the organization that one, you want
25 to -- you want to prepare for any of those

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1 possibilities, including training on all of them.
2 But you don't -- we don't want to give up, and so,
3 you know, our emergency procedures are pretty
4 clear. Once we get into them and John, I heard
5 your question about, you know, are the operators
6 going to go focus on the wrong stuff and give up on
7 what we have depended on for the emergency
8 operating procedures.

9 Our procedures in my opinion are pretty
10 clear. You've got to stay in your emergency
11 operating procedures and if that pump doesn't work,
12 it kicks you to how to get that pump or an
13 alternative pump or an alternate method and stay in
14 that. One of the things we're working with the
15 Nuclear Regulatory Commission on how do we tie this
16 equipment at the foot of the EOPs, where we never
17 kick those operators out of our procedure.

18 They stay in the same procedure, and
19 it's not oh yeah, if you want to implement FLEX,
20 you have to go to this other standby procedure,
21 because it can't be tied to the EOPs. So just
22 trying to work through that.

23 But in my mind, I think it's pretty
24 clear that the operators understand what their
25 primary role is, and the backup role which is

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1 really done by somebody outside of operations, as
2 far as getting the equipment there, hooking it up,
3 and in our case it's the Fire Protection Group.

4 That group's not going to affect what
5 I'm focused on for the other, the other parts of
6 the -- of the vent. And so but I do believe as we
7 go through training and see these events, we're
8 going to keep improving it just like we've done the
9 emergency operating procedures year over year.
10 Does that answer your question?

11 MEMBER SKILLMAN: Not really. I was
12 actually trolling.

13 MR. BEMENT: I did it so eloquently
14 though.

15 MEMBER SKILLMAN: That was a nice
16 answer, Bob. All I can say is hey, we've got our
17 installed equipment, we've got FLEX. Where does it
18 end? If folks go to say hey, at some point we're
19 going to land this plane with whatever we have.
20 But once we've run out of options, we're out of
21 options.

22 MEMBER BLEY: You know, last year, we
23 had a closed session with NEI on one kind of plant
24 working their way through this process all the way
25 down, and for me, that was very instructive. I

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1 don't know that we've worked it out to that level
2 for all plants yet. But I was hanging up on your
3 question, Dick, because we don't give up. We just
4 keep going to the safest place we can get to.

5 That process, which was a closed
6 session with preliminary information, but that
7 walked us to the best closed end state they could
8 get to. It seems to me I don't know where you
9 stand as a group on getting to that point for all
10 plants. But that seems for me is the answer to the
11 question you were raising.

12 MR. ZACHARIAH: Yeah. If I could just
13 throw in one thing. There was an item on Bob's
14 slides. I think this description highlights, which
15 was using the EOPs as kind of our method of
16 improving defense-in-depth and why that's
17 important. The questions on prioritization really
18 stem off of that, you know.

19 You have to use the permanently
20 installed equipment first, and then if there's a
21 failure, then it kind of tracks, takes you down the
22 line of using this other equipment.

23 MEMBER REMPE: But I'm just wondering,
24 has somebody looked at a high level and perhaps you
25 use it for System A, but then the procedure that

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1 includes System B, does it need that same pump? Is
2 somebody saying oh no, we already said we're going
3 to use it for System A and it's not over-
4 accommodated.

5 I mean is somebody tracking and going
6 to be doing that in the future under 16-08, to make
7 sure that the equipment can't be relied upon
8 because you've already used it for something else?

9 MR. ZACHARIAH: The short answer is
10 yes, definitely in 16-08. And in 16-06, that comes
11 under the element of availability of actual
12 equipment. If it's being used for something else,
13 then it's clearly not available or we have to look
14 at the other sets of equipment. But --

15 MEMBER REMPE: That would be done for
16 each and every one of these plants --

17 MR. ZACHARIAH: Yes. That would be a
18 consideration for us. That's all I had as far as
19 slides.

20 CHAIRMAN STETKAR: Anything more?
21 Again, we have to be a little bit cognizant of the
22 agenda. So if there's nothing more for Tom, we'll
23 flip over to Mike and --

24 MR. TSCHILTZ: So I think we'll gain
25 back some time.

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1 CHAIRMAN STETKAR: Yeah. Oh, another
2 administrative. We've been joined by ACRS member
3 Walt Kirchner. I'm choking up here because I was
4 going to say "and the esteemed Dr. Dana Powers."

5 MR. TSCHILTZ: So, good afternoon. I'm
6 Mike Tschiltz, the Director of Risk Assessment at
7 NEI, and I guess I was asked to talk about risk-
8 informed licensing activities and I think this
9 slide captures the main focus of the industry of
10 where we're heading.

11 So the first slide or the first bullet
12 is the risk-informed tech spec surveillance
13 frequency, the TSTF 425. Right now about two-
14 thirds of the industry has that approved
15 application. But what we found from an industry
16 perspective is there's been inconsistent
17 application of that, and from that, what I mean is
18 that the industry hasn't fully taken advantage of
19 the benefits of this licensing action.

20 So what we've done as NEI is taken a
21 step back and looked at what can we do to help the
22 industry, enable the industry fully implement this
23 to TSTF. So I think one of the issues that came up
24 when we started to look into that is that, you
25 know, this requires work outside of the risk group.

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1 It requires a push from the top of the organization
2 down to get support from the engineering
3 organizations.

4 So I think we've basically embarked on
5 a campaign to make sure that senior leadership in
6 the NRC or on the industry is aware of the benefits
7 of this application, and we're taking steps to help
8 enable, make it easier for people to implement
9 certain surveillance frequency extensions.

10 So we've looked at what are the high
11 value ones, the ones that have created the most
12 benefit from the industry and we're trying to
13 develop common approaches that the utilities can
14 use to implement.

15 The next one is the risk-informed
16 allowed outage times, the tech spec 4 Bravo
17 initiative. Not as many people. I think South
18 Texas is the only one really with the approved
19 application. I know there are several close.
20 There's the Vogtle application that's pending
21 approval with staff too. It's been there for over
22 four years.

23 I think the industry looks at what's
24 been invested in this and sees that, you know,
25 we're coming to closure on the outstanding issues

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1 that would keep people from being able to
2 implement, either it be through the concerns raised
3 by the staff during the review and the issue of the
4 PRA technical adequacy that we're making progress
5 on.

6 So that's going to be an initiative
7 that's probably implemented by over 70 percent of
8 the fleet. So the major utilities have all
9 indicated an interest to move forward with
10 implementing this initiative.

11 MEMBER BLEY: That's encouraging.
12 That's the first time I've heard an estimate like
13 that in a long time.

14 MR. TSCHILTZ: Right now, NEI is doing
15 a survey for these three specific applications of
16 the industry, to see whether they're committed to
17 those applications and the time frame that they'll
18 be looking at submitting them to the NRC, so we can
19 look at resource planning.

20 MS. ANDERSON: And I'm just going to
21 butt in. I think that reason that you're seeing,
22 that you're hearing that number now for the first
23 time is you have a lot of plants that have gone
24 through NFPA 805. So they have that fire PRA.
25 That was the barrier to entry before. So that's

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1 one of the positive side effects of 805.

2 MEMBER BLEY: Eventually.

3 CHAIRMAN STETKAR: Holy cow.

4 (Simultaneous speaking.)

5 CHAIRMAN STETKAR: She used NFPA 805
6 and positive in the same sentence. I just want
7 that on the record. Now we've got it.

8 MR. TSCHILTZ: So the next bullet is
9 risk-informed special treatment requirements. As
10 you recall, South Texas got an exemption that did
11 essentially the same thing quite a few years ago,
12 and that Vogtle just got their pilot approved for
13 that. So they're looking at implementing a number
14 of different systems.

15 But I think when we looked at this, we
16 formed a task force at NEI late last year. We
17 looked at whether the guidance needed to be
18 updated, whether the rule needed to be changed.
19 What were the things that were inhibiting people
20 from implementing this? We found out at the
21 guidance worked, it was good enough. The rule
22 didn't need to be changed.

23 We just needed to make sure that people
24 recognized the benefits, recognized what the
25 submittal needed to contain and the PRA that was

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1 associated with that, and I think we've basically,
2 as Bob indicated earlier, that it's been tied to an
3 initiative for delivering the Nuclear Promise, as
4 providing substantial benefits to the industry. So
5 we're looking at widespread implementation of 10
6 C.F.R. 50.69 across the fleet.

7 CHAIRMAN STETKAR: Mike, did you say
8 the Vogtle pilot application was approved?

9 MR. TSCHILTZ: Yes, yes. It's been
10 approved. So there's South Texas and Vogtle.

11 CHAIRMAN STETKAR: Interesting.

12 MR. TSCHILTZ: So the last one is the
13 NFPA 805. I guess we're coming to closure on
14 approval of those amendments within the next year
15 or so I believe, and what we're looking at focusing
16 on is improving actions that kind of improve fire
17 PRA realism, working with both Research and EPRI
18 and the industry is looking -- has looked at over
19 the last year what we can do ourselves without
20 engaging the NRC to improve fire PRA realism.

21 So we have focused efforts to address
22 that issue. That's particularly important because
23 of the lack of fire PRA realism inhibits the
24 benefits of the first three bullets there, those
25 specific initiatives. So that's the focus of the

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1 industry. In the near term, if you look at the
2 work required to perform the -- develop the
3 submittals and for the NRC review and approval,
4 that's a substantial amount of workload and it will
5 take a number of years to achieve. But that's the
6 direction the industry's headed. That's the end of
7 my presentation.

8 CHAIRMAN STETKAR: One just quick
9 question. In the discussion earlier, you said very
10 positively that NEI was not planning to submit NEI
11 16-06 or NEI 16-08 for staff endorsement. Any
12 particular reasons why?

13 MR. TSCHILTZ: Yeah. I think we think
14 that the -- first of all we worked with the staff
15 very closely in development of those two white
16 papers.

17 We worked with the staff for over a
18 year on those and we believe we've addressed their
19 comments to the extent they can be addressed at
20 this point in time, and we will continue to engage
21 the staff as we gain more experience through the
22 work that EPRI's doing to develop the database for
23 the equipment reliability and to refine the HRA
24 methods for the use of this equipment.

25 But we believe that the concepts that

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1 are in that NEI 16-08 are all used, things that
2 have been, you know, accepted for use in other PRA
3 applications or in accordance with the standard and
4 don't present any new issues that need specific
5 review of the staff. Where we think that there's,
6 you know, additional work that needs to be done, we
7 take a conservative bias in the assessment for
8 those issues for reliability and for HRA.

9 So we believe that our treatment of
10 those issues is appropriate at this point in time
11 in the guidance document.

12 CHAIRMAN STETKAR: Okay, thank you.
13 Anything else from Mike? If not, we're going to
14 switch gears again and get to talk to Victoria,
15 who has suddenly become really my friend. Good
16 thing about -- your career is doomed.

17 MALE PARTICIPANT: But don't worry.
18 Friendship only lasts an instance with him.

19 MS. ANDERSON: Okay, all right. So I'm
20 going to be talking about some Risk-Informed
21 Steering Committee efforts on PRA technical
22 adequacy. This is an effort that has essentially
23 been ongoing since we started the Risk-Informed
24 Steering Committee. The effort started because,
25 you know, we look at the Risk-Informed Steering

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1 Committee focus, which was identifying issues that
2 were getting in the way of more completely risk-
3 informed regulation, and to actively address those
4 that weren't approaching resolution via normal
5 regulatory processes.

6 When we start the PRA technical
7 adequacy effort both the NRC and industry had
8 identified this as an issue that was getting in
9 our way. It was an area of major difficulty for
10 NFPA 805 transition and we did not care to repeat
11 that experience. So we looked at what we might be
12 able to do to enhance what's in existing regulatory
13 guidance, particularly 1.200.

14 It was clear it wasn't providing
15 sufficient guidance for what both the industry and
16 NRC needed. So that was where the effort started
17 out. WE identified three objectives. The first
18 was a streamlined approach for making new PRA
19 methods available for regulatory application. I
20 believe we've talked with this committee several
21 times about some of the difficulties we ran into
22 with getting new fire PRA methods out, and we
23 wanted to see if we could come up with a more
24 efficient process.

25 Our second objective was developing an

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1 approach for more effectively closing peer review
2 findings. At the current time, if a licensee has a
3 peer review that's done, there are findings that
4 come out of that. They have to keep putting that
5 in every single regulatory application and there's
6 no way to close those except to have a peer review,
7 which will result in more findings.

8 We thought maybe there was something we
9 could think of that would be a more efficient way
10 to deal with those findings. Our final objective
11 was to identify and address any remaining gaps in
12 the peer review guidance documents. I'm going to
13 be focusing on Objectives 1 and 2 today. We had
14 some minor edits to our guidance based on Objective
15 3, but nothing major.

16 So just before I get started on the
17 details, a time line of what we've been working on.
18 So this was identified as a priority with the Risk-
19 Informed Steering Committees in April of 2014. The
20 next month we formed working groups and started
21 identifying our specific objectives. The industry
22 working group finalized our white paper that
23 documented the conclusions of our work in June
24 2015, and in January 2016 to January of this year
25 we received a letter from NRC concurring with the

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1 white paper and I should say conceptually. So I
2 think that's an important point to have there.

3 Following that, the industry developed
4 the implementation guidance documents that would
5 implement the conclusions of the white paper, and
6 we received the draft NRC position on those
7 documents in April of this year and we've been
8 moving forward from there with some pilots of those
9 documents. I'll talk about that in more detail.

10 So are there any questions on the
11 genesis of the effort and what we've been working
12 on before I get into the details on F&O closure?
13 Now I will move to F&O closure, the finding
14 closure process. Just a little bit more detail on
15 the issue itself. There's a lot of licensee and
16 NRC resources that get devoted to review of PRA
17 technical adequacy.

18 We have our industry-led peer review
19 program for PRAs, and then there's the NRC review
20 of the PRA findings when licensing applications
21 come in. You could only -- a licensee could only
22 close previous peer review findings via another
23 peer review previously, and so licensee had to
24 submit their findings in multiple risk-informed
25 applications and we found ourselves asking the NRC

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1 to review the same findings for multiple
2 applications.

3 We looked to see if we could develop a
4 new approach to permanently closing findings, to
5 reduce the scope and complexity of risk-informed
6 license amendment reviews. So we think this is a
7 potentially high payoff effort.

8 MEMBER POWERS: Well does it raise
9 questions about the adequacy of the whole concept
10 of peer review? I mean your fundamental problem,
11 you bring in a peer review. They're all qualified,
12 but they look and identify the subset of things.
13 They write them up and they hear our findings. We
14 bring in another set of peers, different people,
15 different expertise. They identify a second set.

16 The peer review process does not seem
17 at all capable of doing a comprehensive
18 identification of findings.

19 MS. ANDERSON: I think one of the --
20 what we found with follow-on peer reviews is that
21 findings aren't necessarily created equal. So that
22 initial peer review may come out with say 80
23 findings, but a couple of them are maybe pretty
24 far-reaching findings that have pretty substantial
25 impact on the PRA.

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1 So the licensee will address those,
2 bring in a second peer review team that will also
3 come up 80 findings, which may make you think well
4 gee, so did they identify completely different
5 things? Well what happened is those -- that second
6 peer review found much more focused items, because
7 the larger scope items had been addressed.

8 So I think it's the concept that not
9 all findings are created equal, and you wind up
10 with roughly 180 to 150 thoughts and observations
11 per peer review because that's how many, a five to
12 seven person team can write up in a week. So
13 you'll find that the later vintage peer reviews are
14 coming up with findings that have a much more minor
15 impact on the model, and that they're much fine-
16 tuned.

17 MEMBER POWERS: Well, you're arguing
18 that it's a convergent process which is good. But
19 I'm willing to argue that only because you're
20 drawing from such a limited set of peer reviewers.

21 MS. ANDERSON: I don't think we're
22 drawing from as limited a set of peer reviewers as
23 we have previously. We've been working on training
24 more peer reviewers, and I don't think it's as
25 limited as before. But I do understand your

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1 concern that it can't be completely comprehensive.
2 Just the nature of the process, they cannot look at
3 every single aspect of the PRA, that is correct.

4 MEMBER POWERS: Is it the case that
5 peer review is the worst possible way of doing
6 this, except for all the others?

7 MS. ANDERSON: That's what -- who is
8 that paraphrasing again about democracy? Is that
9 what Mr. Dale said. I think that's a Churchill
10 quote that you're paraphrasing. But I think that
11 might be the case, you know. If you look at your
12 alternatives, you could turn over your entire PRA
13 to NRC review, which could be potentially quite
14 costly and time-consuming, you know. The number of
15 --

16 MEMBER POWERS: I think I would argue
17 that that review would be essentially identical to
18 a peer review, except more eyeballs and longer
19 time.

20 MS. ANDERSON: Well, and the rate may
21 be a little bit higher for the licensee. So it is
22 -- I mean there are reasons that peer review is
23 preferable to having a full in-depth review of the
24 PRA by the NRC staff and that's why they
25 established it.

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1 MEMBER POWERS: I guess what I'm
2 asking, have you thought about is there any way
3 better to do it than peer review?

4 MS. ANDERSON: That is something that
5 we thought of with this group, is you know, should
6 we look at something besides the peer review
7 process? Given what we've invested in it and given
8 some of the efficiencies we have realized from it,
9 we do think it's the approach we want to stick
10 with.

11 MEMBER POWERS: Can we think of no
12 authority that advocates decisions made based on
13 sunk cost? In fact, I can most authorities on
14 decision-making saying some costs should not be
15 considered in making decisions.

16 MS. ANDERSON: I understand. I believe
17 that the reason that was considered was if we went
18 with -- is that there were some infancy issues with
19 the peer review process that we've ironed out, and
20 that's why we didn't want to use those infancy
21 issues as reason to abandon it.

22 MR. TSCHILTZ: And I think, I don't
23 know if you're referring to the concept of a
24 certified PRA, but you know, I think when we
25 contemplated the benefits and the downsides of that

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1 issue, we looked at the investment and the time
2 frame that it took to put the infrastructure in
3 place to evaluate the adequacy of the PRA right
4 now, and we said we'd be starting all over in
5 another decade to get something else in place to
6 take its place.

7 I think our efforts are better focused
8 on refining what we have and making improvements to
9 the existing process.

10 MS. ANDERSON: But that was something
11 we considered was that --

12 MEMBER POWERS: A lot of organizations
13 have found, discovered that peer review is not the
14 answer to their prayers in many contexts, and are
15 looking at alternatives. I'm just wondering if any
16 of the alternatives they're looking at have any
17 applicability here. I don't want the answer to
18 that question.

19 MS. ANDERSON: It is a question we
20 periodically examine, is are we still getting the
21 value that we envisioned out of the peer review
22 process, and the answer when we did the evaluation
23 this go-around is we aren't quite getting the
24 efficiencies we originally envisioned, but we can
25 make some adjustments to get there.

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1 So with respect to finding closure,
2 there were several potential approaches identified.
3 One suggested approach was using the original peer
4 review team to close out the findings, since they
5 understood the underlying basis behind the
6 findings. Another option is a new peer review
7 closing out the findings. A licensee could have
8 the NRC perform the review close out, and then the
9 other option was a licensee independent assessment
10 closeout.

11 The first option was a non-starter
12 because many of the original peer review teams
13 involved in the renewals who have since retired and
14 have no interest in coming back. So we just took
15 that off the table, and we recommended that there
16 be a hybrid approach used, which would allow
17 licensees to use either of the other three
18 approaches to permanently close out findings.

19 When we say permanently close out
20 findings, that would mean that there would be a
21 report available for NRC audit, how these findings
22 were closed out and they would not need to be
23 submitted with licensing applications. So with
24 respect to implementing the recommended approach,
25 we did get concurrence of the concept from NRC.

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1 Two of the three means of finding
2 closeout were available via existing guidance. So
3 we didn't really have to do too much to dress those
4 up. We know how to submit things for NRC review.
5 We know how to do a new peer review. The licensee
6 closeout did require new guidance.

7 We decided to re-term it independent
8 assessment because we all along expected those
9 involved in closing out the findings would meet the
10 ASME/ANS PRA standard definition of independence.
11 So we renamed it to better reflect that
12 expectation, and we outlined that proposed process
13 in a draft appendix to the NEI documents on peer
14 review.

15 CHAIRMAN STETKAR: You're going to
16 revisit that in a couple of slides, right?

17 MS. ANDERSON: What am I revisiting?

18 CHAIRMAN STETKAR: The independence
19 issue.

20 MS. ANDERSON: Independence? I am not
21 talking about it in detail but I can.

22 CHAIRMAN STETKAR: Let's wait until --
23 I had it marked on one of your later slides here.

24 MS. ANDERSON: Sure, that works. So
25 our industry guidance document on finding closeout,

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1 we first briefly described existing processes. So
2 that's a new peer review or an NRC review, and then
3 we moved into a detailed description of the
4 independent assessment process including the
5 process itself, team membership including a
6 description of independence expectations and the
7 review scope.

8 So an overview of how the independent
9 assessment works. It's similar to a peer review,
10 but the scope is limited to evaluating closure of
11 findings. The team members are qualified to
12 perform a peer review of relevant findings. As I
13 said before, they meet the ASME ANS standard
14 definition of independence, and they have access to
15 documentation and the site as necessary, just as in
16 a peer review.

17 So the process, the team reviews the
18 documented finding closure provided by the utility.
19 They reach determination on the closure status of
20 the finding and document their conclusions in a
21 report that's available for NRC audit. So we can
22 get to the pilot of this process to see how it
23 would work out. We conducted this pilot at
24 Limerick in July, and NRC was involved in observing
25 the process.

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1 It looks like preliminarily this is a
2 substantial opportunity to reduce the number of
3 findings that have to undergo review for licensing
4 applications. There were 115 findings from three
5 different peer reviews spanning over a decade. So
6 there was a pretty large volume of work, and at
7 this point only 14 remain fully open. I think 11
8 are partially open.

9 So that's a substantial reduction in
10 the number of findings that would need to go into
11 the application review process, and I think we'll
12 see even better numbers in the future because we
13 did have a few lessons learned from this pilot. So
14 one of those is that there's a potential for a
15 concurrent focus scope peer review. If addressing
16 a finding has substantially impacted the modeling
17 approach taken, it may be appropriate to have a
18 focus scope peer review concurrent with the finding
19 closeout.

20 And since the independent assessment
21 team is qualified to be peer reviewers, they could
22 do both at the same time. They may need extra time
23 on site, but it's possible.

24 CHAIRMAN STETKAR: Does that --

25 MS. ANDERSON: Have I passed your

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1 question?

2 CHAIRMAN STETKAR: No, not on the
3 independence yet.

4 MS. ANDERSON: Okay.

5 CHAIRMAN STETKAR: But in my
6 experience, some of the guidance that I read from
7 NEI said that issuance of new findings from the
8 closeout review was off the table.

9 MS. ANDERSON: Right.

10 CHAIRMAN STETKAR: In other words, if
11 I'm doing a closeout review of a particular fact
12 and observation, I can't issue a new fact and
13 observation.

14 MS. ANDERSON: Right.

15 CHAIRMAN STETKAR: Now I've done a lot
16 of reviews, and in many cases what I found is that
17 the PRA team changes models to address this
18 specific perfectly round fact and observation, and
19 makes all wonderful changes. So yes indeed, I can
20 check off a box if that's what. But by doing that,
21 they introduce new things that they didn't think
22 about.

23 Now when I look at it, I say well okay,
24 you solved that problem. By solving that one, you
25 created this other one. You're saying that I can't

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1 do that though.

2 MS. ANDERSON: Right. So in order --

3 CHAIRMAN STETKAR: Which is really
4 tying my hands.

5 MS. ANDERSON: In order for a fact and
6 observation to be an actual finding, it needs to
7 have a significant impact on the PRA.

8 CHAIRMAN STETKAR: Sure.

9 MS. ANDERSON: So the thought is that
10 there would either a remaining open finding that
11 would be related to that, or it would not rise to
12 the level of significance of a finding. That is a
13 topic we're revisiting, is whether or not they do
14 need to. And that's why we're doing the pilots, to
15 see if it's something that comes up.

16 CHAIRMAN STETKAR: Okay, because in my
17 experience, I've had those things happen, where
18 indeed the change that they made solved the problem
19 within the context of the model for that particular
20 issue. But the way they changed the model made
21 another issue worse, and worse enough to rise to --
22 I've done a U.S. peer review. I've been on a lot
23 of IAEA reviews of PRAs, the processes.

24 MS. ANDERSON: I think there are a
25 couple of means by which this is going to be

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1 addressed. The first is if you're really arguing a
2 concurrent focus scope peer review, then the
3 findings could be issued there.

4 CHAIRMAN STETKAR: That's what I
5 thought you were going to say, but I didn't hear
6 you say that.

7 MS. ANDERSON: Right, that's fine, and
8 then the other is that, you know, if it doesn't
9 rise to the level of finding, I believe that there
10 were a couple of items from the Limerick focus
11 scope peer review that wound up entered into the
12 licensee's corrective action program. They
13 wouldn't have been findings if a peer review team
14 had been there anyway.

15 CHAIRMAN STETKAR: But the guidance is
16 written not at the finding level; it's written at
17 the F&O level.

18 MS. ANDERSON: Right.

19 CHAIRMAN STETKAR: So I can't even
20 issue a fact and observation, regardless of its
21 significance.

22 MS. ANDERSON: Yeah. So again, we
23 might be revisiting that after we do the pilot.
24 The intent behind that is we were trying to get
25 away from the problem of you have a bunch of

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1 findings, you bring in a new team and they just
2 issue a new number of findings.

3 CHAIRMAN STETKAR: No, that's right.
4 It's off -- oh by the way, I noticed this
5 completely irrelevant issue over here that I feel a
6 need to write about.

7 MS. ANDERSON: Right, and so --

8 CHAIRMAN STETKAR: That's a different -
9 -

10 MS. ANDERSON: We've talked about do we
11 need to incorporate some language of, you know, new
12 F&Os can be issued, but should only be issued in
13 the case that there is a significant impact on the
14 model. Other approaches to documenting the
15 observations, such as use of the licensee's
16 corrective action program should be considered,
17 something to that effect.

18 CHAIRMAN STETKAR: Okay. But I looked
19 ahead. It seems to be an issue, and you said
20 you're still struggling with it.

21 MS. ANDERSON: Right.

22 CHAIRMAN STETKAR: But it's something I
23 do have in my own experience, that tying my hands
24 as a reviewer of, you know, given the specific
25 directive to examine this F&O and determine whether

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1 it's been adequately addressed, and yet say I
2 can't, if I discover something related to that, not
3 completely unrelated to it but related to that, has
4 created a problem.

5 MS. ANDERSON: Yeah, and I think that's
6 why we saw some of the partially opened F&Os, and
7 that's not really doing anybody any favors either.
8 So again, we might revisit that.

9 CHAIRMAN STETKAR: There are a bunch of
10 ways you could treat it. One way is to just keep
11 it open.

12 MS. ANDERSON: Right. So and -- but
13 that might not really be the most effective way to
14 deal with it. So again, we're going to have to --
15 we're going to take a look at it, but that's why we
16 do the pilots and integrate feedback from them.

17 And then just one other lesson learned
18 was availability of materials prior to the onsite
19 review week further in advance would have been
20 advantageous to the team. So we'll probably spell
21 out guidance on that.

22 So the next steps. We are looking at
23 conducting an additional pilot in early November.
24 We're looking to achieve alignment and endorsement
25 from NRC. But before we do that, we do have a

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1 couple of open issues. The first is on reviewer
2 independence and what the expectations are for
3 reviewer independence.

4 Right now, we haven't converged yet
5 with the NRC staff, but they have proposed a
6 workshop in October where we would be going over
7 issues like this. So I'm hopeful that we start to
8 achieve convergence there. Is this where your
9 independence question comes up?

10 MALE PARTICIPANT: Yes.

11 CHAIRMAN STETKAR: It's where I was
12 kind of hold off. That's -- when I was making
13 notes to myself, the concern -- I'm not trying to
14 say anything about any individual. What I'm
15 concerned about is that if I am an employee -- boy,
16 I can't say that.

17 If I work for a large organization now
18 that operates a large fleet of nuclear power
19 plants, and they have at each nuclear power plant
20 let's say a PRA group, but that PRA group receives
21 the same training at the organization level, at the
22 fleet level, so that I'm trained.

23 I come into the organization. I'm
24 trained how to do PRA. I'm trained on this is the
25 way Organization X does their PRAs. This is the

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1 standard way we've built our models, these standard
2 assumptions that we make, and I go to work for
3 Plant A in that organization. Plant B says hey,
4 come in and take a look at my facts and
5 observations.

6 I use the following assumptions. I
7 made the following model changes. I say yeah,
8 that's pretty much the way I would do it. It's
9 okay.

10 MS. ANDERSON: Yeah. I understand the
11 concern.

12 CHAIRMAN STETKAR: It was fine when we
13 had a whole bunch of little utilities and nobody
14 talked to each other but maybe not so much these
15 days.

16 MS. ANDERSON: So right now, that
17 person could also do a peer review right now under
18 the current definition of independence in the
19 standard. The consensus committee that develops
20 that standard, which involves NRC and vendors and
21 utilities and national lab members, just as all
22 consensus committees do, has not thought that that
23 is a sufficient problem to reframe the definition
24 of independence.

25 I think the consensus is that PRA

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1 people are sufficiently hard on each other that
2 it's not going to be a problem.

3 CHAIRMAN STETKAR: Well, that's why I
4 didn't want to get down to individuals.

5 MS. ANDERSON: Right.

6 CHAIRMAN STETKAR: But I think that's,
7 that's probably the best that you can say right
8 now. So if somebody has a problem with it, it's --

9 MS. ANDERSON: We need to revise the
10 standard if it winds up being a problem.

11 CHAIRMAN STETKAR: Yeah, it's a bigger
12 problem.

13 MS. ANDERSON: But we have not had a
14 problem with peer reviews.

15 CHAIRMAN STETKAR: Well, I read that.
16 You said to date you haven't really have any
17 experience of that type of phenomena going on but
18 --

19 MS. ANDERSON: Right. I'd imagine if
20 it did creep up, the standards committee would be -
21 -

22 CHAIRMAN STETKAR: I'm just concerned
23 looking out into the future, because as I said, as
24 new people, a lot of us who have been around for an
25 awful long time are pretty crusty. I was looking

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1 for comments, but I didn't get any, and tend to be,
2 you know, violently independent in some sense.

3 But as new engineers come in, it can
4 get indoctrinated with sort of the corporate way of
5 doing things and it might be good to, you know, the
6 guidance to say I needed at least one person from
7 some other corporate entity to help counterbalance
8 that. I don't know what the solution is.

9 MS. ANDERSON: Yeah. As a matter of
10 how this is actually being implemented, I don't
11 think any utility will ever be able to pull
12 together a team fully of people from their own
13 utility. They're going to be using outside
14 contractors from other utilities. It's very hard
15 to get those kinds of resources from one utility at
16 once.

17 CHAIRMAN STETKAR: Yeah, yeah.

18 MS. ANDERSON: So I think that will
19 just happen as a matter of course.

20 CHAIRMAN STETKAR: Okay.

21 MS. ANDERSON: So as far as other open
22 issues, I think we already talked about the ability
23 of the team to issue new findings. The final one
24 is how we understand how we treat closed findings,
25 and that's again something we'll be talking about

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1 at the October workshop with respect to how we
2 expected those closed findings will be dealt with
3 in licensing applications.

4 And that's all I had on F&O closure,
5 and unless there are any questions, I'll move on to
6 the vetting panel.

7 CHAIRMAN STETKAR: Any other closure
8 questions?

9 MEMBER POWERS: Well I --

10 CHAIRMAN STETKAR: Because we're going
11 to switch topics here pretty dramatically.

12 MEMBER POWERS: The issue of
13 independence has always been in question in regard
14 to the PRA, for PRA reviewers, and a lot of the
15 reality of the situation is that PRA, when it first
16 was introduced in the nuclear community,
17 constituted a fairly closed set of people that
18 weren't just a lot of practitioners. I'm wondering
19 if that's still the case, or has PRA become more
20 widespread through different industrial
21 organizations. Not a nuclear organization, that
22 there is a better cadre of potential reviewers?

23 MS. ANDERSON: I think we've definitely
24 improved our cadre of potential reviewers recently,
25 and we have seen PRA used. Not necessarily to the

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1 extent that it is in the commercial nuclear
2 industry, but it's starting to reach out to other
3 industries, even in the defense side of nuclear,
4 so the non-commercial side. There's been more
5 reach.

6 So I think we're also getting more
7 influx from other industries of people who've
8 worked on PRA. Say for NASA, they come to the
9 commercial side, and so we get those outside
10 inputs.

11 MEMBER POWERS: Yeah, based on my
12 experience drawing from NASA, and PRA is probably
13 not a step forward.

14 MEMBER BLEY: I think that's right.
15 But there's one thing that might be worth pointing
16 out. I've heard from a number of people at
17 utilities, utility PRA groups, that they think
18 there's a great deal of learning that happens by
19 people from different utilities going, coming
20 together and being on one of these review panels
21 for another.

22 And it seems a good process to me, and
23 I think there's a lot of competence growing within
24 the utilities in this area now.

25 CHAIRMAN STETKAR: Mary.

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1 MS. DROUIN: This is Mary Drouin of the
2 staff. Is this on?

3 CHAIRMAN STETKAR: Yep, yes it is.

4 MS. DROUIN: The one thing I think that
5 needs to be discussed a little bit or clarified is
6 if you go back 20-30 years in time when we did peer
7 reviews, peer reviews were based on our expertise
8 and our knowledge. So that's not what happens with
9 the peer reviews today.

10 Of course, our expertise and knowledge
11 are a critical factor, but the peer reviews are
12 done against a standard. They're done against very
13 specific criteria, and that to me helps in why, you
14 know, you can have people from a common
15 organization, you know, do the peer reviews because
16 they're doing it against the standard and because
17 of that, you know, the NRC, when we look at these
18 standards, even though we participate in developing
19 them, when we review them, we review them very,
20 very seriously.

21 I mean we go line by line because, you
22 know, we're really putting our trust and faith that
23 the standard is really defining what is, you know,
24 a technically acceptable PRA, and your PRA, your
25 peer review is done against that standard. That's

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1 the only thing I wanted to add.

2 CHAIRMAN STETKAR: Thank you. Anything
3 else for Victoria? At least Victoria on this
4 topic.

5 MS. ANDERSON: We'll bring up the third
6 one here.

7 CHAIRMAN STETKAR: Yes.

8 MEMBER KIRCHNER: Quickly. So you've
9 converged from 115 findings down to 14. Can you
10 just make this tangible with some examples for the
11 uninitiated, and why are there 14 and why wouldn't
12 you have new findings?

13 MS. ANDERSON: Well, the process right
14 now as written does not allow for issuance of new
15 findings. So that's why there weren't new
16 findings. Instead what happened was, I mean the
17 addition -- the other less thing --

18 MEMBER KIRCHNER: Are those 14
19 sacrosanct or are they, you know, this is by
20 process of elimination across the industry that
21 we're down to 14?

22 MS. ANDERSON: No, no, no. So this is
23 just at one plant.

24 MEMBER KIRCHNER: Just for one plant,
25 okay.

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1 MS. ANDERSON: Just one plant.

2 MEMBER KIRCHNER: So this is just for
3 the pilot.

4 MS. ANDERSON: This is just for
5 Limerick. There were 115 findings and the 14 were
6 just the ones that they could not close, based on
7 the information they had available.

8 MEMBER KIRCHNER: So of those 14, can
9 you give some examples and do you find those at
10 other plants?

11 MS. ANDERSON: Don probably could. He
12 was at that --

13 MR. VANOVER: Yeah. There was -- the
14 NRC observers were there, so they might be able to
15 chime in as well.

16 CHAIRMAN STETKAR: Also remember this
17 is a public meeting, so don't get too specific with
18 Limerick.

19 (Simultaneous speaking.)

20 MEMBER KIRCHNER: --just what you've
21 learned from this process and what stands out --

22 MR. VANOVER: The process was valuable
23 in that we had put together how we thought we had
24 addressed the finding and closed the finding, and
25 the review team came in and looked and said hey we

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1 -- you know, we think you did -- you almost got it,
2 but you need to document a couple of things a
3 little bit better.

4 So those were some of the partially
5 resolved ones, and similarly some of the 14 open
6 ones were, you know, you didn't look at one aspect
7 of the requirement like junction boxes, for
8 example. We had to include that in the fire PRA.
9 So they're specific recommendations from all the
10 partially resolved and open issues that we'll have
11 to address moving forward. Similar like if they
12 were still findings.

13 MEMBER KIRCHNER: I didn't -- I wasn't
14 specific enough. So generically, they're looking
15 at another plant, don't identify one, Plant B. Do
16 you expect that you would find the same -- going
17 through this process the same, roughly the same
18 number of remaining open findings, and would they
19 be in the same class or would they --

20 MS. ANDERSON: I don't know.

21 MR. VANOVER: As we improve the process
22 and get lessons learned from each one, we'll get
23 better and better as we go forward. So I would
24 expect the number to go down moving forward as we
25 learn how to address the issues better.

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1 MS. ANDERSON: And I'd imagine the
2 classes of open findings won't, there won't be any
3 correlation between plants. It will just -- it
4 will be completely plant-specific. All right.
5 Anything else on the F&O closure?

6 CHAIRMAN STETKAR: Mr. Dinsmore.

7 MR. DINSMORE: Yeah hi. This is Steve
8 Dinsmore from the staff. I was one of the
9 observers. I can give you a specific example.
10 There was a finding that they should evaluate the
11 impacts of flood on all the human actions which are
12 used in the flood PRA, and they did evaluate most
13 of them, but they didn't evaluate the impact on the
14 control room actions.

15 So the finding was left open and it
16 said that you did something but you didn't do as
17 much as we expected. So that's a specific.

18 CHAIRMAN STETKAR: Thanks, good. No,
19 I'd try to stay away from too many specifics
20 because sometimes power plants don't like that.

21 MS. ANDERSON: Right, yep.

22 CHAIRMAN STETKAR: Anything else for
23 Victoria on this topic, and we'll switch over to
24 the vetting panel.

25 MS. ANDERSON: All right. So the

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1 methods review process. Well, I will start talking
2 while Tom's getting that set up. So the issue that
3 we were trying to deal with with the methods
4 vetting panel, that we've had a pretty substantial
5 increase in the scope of PRAs supporting licensing
6 applications in the past five to ten years, the
7 most notable being the fire PRA has developed for
8 NFPA-805.

9 When we developed those fire PRAs for
10 805, we learned that there was a high volume of new
11 methods, tools and data that would be needed to
12 achieve realism. Reg Guide 1.200 doesn't address
13 the approach for ensuring NRC staff familiarity
14 with the methods that are being used, and that
15 really led to some delays and difficulties in the
16 805 process.

17 We said that we wanted to address this,
18 so that we didn't see this happen again, and
19 determined that we needed a process for making new
20 methods available for regulatory applications more
21 quickly than we did before, and that this would
22 speed improvement of the state-of-the-art in
23 licensee PRAs, so we thought this would be a win
24 for everybody all around.

25 So the proposed process of review.

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1 First, a new method is identified. We would have a
2 joint industry NRC vetting panel that would
3 determine the appropriate level of review. That
4 review process would be undertaken and then the
5 final decision would be sent to NRC for acceptance.

6 The vetting panel is composed of three
7 to four industry and three to four NRC PRA experts.
8 They are supplemented by subject matter experts as
9 necessary. So if there is a fire-specific method,
10 they may bring a fire modeling expert from each
11 side. They're charged with assessing the utility
12 of previous method reviews.

13 So, you know, has something already
14 undergone some sort of public comment period and
15 internal review by NRC, or is it an EPRI document
16 that's undergone some sort of peer review?
17 Supposed to look at method maturity and various
18 other attributes. They're charged with determining
19 the appropriate review PAT, and in some cases
20 conducting a brief review of the method.

21 CHAIRMAN STETKAR: And it is intended,
22 this will come up later, it is intended that the
23 vetting panel themselves can review the method?

24 MS. ANDERSON: Yeah, they could decide
25 that.

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1 CHAIRMAN STETKAR: And they could make
2 -- as I understand it, they ultimately make the --
3 they always make the decision. So for example if
4 you all are the vetting panel and you decide that
5 you don't collectively have enough expertise, you
6 can convene a separate group to perform the review,
7 and the three of us are on that group.

8 We prepare a report. We make a
9 recommendation, but you the vetting panel
10 ultimately decide on whether or not that's
11 appropriate to send to the staff; is that right?

12 MS. ANDERSON: Right, yes.

13 CHAIRMAN STETKAR: So the ultimately
14 pass-on decision always rests with the vetting
15 panel?

16 MS. ANDERSON: Right.

17 CHAIRMAN STETKAR: Regardless of
18 whether or not you're the technical expertise?

19 MS. ANDERSON: Right.

20 CHAIRMAN STETKAR: Okay. Then I got
21 it. Thank you.

22 MS. ANDERSON: All right. So some of
23 the considerations that we laid out in our document
24 to sort of guide the vetting panel, even though we
25 of course expect them to rely on their own

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1 technical expertise, just we laid out some
2 framework for some thinking about methods.

3 You know, looking at the source of the
4 method. Was it developed independently by one
5 contractor, and was it possibly industry consortium
6 research with lots of input? How mature is the
7 method? Is this is a method that's been deployed
8 internationally for a good number of years and we
9 just haven't used in the U.S. yet?

10 Has it been applied already? What's
11 the pedigree? How complex is it? These are all
12 things that tell you well how much review does it
13 need? You have something that's already been used
14 for a long time if the source involved a large
15 group.

16 If it involved NRC, possibly it doesn't
17 need as much of an in-depth review, whereas if it
18 was independently developed and there hasn't been
19 NRC involvement or broad industry involvement, the
20 level of review may need to be higher. Not
21 definitive, but these are just considerations.

22 CHAIRMAN STETKAR: I might as well ask
23 now, because it's sort of relevant. In the
24 guidance, and this will follow through later for
25 the staff, is this Table 2-1 that defines six

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1 groups, and I think tries to do what you just said
2 very efficiently and what I understood as I read
3 through the guidance.

4 But then I got confused about what the
5 heck am I going to do with this table? It seems to
6 -- why do we need that kind of specificity on your
7 other groups, because it strikes me as folks will
8 start arguing now about whether I have -- it's in
9 Group D or Group E, rather than just doing what
10 needs to be done.

11 MS. ANDERSON: Right, and I believe
12 that table, it says "Suggested Process Options," on
13 the table --

14 CHAIRMAN STETKAR: No. This is
15 actually a table that's defined as definition of
16 new method groups.

17 MS. ANDERSON: Right, and then you look
18 at the column where it says "Available Process
19 Options Suggested"?

20 CHAIRMAN STETKAR: Yeah, yeah.

21 MS. ANDERSON: So it's saying this is
22 where we suggest you might want to think about
23 putting it. It's to try to achieve some sort of
24 consistency. The intent is -- and since you'll
25 notice there's a lot of bleed over between the

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1 process options.

2 CHAIRMAN STETKAR: There is.

3 MS. ANDERSON: And so that's why we're
4 hoping, you know, people don't sit there and argue
5 over well D or E. Ultimately, we just need to
6 decide on a process option.

7 CHAIRMAN STETKAR: See my approach, I
8 came at it from the other way, is by having the
9 table, you almost force people to argue about which
10 box does it fit in. By not having the table, I
11 read through the guidance, the text of the
12 guidance, and I pretty much understood what the
13 intent was.

14 MS. ANDERSON: I think you --

15 CHAIRMAN STETKAR: Without the table.
16 When I got to the table, I started to have now
17 conflicts in my own head about how will this be
18 used, and will it now start discussions, non-
19 productive discussions about which of these boxes
20 does it belong in?

21 MS. ANDERSON: Well, I will say in our
22 pilot process we didn't have any arguments about
23 the table. So we've at least succeeded there. I
24 think the idea behind the table is that we'd bring
25 some consistency to the process, so there would be

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1 something in there.

2 CHAIRMAN STETKAR: Okay. I guess we'll
3 see how it works. It just -- my experience, every
4 time you create boxes and force somebody to put
5 something in a box, somebody's going to disagree
6 and argue, and you wind up arguing about boxes
7 rather than doing things.

8 MS. ANDERSON: Yep, and that's why -- I
9 mean that's why I said there's some overlap in
10 process options.

11 CHAIRMAN STETKAR: A lot of overlap.

12 MS. ANDERSON: But if you're arguing --
13 but if you're arguing over are we in D or E and you
14 say well those process options are the same, let's
15 talk about that. If we all agree it's either D or
16 E, we can go and look at the process options and
17 let's go from there.

18 CHAIRMAN STETKAR: Yeah, but you know
19 if I'm in D, I need a 4A or a 5A, or if I'm in E I
20 need a 4 or a 6 and my God, 6 is different than 5A
21 and --

22 MS. ANDERSON: Yep, but ultimately what
23 the panel needs to decide is the process option so
24 --

25 CHAIRMAN STETKAR: Yeah, and I got that

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1 without the table.

2 MS. ANDERSON: All right. Well, maybe
3 we're trying to give the vetting panel too much
4 guidance, but we wanted to try to make sure there
5 is some consistency.

6 CHAIRMAN STETKAR: That's my whole
7 point, is that because if the staff will come up
8 and has tables of their own, you start now arguing
9 about your table versus my table and my intent of
10 having my table versus your table --

11 MS. ANDERSON: Well there definitely
12 shouldn't be that, because we're supposed to just
13 be getting NRC endorsement of our guidance
14 document. So the process options, we know one sort
15 of has sort of the arrow going down to indicate
16 more scrutiny and review. You could have no
17 further review needed. We envision that would be
18 in the case if there was a collaborative EPRI-NRC
19 document that was released, and everybody had been
20 involved from the get-go.

21 There really may not be any review
22 other than the vetting panel to say that there's
23 been lots of involvement, lots of review. Let's
24 forward this to NRC for acceptance. You could go
25 all the way down to a full methods review panel,

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1 where a joint industry-NRC group looks at the
2 method in detail. So there's a wide variety of
3 options available for the vetting panel to suggest.

4 So the next steps are to complete our
5 pilot, which we started in June. We have three
6 fire PRA methods and an EPRI report that we're
7 looking at. Now it's on hold pending resolution of
8 a fee waiver issue, which I think we have our hands
9 around and we're going to deal with.

10 Following the pilot, we need to resolve
11 some open issues. One of those is understanding
12 the role of the vetting panel. As we noted
13 earlier, the vetting panel could do a review. But
14 their primary purpose is to determine what level of
15 review is needed, and we had some difficulty in the
16 pilot process constraining it to that, and we
17 started moving into the review right away, rather
18 than deciding on that.

19 There's also an open issue related to
20 independence of the vetting panel and the NRC draft
21 staff position. There was some language about
22 licensees who would be using the method couldn't be
23 on the vetting panel, and the concern we raised is
24 well let's say I'm at this utility. I'm not
25 planning on using it now.

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1 Does that mean I can never use it,
2 since I sat on the vetting panel? That's a pretty
3 strong disincentive for the utilities to let people
4 participate, and that's not what we want. So I
5 think there are ways to address that issue.

6 CHAIRMAN STETKAR: On the other hand,
7 you don't necessarily want, and I saw some place.
8 I get lost, because I read a lot of stuff over the
9 last week and a half. Something saying that the
10 developer of the method could be on the review
11 panel, which strikes me as --

12 MS. ANDERSON: I don't -- I think
13 they're supposed to be involved in the process when
14 you have a methods review panel.

15 CHAIRMAN STETKAR: There was one --

16 MS. ANDERSON: But they're like the
17 advocate.

18 CHAIRMAN STETKAR: There was one thing
19 that I read that had that approach, that they --
20 and you certainly do want that. I mean, you know,
21 you want the advocate to come and defend their
22 case.

23 MS. ANDERSON: Right.

24 CHAIRMAN STETKAR: But there was
25 something that I read that said that they --

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1 because the expertise is so limited, you want
2 someone to -- that person to be on that review
3 panel.

4 MS. ANDERSON: I think they're supposed
5 to be at the meetings. I'm not sure if they're
6 supposed to be on the review panel. I would have
7 to look at the language again. J.S. is standing
8 up. He probably has it sitting right in front of
9 him.

10 MR. HYSLOP: J.S. Hyslop of the staff.
11 Yeah, if you're -- if you participate in developing
12 the method, then you're not on the review panel. I
13 don't remember seeing anything to the contrary or
14 even thinking about them in the meetings.

15 MS. ANDERSON: Yeah. I think it's just
16 specified that they participate in the meetings to
17 answer questions that the vetting panel may have.

18 CHAIRMAN STETKAR: It may be, I may be
19 remembering something I saw in comments.

20 MS. ANDERSON: Okay. If there's
21 something in the document, we should definitely
22 address it, because I don't think that was the
23 intent.

24 CHAIRMAN STETKAR: I have to look at my
25 notes. Okay. I'll look up my notes on that at the

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1 break.

2 MEMBER BLEY: I just went back to the
3 place John was talking about, that table. The
4 introductory paragraph seems to make it clear that
5 you're after the process steps to be done. But you
6 know, if anything, a few more words in that
7 introduction might take care of those kind of
8 worries.

9 I could imagine those arguments coming
10 up. But you seem to have covered it from what I
11 can see there.

12 MS. ANDERSON: Okay. We'll take a look
13 at it and see if we --

14 CHAIRMAN STETKAR: For the record, what
15 I was remembering Victoria is something from
16 specific industry comments on draft NRC position on
17 industry PRA technical adequacy documents dated
18 June 9th of this year.

19 MS. ANDERSON: Okay.

20 CHAIRMAN STETKAR: And one of those
21 comments, and that's all I have. So I don't know
22 who it came from. It says -- on page ten of the
23 document states "This technical expertise includes
24 experience in the work," yada yada yada.

25 "As written, this requirement is likely

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1 unable to be possible to meet. Suggest replacing
2 the statement with the panel members' technical
3 knowledge should include general knowledge of the
4 proposed method or similar methods, and when
5 needed, the panel should be supplemented with other
6 experts, which may include the developer of the
7 method and at least one other non-commercial
8 competitor."

9 MS. ANDERSON: Okay. When we put
10 "developer of the method," I think what we meant is
11 the entity that developed it, not necessarily the
12 individual. So I'll have to go back and look at
13 exactly what we meant --

14 CHAIRMAN STETKAR: Okay. So that's
15 fairly subtle but --

16 MS. ANDERSON: Yes, it is.

17 (Simultaneous speaking.)

18 MS. ANDERSON: I knew what I meant when
19 I wrote it.

20 CHAIRMAN STETKAR: You wrote it?

21 MS. ANDERSON: I think I did actually
22 but --

23 CHAIRMAN STETKAR: There you go.
24 That's where I stumbled across because, you know,
25 that doesn't -- that's troublesome.

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1 MS. ANDERSON: Okay, understand.

2 CHAIRMAN STETKAR: And in many cases it
3 might be not an individual. I mean --

4 MS. ANDERSON: Right.

5 CHAIRMAN STETKAR: Anyway, you
6 understand.

7 MS. ANDERSON: Yes. I'd have to go
8 back and look at that in context. So just the
9 final open issue, and again we'll be working with
10 the staff at our workshop this coming October on
11 this, is what level -- where NRC review fits in
12 with this. When we wrote our guidance document, we
13 suggested that they review the output of the
14 vetting panel work, not the method itself.

15 I think we're still trying to reach
16 consensus on that, rather than -- as opposed to a
17 complete duplicative review of the method again. I
18 believe that is all we have on vetting panel.

19 CHAIRMAN STETKAR: Any questions for
20 Victoria on the vetting panel? Any final
21 questions, because we're going to take a break and
22 the staff will come up now and go through these
23 topics. So while we have NEI and other members of
24 the industry up here, any other questions for them?

25 (No response.)

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1 CHAIRMAN STETKAR: If not, amazingly
2 enough we're close to being on time. Let's take 15
3 minutes and reconvene at 3:15. We're recessed
4 until then.

5 (Whereupon, the above-entitled matter
6 went off the record at 3:00 p.m. and resumed at
7 3:15 p.m.)

8 CHAIRMAN STETKAR: We are back in
9 session, and before we start this, I have been told
10 I've been remiss. We some time ago were joined by
11 another ACRS member, Matt Sunseri. I don't think
12 we got him on the list. Anybody else trickles in,
13 you're going to get ignored. With that, we'll
14 switch gears and hear from the staff on these
15 topics. I don't know if anyone. Bill, do you want
16 to make some introductory remarks?

17 MR. DEAN: Yes. I appreciate it.
18 Yeah. I just have a few opening remarks. Good
19 afternoon, everybody. We really appreciate the
20 opportunity to discuss with you NRC's Risk-Informed
21 Steering Committee activities. You got to hear, I
22 think earlier this afternoon, some good information
23 and feedback from our counterparts in industry, and
24 we have a number of our staff that are queued up to
25 talk to you about some of the same very topics that

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1 industry just got finished talking to you about.

2 But I thought it would be worthwhile to
3 provide a little bit of context in terms of the
4 Risk-Informed Steering Committee. So my
5 predecessor Eric Leeds, back in 2014, established
6 the Risk-Informed Steering Committee to provide
7 some guidance and support to the staff in terms of
8 the risk-informed decision-making activities.

9 In particular, there had been a letter
10 sent to us in late 2013 from industry, that
11 expressed to the chairman a number of concerns
12 about excessive conservatisms, for example, and
13 fire PRAs and the lack of progress that the agency
14 was making in terms of advancing the ball, so to
15 speak on risk-informing some of our regulatory
16 processes.

17 So Eric formed this Risk-Informed
18 Steering Committee which is composed of NRC senior
19 management representing the Offices of NRO,
20 Research, NMSS, NSIR and then also a regional
21 representative. In fact, I was the regional
22 representative in the early formation of that. The
23 charter of the Risk-Informed Steering Committee was
24 not dissimilar to an earlier version of this that
25 was established back in the late 1990's, where we

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1 had a Risk-Informed Steering Committee that was
2 formed again to try and support the advancement of
3 risk-informed practices and to our regulatory
4 processes.

5 But I would offer that this version of
6 the Risk-Informed Steering Committee was formed in
7 great extent in response to the industry
8 frustrations that were outlined in that letter. So
9 at the time when we formed the Risk-Informed
10 Steering Committee, our major focuses were on
11 technical adequacy of PRAs and uncertainties in
12 risk-informed decision-making. Those were our
13 primary areas of focus.

14 But with the PRA quality issues
15 emanating out of primarily NFPA 805 review issues
16 and the issue with respect to technical or
17 uncertainties associated with aggregation of core
18 damage frequency contributors from multiple
19 initiators. So those were our two primary focus
20 areas for some period of time, and we formed
21 working groups.

22 I think these working groups have
23 briefed you in the past on their activities, a
24 working group on Technical Adequacy and a working
25 group on Treatment of Uncertainty. We will talk a

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1 little bit more about some of the activities going
2 on with those working groups later this afternoon.

3 But since that time, I would offer that
4 the focus of the Risk-Informed Steering Committee
5 has evolved, and primarily to expand the role of
6 the Risk-Informed Steering Committee in helping to
7 steer and drive risk-informed activities throughout
8 the agency and not just focus on those two working
9 group activities.

10 We're taking a more active role in
11 terms of setting strategic direction, as well as
12 providing feedback to the staff on various
13 initiatives that are in place or that we believe
14 should be in place to help advance the ball on
15 risk-informed decision-making.

16 We also provide the primary regulatory
17 interface with industry's Risk-Informed Steering
18 Committee, and in meetings that we have on
19 approximately a quarterly basis we engage the
20 industry and listen to their concerns relative to
21 the use of PRA. We discuss what initiatives can be
22 taken by the NRC to incentivize industry, to
23 continue to develop PRAs, to help reduce
24 uncertainty and provide a framework for regulatory
25 decision-making, and discuss industry actions

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1 necessary to expand the future use of PRA to
2 support regulatory decision-making.

3 And then specifically, I would offer
4 that in response to comments that we got from the
5 ACRS on SECY-15-0168, which was the risk management
6 regulatory framework SECY, which I'm sure everybody
7 is very similar with, we fully agreed with ACRS'
8 views that continued enhancements to the usage of
9 risk-informed regulatory approaches should be
10 pursued in future regulatory activities. That's
11 exactly what I believe the Risk-Informed Steering
12 Committee is doing today.

13 So I'm going to kind of tee up for you
14 what we're going to talk to you about. First, Mike
15 Montecalvo and Sunil will talk to you about where
16 we are with crediting mitigating strategies and
17 risk-informed decision-making. In my mind, that's
18 a really significant activity for the agency and
19 industry, and I think that we've been working
20 fairly collaboratively with industry on trying to
21 identify how and best to incorporate FLEX and be
22 able to provide credit for various regulatory
23 processes.

24 Stacey Rosenberg is going to talk to
25 you about some risk-informed licensing activities,

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1 as well as where we stand in PRA technical
2 adequacy. Adrienne Driver is going to talk to you
3 about the F&O closure process, so I think you heard
4 some of that earlier this afternoon from industry.
5 Talk to you about our perspectives and views on how
6 that's going.

7 J.S. Hyslop will talk to you about the
8 vetting panel process, which was the last topic
9 that you all talked about, and then Mary Drouin
10 will talk to you about where we stand with NUREG-
11 1855 and how we're developing training related to
12 the treatment of uncertainties in risk-informed
13 decision-making, which we think is very important
14 training to help educate our management and staff
15 on that regard.

16 So with that, as far as opening
17 remarks, let me turn it over to Sunil and Mike.

18 CHAIRMAN STETKAR: Before you throw
19 them under the truck, I'm glad to hear you say
20 that the Risk-Informed Steering Committee is kind
21 of taking over the role of the agency's vision,
22 let's say, in using PRA going forward. Everything
23 that we hear about today is reaction to the current
24 state of affairs.

25 Where do you stand on that vision in

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1 the sense of Near-Term Task Force Recommendation 1
2 or the risk management regulatory framework? In
3 other words, looking 10 to 15 years down the road,
4 where will the agency be in terms of using risk
5 information and what we need to achieve that?

6 MR. DEAN: Right. So I know you're
7 aware of --

8 CHAIRMAN STETKAR: And not so much also
9 for currently operating plants, but looking at new
10 plants that might be coming in, next generation
11 reactors and how we use risk in terms of their
12 licensing process and so forth?

13 MR. DEAN: Sure. So I know you're
14 fully aware of the engagement with the Commission
15 and direction we got from the Commission relative
16 to Recommendation 1 and relative to the risk-
17 informed decision-making framework, and you know, I
18 fully agree with the direction the Commission gave,
19 which was basically, you know, these would be great
20 things to do if the time and effort and resources
21 were available to do that, you know, in a perfect
22 world.

23 But this is not a perfect world, and so
24 I think the Commission's direction to us, both in
25 the SRM on the SECY-15-0168, as well as the SRM

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1 that they provided us on Project Aim, both of those
2 encourage the staff to continue to pursue
3 integration of risk insights and risk information
4 to our various risk-informed decision-making
5 activities.

6 So I'm a very strong proponent of that,
7 and I think that's one of the reasons why we're
8 trying to leverage the Risk-Informed Steering
9 Committee to help embody and engender that more
10 fully throughout the -- throughout the agency and
11 so I think, you know, later this afternoon you'll
12 hear some of the examples of areas where the Risk-
13 Informed Steering Committee is influencing and
14 helping to push us forward in that regard.

15 CHAIRMAN STETKAR: Okay, and again this
16 is a Subcommittee meeting, so I'm able to make my
17 own independent non-ACRS comments. I think that
18 the Subcommittee would be interested, as we go
19 forward, to hear not so much reaction to current
20 state of affairs, but where we're headed. If there
21 is a plan and a vision, you know, where are we
22 going in those directions?

23 Because there's also this argument that
24 says if we want to improve the use of risk
25 information in the regulatory and licensing

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1 process, perhaps the best time to set the stage to
2 do that is when we don't have any immediately
3 pressing new licensing issues, when we have time to
4 actually work through the process, rather than
5 being pressed if something suddenly comes on the
6 table that we need to get a regulatory decision
7 out. And so --

8 MR. DEAN: So I would offer that
9 certainly the framework of our regulatory framework
10 as well as where industry stands. Obviously, the
11 past capability to do that for new reactors is I
12 think more substantial than for operating reactors
13 just because of the history and the regulatory
14 framework.

15 I mean I'll give you a good example.
16 One of the things that I was interested in
17 pursuing, you know, looking at Project Aim and
18 looking for ways that we can be more effective and
19 more efficient was to back off of the use of SPAR
20 models and try and establish a regulatory framework
21 that would allow us to utilize licensee PRA models.

22 And I think unfortunately, as we did
23 cost-benefit analyses and interfaced with
24 industry, there just wasn't a whole, (a) a whole
25 lot of energy behind it. I will allow, for

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1 example, Bob Bement, who just talked with you, was
2 certainly a proponent of it and we were talking
3 about doing a pilot with them.

4 But there, I think, were just too many
5 roadblocks and too much inculcated history that to
6 try and unravel all of that at this particular
7 point in time was just going to be too challenging.
8 That being said, in the new reactor area, we're
9 still looking at pursuing that. The environment
10 there certainly supports it better because, for
11 example, with the AP1000, you have Westinghouse
12 that basically manages the PRA model.

13 So you really just have one entity to
14 interface with as opposed to multiple, and so --
15 and the fact that the regulations require them to
16 have it, right. PRA is still a voluntary
17 initiative really for current operating fleet. So
18 I think I see a better future for that in the new
19 reactor world than the operating reactor.

20 But that being said, I still think that
21 we can make tremendous strides and inroads into
22 leveraging of the current state of the art of PRA
23 into our operating reactor decision-making
24 processes.

25 CHAIRMAN STETKAR: Thanks Bill.

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1 MR. DEAN: Okay.

2 CHAIRMAN STETKAR: Now we can throw
3 them under the truck.

4 MALE PARTICIPANT: Here comes the bus.

5 CHAIRMAN STETKAR: Who's up first?
6 Sunil?

7 MR. WEERAKKODY: Yeah. My name is
8 Sunil Weerakkody. I'm the chief of the PRA
9 Operations and Human Factors Branch in NRR, and
10 Mike is in my branch. He's the NRC's lead to
11 evaluate how we could credit --

12 CHAIRMAN STETKAR: Sunil, just make
13 sure. Pull the mic closer to you and then don't
14 hit it with your paper, just so we pick you up.
15 Thank you.

16 MR. WEERAKKODY: So Mike has the lead
17 to evaluate how we could be crediting FLEX
18 equipment, you know, with other applications,
19 regulatory applications in risk-informed decision-
20 making. Just as an introduction, you know, Mike
21 joined us several years ago, but he was an SRO at
22 Calvert Cliffs and also was the Director of Human
23 Performance.

24 So he has a great understanding of what
25 happens in plant, has been creating terms of, you

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1 know, working with rest of the staff and with EPRI.
2 So with that Mike, take it away.

3 MR. MONTECALVO: Excellent. Thank you,
4 Sunil. First thing I want to do is throw myself at
5 the mercy of the court by not providing you with
6 NEI 16-06 when we received it from NEI. So I will
7 do that. I will email it to John directly after
8 this meeting when I get back to my desk.

9 So today I'm going to provide a little
10 background of the project, the interactions that
11 we've had with industry, talk about the current
12 status of the project and then the next steps.
13 I'll go through this pretty quickly because we've
14 already talked about a lot of things in the first
15 presentation with industry.

16 So as we all know, Fukushima orders
17 required strategies to maintain and restore core
18 cooling, containment and spent fuel pool cooling.
19 The licensees installed the equipment to meet the
20 orders but as we've heard, they can be used for a
21 multitude of uses, during outages, during
22 functional equipment group maintenance windows, for
23 compensatory measures or additional defense-in-
24 depth.

25 As Bill said, the Risk-Informed

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1 Steering Committee directed us to -- for a short-
2 term effort to provide guidance for, credit for
3 equipment for risk-informed decision-making, and we
4 had a little bit of a sense of urgency because of
5 the plants that already installed the equipment.
6 They were implementing the strategies. The audits
7 were complete. We're not doing the TI-191
8 inspections.

9 So that the train was already moving.
10 So we needed to do a short-term effort to be able
11 to do this. So and as you know, we've been
12 providing credit on an ad hoc basis for this
13 equipment. But we really want to provide some
14 guidance to give some -- to provide some
15 consistency and transparency to what we were doing.

16 So NEI took the initiative to develop
17 the two white papers, and we've already talked
18 about those in some detail, and I'll just go with
19 the three-phase approach here. They had the
20 qualitative credit, the quantitative credit, which
21 is their decision tree-based approach, and then the
22 full incorporation of the PRA, which was an
23 addition when NEI 16-06 was submitted for
24 information to the NRC.

25 So this is a short time line of the

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1 interactions that we've had, and I won't spend a
2 lot of time on this either. But we've had a number
3 of public meetings and a lot of interaction with
4 NEI.

5 We've had, as we talked about before,
6 we've had a lot of comments from NRC stakeholders.
7 We did have a RIC technical session and the public
8 workshop that we held in March to discuss some of
9 the issues that the NRC had brought up with the
10 white papers, and I'll talk about that in the next
11 slide.

12 CHAIRMAN STETKAR: Mike, if I look at
13 this time line, and stop me if -- I think that it's
14 on here, what I'm think struggling with a bit is
15 NEI clearly said that they're not going to submit
16 16-06 or 16-08 or whatever the heck it is for NRC
17 endorsement.

18 If I look at your time link here and if
19 I look at the products on the time line, from my
20 perspective these are all focused on things that
21 are done for activities that do not constitute -- I
22 have to be careful here -- NRC reviews. Is that
23 correct?

24 In other words, none of the -- I don't
25 see anything here that says draft update to

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1 regulatory guide whatever. It's on inspection
2 procedures. It's on technical guides that are
3 down, you know, in the details that we at least at
4 ACRS never see, are never involved in.

5 MR. MONTECALVO: Right.

6 CHAIRMAN STETKAR: NOEDs and things
7 like that. Is it -- from the staff's perspective,
8 is it not intended that the industry would be able
9 to include -- I hate the word credit but I can't
10 come up with one better -- credit for FLEX
11 equipment in any other type of licensing activity?

12 MR. MONTECALVO: I don't --

13 CHAIRMAN STETKAR: That would receive a
14 more formal review by the staff, where the staff
15 needs actual coherent regulatory guidance that's
16 applied consistently?

17 MR. MONTECALVO: I don't think that's
18 the case, and like I said, we've been -- we have
19 been approving applications that have this
20 equipment or equipment similar to this. It looks
21 like I'm not answering your question.

22 CHAIRMAN STETKAR: No you're not,
23 because you've been -- what I hear you say is
24 you've been doing it on an ad hoc, piecemeal case-
25 by-case basis, and I thought that was one of the

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1 criticisms of the Near-Term Task Force in terms of
2 NRC regulatory process, that it ought not to be ad
3 hoc, piecemeal on a case-by-case basis, that there
4 ought to be some sort of coherent, consistent
5 guidance?

6 MR. MONTECALVO: Right. So that's what
7 we're embarking on currently, and that's what the
8 time line is trying to represent. The grayed out
9 areas that are shown on the side right now are the
10 things that we're up to the office director letter
11 to NEI.

12 So now we're -- we've -- we're taking
13 the -- what we've learned from the interactions
14 we've had with industry and the NRC stakeholders
15 and we're embarking on updating our own guidance to
16 be able to provide that transparency and the
17 consistency across the board on these, instead of
18 doing it on ad hoc basis.

19 CHAIRMAN STETKAR: Go ahead. I'll need
20 to think about this for a couple of minutes.

21 MR. MONTECALVO: Okay. So we're on the
22 next slide. So I want to talk a little bit about
23 the white papers and the workshop that we held. So
24 we received a lot of comments from different NRC
25 sources when we distributed those white papers.

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1 So we felt that the best and most
2 efficient way to have a good discussion about the
3 white papers was to get the technical experts from
4 the industry, technical experts from the NRC in one
5 room in a public setting, to discuss the major
6 issues that we had with that and have an open
7 dialogue.

8 So we set that workshop up for March.
9 We had great participation as you can see on the
10 slide from both the NRC and industry.

11 Really what we did was we took the 150
12 raw comments that we got and we distilled those
13 down into 21 major comments that we discussed at
14 the workshop, and overall the last two statements
15 are the NRC staff's feeling that the white papers
16 provide a framework to streamline the licensees'
17 requests for credit in a number of these
18 applications, and that they appropriately address
19 the large number of issues important to the staff
20 in those white papers.

21 So after the public workshop, NEI
22 revised the white papers revised the white papers
23 within input from the comments that we had. When
24 we received the revised white papers, we sent
25 those back to the staff members who had commented

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1 originally, and again we held -- this time we held
2 an internal workshop to discuss the remaining areas
3 of concern.

4 This wasn't -- we wanted to get to a
5 point where it wasn't a redline strikeout kind of
6 review of the document. We wanted to get the real
7 meat of what the staff's concerns were. That led
8 to the ultimately the letter that was issued from
9 building to NEI, thanking them for their efforts in
10 providing the quality input to and guidance for the
11 licensees to request credit for risk-informed
12 decision-making.

13 In this next slide I listed the areas
14 of concern, which I wasn't going to really go into
15 in too much detail unless you have specific
16 questions. But the first statement there is -- has
17 to do with a base failure probability that they use
18 in their decision tree.

19 The second was time margin
20 calculations. The third one had to do with
21 equipment reliability, and the last one, the fourth
22 one is on the diagnosis errors that are cognitive
23 aspects of the decisions.

24 Okay. So the areas of potential
25 credit, again I won't spend a lot of time on this

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1 either because it's -- you can probably come up
2 with this list. On the next slide, I'll just go
3 right to the next slide. This is our grid of what
4 we -- the priorities that we've given, the topics
5 that we've identified, the guidance that is
6 associated with that topic, the deliverables and
7 the dates that we have for completion target dates.

8 I wanted to identify one thing is that
9 we gave a high priority to some of the
10 communication efforts that we want to have with the
11 NRC staff, and especially some of the staff that
12 may not have been directly involved in review of
13 the white papers or may not really understand how
14 they're going to be used by the licensees.

15 So one of the things that we're going
16 to do in short order is we're going to be providing
17 an inspector newsletter, a comment or sorry, an
18 input to the inspector newsletter, so that we can
19 get that to the inspectors, because they'll be
20 seeing this on a daily basis or possibly on a daily
21 basis at the licensees, using these white papers.
22 Let's see. So the last --

23 CHAIRMAN STETKAR: Oka. Let me -- I'm
24 going to stop you here, because if I go back to
25 your color-coded chart there.

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1 MR. MONTECALVO: Okay.

2 CHAIRMAN STETKAR: And if I look across
3 the line that's about down, halfway down, it says
4 risk-informed license amendment request,
5 qualitative credit, quantitative credit, high
6 priority for both of those, and I see listed a
7 bunch of reg guides, Reg Guide 1.200, Reg Guide
8 1.174, Reg Guide 1.177 and some other stuff.

9 This to me says you're planning to
10 update those reg guides with guidance about how a
11 staff reviewer would review a licensee's
12 application that takes credit for this equipment,
13 right?

14 MR. MONTECALVO: That may be a little
15 misleading. The way we laid this out was that --
16 that's not what we intended. What we intended is
17 the topic, the priority of the topic, the NRC
18 guidance that you would use for that topic and then
19 the deliverable is really what we're looking at
20 actually changing or possibly changing as we
21 investigate what's needed.

22 CHAIRMAN STETKAR: I don't -- I'd like
23 to stop you right there. I don't understand the
24 word "deliverable." I understand what it means if
25 I'm driving a truck --

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1 MR. MONTECALVO: That's the actual, the
2 actual product that we would -- that we would --

3 CHAIRMAN STETKAR: Whose product? Your
4 product?

5 MR. MONTECALVO: Our product, yes.

6 CHAIRMAN STETKAR: Which would be a
7 safety evaluation?

8 MR. MONTECALVO: No.

9 CHAIRMAN STETKAR: It would be if it's
10 a license amendment request.

11 MR. MONTECALVO: So this would be the
12 guidance that an NRC staff member would use if a
13 risk-informed license amendment request.

14 MR. WEERAKKODY: So I mean in the
15 column that look at the NRC Guidance, you see a
16 number reg guide. What we are saying here, what we
17 told industry and what we're saying here is that
18 there is no need to update that reg guide. What is
19 in that reg guide will apply any time a licensee
20 uses FLEX equipment to take credit.

21 So right now, we have a couple of
22 applications and license amendment requests under
23 review, and when we do those reviews, we use the
24 existing reg guides, and what we have concluded is
25 there's no need to update those reg guides. So the

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1 documents that we have to update are more lower
2 tier documents.

3 MR. GIITTER: John, I don't know if
4 Mike made it clear, but for each area that he
5 talked about applying FLEX credit to, we would be
6 developing application-specific guidance, okay. So
7 that's in essence the product that he's referring
8 to.

9 MEMBER BLEY: These will ISGs at first
10 and then turn into something else later or part of
11 Chapter 19 or what?

12 MR. MONTECALVO: I think it depends on
13 the application. If you look at the first or
14 actually the second block there, where you have --

15 CHAIRMAN STETKAR: Let me just stop.
16 I'm a licensee. I want to come with a risk-
17 informed license amendment request saying that I
18 want to move maintenance on my diesels from
19 shutdown to power operation and what I'm going to
20 use as part of the justification for that is I'm
21 going to stage one of my FLEX diesel generators
22 there and have it available to be hooked up.
23 Please give me credit for doing this.

24 Now what guidance is the staff going to
25 use for reviewing that, and how are they going --

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1 how is the staff reviewer going to think about that
2 second part and I'm going to use my FLEX equipment
3 as partial credit for this? What guidance?

4 MR. MONTECALVO: So the guidance would
5 be the NRR-DRA technical guidelines that we
6 developed that are specific to providing credit for
7 FLEX in a risk-informed license amendment request.

8 CHAIRMAN STETKAR: So this will be
9 division of risk-informed, division of risk
10 assessment guidance that is at a lower tier than
11 anything that is formal regulatory guidance?

12 MR. MONTECALVO: It will be a
13 guideline. What we realized that when we looked at
14 these -- at these guidance documents, is they're
15 not specific on how you actually do the risk
16 assessment or specific credit for this equipment.
17 So as we looked at a different, the regulatory
18 guidance that we have, it's a very high level
19 document.

20 It doesn't get down into the weeds, and
21 for the daily, the day-to-day workings of what we
22 do, it's more based on individual guidance from
23 either branch technical positions or similar when
24 you get down to this level of providing a number
25 for the credit you should get, those types of

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1 things.

2 So for instance in notice of
3 enforcement discretion, IMC 0410 doesn't really
4 tell you how to do the risk assessment, to be able
5 to meet the thresholds. You're relying on the risk
6 analyst's abilities and the guidance that we have
7 in the RASP manual or other guidance to that risk
8 analyst to come up with that.

9 MEMBER BLEY: Let me turn it just a
10 little back to where John started earlier. His
11 application he's sending and he used what happens
12 after those white papers you've looked at, which we
13 understand will be NEI 16-06 and maybe 08. But
14 you're not reviewing those documents. So your
15 guidance won't say anything about if you follow
16 the techniques in NEI 16-06, that's a reasonable
17 way to go?

18 I'm confused about that. I don't know
19 if that's where John's tied up, but it's where I'm
20 tied up.

21 MR. WEERAKKODY: Let me -- I think as
22 opposed to speculating, I can give you a very
23 recent example of --

24 MEMBER BLEY: And maybe it's premature.

25 MR. WEERAKKODY: No, it's not

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1 premature. In fact, might just finish part of a
2 safety evaluation, whether it relates to the exact
3 thing, his same exact issue. We had one plant who
4 wanted to change the power outage time for a
5 component, and they came in with risk-informed
6 licensing actions. So APLA, that's Stacey's branch
7 took a look at well, did you do the risk assessment
8 in accordance with Reg Guide 1.200? That is the
9 standard, and we don't need a different standard.
10 That is the standard we would apply.

11 Then the other parties are on the same
12 thing and you credit FLEX, their operator manual
13 actions. In fact, one of the things our branch
14 did, which is Human Factors and Mike was the
15 reviewer, he looked at from the standard review
16 plan 13, that's the human factors review, whether
17 those manual actions are feasible, reliable.

18 So the reason we don't have to create
19 any additional guidance is our guidance, such as
20 the reg guides, are required. Now the white papers
21 that the industry put together will tell industry
22 what kind of information they should send in that
23 LAR.

24 So that's why Mike said these things
25 are happening in that, but because of the white

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1 papers, the licensees are going to be able to
2 streamline their inputs. Therefore, our reaction
3 will be more predictable and we have another
4 licensing action like that in-house today, and so
5 the reason we don't have to update Reg Guide 1.200
6 and I can go to the security, Reg Guide 5.81, we
7 believe that the guidance today is good enough.

8 We just start to evaluate the inputs
9 against those guidance. Licensees will use the
10 white papers to give us the right inputs.

11 MEMBER BLEY: Let's play some -- I
12 think I'm hanging up. Maybe I'm not. Maybe this
13 is simpler than it sounds. There were places where
14 maybe the PRA wasn't good enough, but now using
15 these review groups, they've reviewed what they've
16 done and they've said yeah, now it's appropriate.

17 Your risk-informed committee has looked
18 at what they've said and have, through a letter
19 from Bill, have said yeah, that's a pretty
20 reasonable approach. But there's nothing in those
21 things that challenges your guidance is what you're
22 saying, and if they meet the 1.200 requirements and
23 all these other things, using the ideas that have
24 been presented in the white papers, that should be
25 fine under the kind of guidance you're putting

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1 together.

2 You don't need anything special for
3 your reviewers to assure that they'll understand
4 that there are some kind of agreements sitting
5 here.

6 MR. MONTECALVO: Well, I think we're
7 getting a little hung up on the LAR example, and as
8 NEI stated, their white papers are -- we already
9 have established standards for a risk-informed LAR,
10 where you're taking quantitative credit for
11 anything, a human action, equipment, whatever it
12 is. Those do not change. They need to meet that
13 current existing standard.

14 So the things that -- the one area that
15 we thought that we needed to provide some guidance
16 to the NRC staff was when if a licensee came in to
17 ask for qualitative credit. They're not
18 necessarily quantifying something, but they want
19 qualitative credit to say here's a compensatory
20 measure that I'm going to take. I didn't quantify
21 in my PRA, but I want a qualitative credit for that
22 piece of equipment, and it just so happens to be a
23 FLEX piece of equipment.

24 So that's a gap, a small gap that we
25 identified, where we may need to provide some

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1 guidance to the NRC staff. But if you're -- if
2 you're coming in for quantitative credit for a
3 piece of FLEX equipment, it needs to be built into
4 your PRA per the Reg Guide 1.200 reg guide. So
5 that exists already and Mary's, you're ahead. I'm
6 glad.

7 CHAIRMAN STETKAR: Let me try it from
8 the other direction then. On your time line for
9 this, you've identified several distinct things
10 that need to be updated, like an inspection
11 procedure and the -- I always forget what RASP is
12 the acronym for but whatever it is, and division of
13 risk assessment technical guidelines, a specific
14 one.

15 Why do they need updating? What is it
16 about them that makes them so focused and special
17 that they need updating, when let's say I buy your
18 argument that the Reg Guides 1.200 and 1.174 are
19 appropriately high level, that I don't need to
20 update them? Why do these things need updating? I
21 mean this is a pretty long list in there.

22 MR. MONTECALVO: Yeah. These
23 documents, and I'll take the RASP manual for
24 example, that does provide specific guidance on how
25 you model different things in a PRA. So it is

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1 getting down to the level of how you do the risk
2 assessment, and even when the B5B equipment was
3 installed, we put specific, along with the RIS
4 2000-815, we put statements in the RASP manual that
5 said this is how you handle that equipment.

6 So that's where we need to -- we need
7 to update that guidance. The principle, the same
8 principles apply, but it is very specific to that
9 equipment.

10 CHAIRMAN STETKAR: But it's that
11 specific? I mean see, we don't -- the reason I'm
12 struggling is we don't see any of that stuff. We
13 see reg guides. I think, I thought we understood
14 reg guides, but and we see sporadically, I'll get
15 the dig in, interim staff guidance. We don't see
16 any of that, this other stuff that you're talking
17 about.

18 It's, I guess, on the one hand
19 surprising to me that it's that specific that it
20 says well, if I have something that's called B5B
21 thing I have to model it precisely like this, and
22 if I call it a FLEX portable generator, I need to
23 model it differently?

24 It doesn't just have guidance for how
25 an inspector or somebody out in the region should

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1 consider compensatory measures, even if it's, you
2 know, 20,000 squirrels running around in a big
3 cage?

4 MR. MONTECALVO: The guidance does give
5 you pretty specific, and it's in an effort to make
6 sure that the differences between risk analysts is
7 minimized, so that we have this stable regulatory
8 platform, so that a risk analyst, if you take a
9 risk analyst, two different risk analysts on
10 different days and they have the same problem, they
11 come up with the same answer and we can have a
12 stable regulatory platform based on that. So the
13 guidance needs to be relatively specific.

14 CHAIRMAN STETKAR: Okay. We've
15 probably spent enough time on this apparently.

16 MR. MONTECALVO: I think that was
17 pretty much my last slide.

18 MEMBER SKILLMAN: Excuse me, Michael.
19 When is the update due, the inspection procedure
20 7111 relative to Maintenance Rule A-4?

21 MR. MONTECALVO: We're still working
22 through the details on this, and whether or not
23 that inspection procedure actually needs to be
24 changed, and we're working with NEI right now to --
25 they've submitted some wording changes to NUMARC-

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1 9301 that we're going back and forth on the
2 language change to that, to ensure that the scoping
3 into the maintenance rule is appropriate.

4 So this was -- it was one of the ones
5 that I feel a little strange having on there,
6 because we're not definite that that needs to be
7 changed at all. But we're keeping it there as a
8 placeholder to make sure that we take a look at it,
9 and make sure that we're covered, if we don't need
10 to add something to that inspection procedure,
11 because there are very specific maintenance rule
12 aspects to this.

13 MEMBER SKILLMAN: Thank you.

14 MR. MONTECALVO: I'm pretty much on the
15 questions, to be honest.

16 CHAIRMAN STETKAR: Anything more from
17 Michael on this topic, because we're going to
18 switch gears again here.

19 (Pause.)

20 MS. ROSENBERG: So we had just a minor
21 change in the schedule. We're going to go over the
22 PRA Technical Adequacy Working Group slides and
23 presentations first before we talk about the
24 licensing actions.

25 (Pause.)

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1 MS. ROSENBERG: So, good afternoon.
2 I'm Stacey Rosenberg. I am the branch chief of the
3 PRA Licensing Branch in NRR. Mic on? It's on now,
4 okay. Did you hear me? Okay.

5 CHAIRMAN STETKAR: We did, but the
6 microphone is important for the transcript.

7 MS. ROSENBERG: Okay, all right. So I
8 have a brief presentation on the PRA Technical
9 Adequacy Working Group, and our first slide, I do
10 want to acknowledge the NRC Working Group members
11 who have dedicated substantial time and invaluable
12 expertise to their roles as part of this team.

13 We have Donnie Harrison, who is there,
14 in back there, a senior level advisor for PRA in
15 NRO. We have Mary Drouin up here, who is a senior
16 risk and reliability analyst in Research; J.S.
17 Hyslop, a senior risk and reliability analyst in
18 the NRR. He's back there, but he'll be up here
19 soon, and Adrienne Driver, who is a risk and
20 reliability analyst in NRR.

21 I also want to acknowledge the work of
22 Steve Dinsmore, who's a senior risk and reliability
23 analyst in NRR and he's been instrumental in the
24 working group's efforts.

25 Next slide. So I guess I want to

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1 reiterate the major objectives for Working Group 1,
2 which I believe NEI already discussed. The first
3 objective was to develop a process suitable for
4 making new methods available for risk-informed
5 regulatory applications.

6 J.S. Hyslop will be providing a
7 presentation on the activities and status, and
8 Objective 2 was to improve the process for
9 documentation and closure of peer review facts and
10 observations, and we have a presentation on the
11 activities and status from Adrienne Driver.

12 Objective 3, which was to evaluate any
13 additional gaps in the current peer review process.
14 Due to resource limitations, we have not spent a
15 lot of time on this objective in the last six
16 months. We believe there's still effort needed in
17 this area, and I have a slide on that, which we'll
18 discuss. Next slide.

19 CHAIRMAN STETKAR: Stacey.

20 MS. ROSENBERG: Yeah.

21 CHAIRMAN STETKAR: Be careful with your
22 paper, because that microphone when it's on is
23 really sensitive. If you hit it, it explodes in
24 his ears over there.

25 MS. ROSENBERG: Okay, all right. Sorry

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1 about that. Okay. So a brief history, which I
2 also think NEI provided, so I'll go through this
3 very quickly. The three objectives that we just
4 talked about were established in June of 2014. The
5 industry submitted their white paper in June of
6 2015, and the NRC staff reply was provided in
7 January 2016, which we did agree conceptually
8 because the white paper was in conceptual form.

9 So in February 2016, the industry
10 submitted their draft guidance. The draft guidance
11 that they submitted was on the F&O closure process,
12 which was Objective 2, related to Objective 2, and
13 on the new methods evaluation panel process, which
14 was Objective 1.

15 And when we reviewed those, we believed
16 that the draft guidance did not outline the process
17 steps in enough detail to implement the process
18 itself. So what we did was we -- in April of 2016,
19 we issued the draft staff position, and we've been
20 discussing that in public meetings with the
21 industry and then we have been working with the
22 industry on the pilot programs for these
23 objectives, for the new methods and for the
24 independent assessment of the F&O closure process.
25 So those are ongoing.

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1 Okay, and the last slide I have here is
2 I just wanted to briefly touch on Objective 3. We
3 have not spent a lot of time on this, but I believe
4 we still need -- there's work to be done in this
5 area. In the white paper, the staff did agree with
6 the industry that the peer review process needed
7 some revision, and some of the specifics for that,
8 the host utilities should review the documentation
9 of peer review team qualifications in advance, and
10 request new members as necessary, and that reviewer
11 resumes should be provided with sufficient time to
12 ensure that the reviewers are adequately qualified.

13 So you know, we think that guidance
14 needs to be changed. Also in the industry white
15 paper, the white paper suggested that the NRC and
16 the industry should get together in public meetings
17 and discuss the maintenance and upgrade process, to
18 determine if guidance changes are needed.

19 So you know, things like what is and is
20 not an upgrade. We've seen issues with that. We
21 saw a few issues with that in our observation of
22 the F&O closure process, and potentially firmer
23 guidelines on how often a peer review is needed.
24 In our review of license amendment requests, we've
25 seen some of the peer reviews that were done were

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1 from the late 90's, the early 2000's, and it was
2 before, you know, the next revision of the
3 standards.

4 And so, you know, that inevitably led
5 to RAIs. So you know, we believe that there's some
6 work to be done in this area, and we plan to resume
7 that effort. Unless there are any questions --

8 MEMBER POWERS: Well, I got the
9 impression, perhaps erroneously from the industry
10 that they had troubles with the closure process on
11 findings from the peer review.

12 MS. ROSENBERG: I'm sorry. I couldn't
13 hear that.

14 MEMBER POWERS: Well, I got the
15 impression from the industry that the only way they
16 could close out findings was to have another peer
17 review, which would identify additional findings
18 that could be closed out only by having yet a third
19 peer review.

20 MS. ROSENBERG: Right, right.

21 MEMBER POWERS: And they were worried
22 about the convergence of the process. These don't
23 really seem -- it's not transparent to me how that
24 addresses their issue.

25 MS. ROSENBERG: Okay. Well, we have a

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1 presentation on the F&O closure process. So we
2 will be presenting on that. But I think at the
3 beginning, that fact was that the peer review
4 process would be an iterative process, and that new
5 peer reviews would close out a number of the F&Os
6 and may identify some new F&Os. But that it would
7 be, you know, less and less as the PRAs were
8 refined and improved. So that was the original
9 thought.

10 MEMBER POWERS: I'll ask the same
11 question I asked them, if you looked at
12 alternatives to the peer review process.

13 MS. DRIVER: For closure of F&Os?

14 MEMBER POWERS: No. You expect peer
15 reviews to accomplish something for you, to assure
16 the quality of the PRA. It is widely known that
17 the peer review process is, to be sure, not
18 comprehensive, can't be comprehensive. Finite
19 number of people for a finite, very finite period
20 of time, that it can easily get inbred and lots of
21 agencies within government are now re-examining
22 their peer review as their vehicle for assuring
23 quality.

24 MS. ROSENBERG: Sure.

25 MEMBER POWERS: And I'm asking are you?

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1 MS. ROSENBERG: I mean I think the
2 certification, PRA certification process should be
3 looked at, you know. It's a possibility, but you
4 know, I don't think that's the direction we're
5 headed.

6 MR. DINSMORE: Yeah. This is Steve
7 Dinsmore. I guess as Stacey just said, there have
8 been some discussions about certifications or
9 certifications certifying the reviewers to do it.
10 So there have been different steps that have been
11 discussed. But in the end if you try to review the
12 PRA, I think to review one in detail takes almost
13 as long as it does to do one.

14 So if you have a 100 different plants,
15 you can't really go down that path. So we did
16 something a little quicker and with less effort,
17 but with some type of reasonable results. But
18 there has been discussion mostly about certifying
19 the reviewers. But those have not yet progressed
20 beyond discussions within the staff.

21 MS. DROUIN: If you go back when this
22 whole process started up, there were a lot of
23 options put on the table at that time, and they
24 were, you know, I'd have to go back and look at my
25 notes and everything, because we're talking quite

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1 some time ago.

2 But there were a lot of different
3 options that were considered for, you know, once we
4 got this standard how did we ensure that, you know,
5 when people implemented the standard that we were
6 achieving the goal that we wanted which, you know,
7 was a technically acceptable PRA? You know,
8 whether or not it's time to revisit those options,
9 you know, I don't know.

10 MEMBER POWERS: All you know is that
11 you're not doing it now?

12 MS. DROUIN: I wouldn't say that in an
13 absolute sense, because you know, we have
14 revisited, you know, the idea of certifying, you
15 know, PRA analysts.

16 Personally, this is just a personal
17 perspective, I don't think that's a good idea. We
18 can have that discussion at another time because
19 that's not a two minute discussion. But I don't
20 think that's a viable option. I think it's going
21 to cause, it's going to open up a Pandora's box.

22 MR. GIITTER: This is Joe Giitter. I
23 just want to remind you that when we were looking
24 at the RMRF effort, one of the options we
25 originally looked at was a PRA certification

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1 approach, and we did have a couple of public
2 meetings to talk about that. We found, and Mike
3 Tschiltz mentioned this earlier, we just didn't
4 have the support for doing that.

5 But the idea there would be, you know,
6 and it's very consistent with the phased approach
7 PRA quality laid out by the Commission SRM, that is
8 ultimately you'd get to a point where NRC would
9 review and approve a PRA for all regulatory
10 applications, including SDP, and that would be in
11 essence a PRA of record.

12 But the bottom line is that, you know,
13 there wasn't sufficient support for that idea. So
14 it is something we've explored, but right now I
15 think we're also looking at what can we do to
16 improve the peer review process that we do have.

17 MS. DRIVER: Are there any further
18 questions from Stacey before we begin the next
19 presentation?

20 MEMBER POWERS: Well, it's easy to
21 improve the peer review process. More time and
22 more eyeballs. Now to do it efficiently and cost
23 effectively, that's a little more challenging.

24 MS. ROSENBERG: Okay, Adrienne.

25 MS. DRIVER: Thank you. My name is

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1 Adrienne Driver. I am the NRR lead for the PRA
2 technical adequacy that is -- has been working on
3 the improved process for closure of the industry
4 peer review facts and observations, along with RES
5 and NRO, as well as public meetings with the
6 industry.

7 This is Steve Dinsmore. He's provided
8 contribution and instrumental efforts in our pilot
9 observations that we have conducted and going
10 forward are ongoing and conducting.

11 To begin, and I'll be brief on these
12 first initial slides, we do have current guidance
13 for Reg Guide 1.200 that provides the staff
14 position for acceptability of your base PRA.
15 However, what we have identified is an absence of a
16 process for closure of the facts and observations.

17 The NRC staff currently has set new
18 peer reviews for closure of the old facts and
19 observations that were originated in the old peer
20 review. However, it can be perceived to be a
21 revolving door because of course you get new
22 generation of facts and observations, and they're
23 generated in large and substantial numbers.

24 Therefore, we're looking to improve the
25 facts and observations to be in alignment with what

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1 we expect in increased workload for the risk
2 applications that we're expecting to receive from
3 the industry.

4 So just a brief history, because I know
5 Stacey also provided you some history on the actual
6 closure process and what efforts have taken place
7 thus far. But we did receive an actual industry
8 white paper that identified four options for --
9 four options for closure of facts and observations.
10 They included the original peer review, which is
11 what we currently use, along with the new peer
12 review, the NRC review and closeout and the
13 Licensing closeout.

14 The recommended approach that we
15 conceptually agreed upon was the hybrid approach,
16 and following our recommendation back to the
17 industry and review of the white paper for the
18 hybrid approach, the industry provided the draft
19 guidance that introduced the alternate or the
20 independent assessment, that I think that you guys
21 were briefly communicated on by NEI.

22 From there, we performed our first
23 pilot observation of the independent assessment
24 with use of that draft guidance, and the two
25 members that were in observation were myself and

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1 Steve. So getting into --

2 CHAIRMAN STETKAR: Adrienne, let me
3 interrupt you here for just a second. We're
4 limited, as members of the Subcommittee, to the
5 stuff that gets sent to us to read for these
6 meetings, and one of the things that was sent to us
7 to read for this meeting was NRC draft regulatory
8 positions for Regulatory Guide 1.200. Those
9 regulatory positions address both methods and --

10 MS. DRIVER: And the F&O closure
11 process.

12 CHAIRMAN STETKAR: And F&O. Now just a
13 basic question. Is the document that we received
14 intended to actually be draft regulatory positions
15 to be inserted in Reg Guide 1.200?

16 MS. DRIVER: We do intend to
17 incorporate that into Reg Guide 1.200 informally,
18 and with hopes of endorsing the industry guidance.

19 CHAIRMAN STETKAR: Well wait a minute,
20 hold on. You just said something that I heard
21 everybody saying no, you weren't going to do that
22 because the industry wasn't going to -- they were
23 going to send you 16-04 but they weren't going to
24 send you 16-06, and I saw a lot of repetition, and
25 in fact a lot of really poorly written stuff quite

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1 honestly. I need to get that on the record.

2 I'm curious about what all of this
3 stuff is? In other words, why has the staff
4 created something that in many cases repeats a
5 bunch of stuff from the industry guidance, and
6 actually has things in there that says well, you're
7 going to endorse industry guidance when the
8 industry says they aren't going to send you
9 guidance to endorse.

10 Be careful about your microphone up
11 there. I'm really confused, and if indeed this is
12 a proposed update to Reg Guide 1.200, it's
13 symptomatic of a bits and pieces, haphazard
14 approach to looking at specific things and
15 inserting them where you can do word searches.
16 Quite honestly, that's the --

17 MS. DRIVER: I hope that I can clarify,
18 clarify this a little bit for you. But the NEI 16-
19 06 draft guidance that -- the guidance that the NEI
20 is not intending to provide to the industry for
21 review, that's completely separate from the draft
22 guidance that the NEI and the industry have
23 provided for 16-04, which outlines the --

24 CHAIRMAN STETKAR: I understand that.

25 MS. DRIVER: And so that draft

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1 guidance, in development with the regulatory staff
2 position, and when we receive that draft guidance
3 we do acknowledge, and I think Stacey briefly
4 communicated that the brevity of that draft
5 guidance in the outline was incomplete and
6 insufficient in detail.

7 So therefore in our staff review, we
8 developed a staff position that establishes
9 specific criteria for what the staff has identified
10 as acceptable --

11 CHAIRMAN STETKAR: Let me back up here
12 then.

13 MS. DRIVER: Uh-huh.

14 CHAIRMAN STETKAR: Will the ACRS PRA
15 Subcommittee be presented with a complete and
16 coherent proposed update to Reg Guide 1.200 that
17 contains all of this logic in an integrated form?
18 Not piecemeal, because I don't understand how this
19 --

20 MS. DROUIN: The answer is yes.

21 CHAIRMAN STETKAR: Okay.

22 MS. DROUIN: The answer is yes.

23 CHAIRMAN STETKAR: Thank you.

24 MS. DROUIN: The staff position was
25 issued because normally the way the process works

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1 is that when we review, whether it's the PRA
2 standard or an NEI guidance document that's going
3 to get endorsed in 1.200, we review it against a
4 staff position.

5 So if we're going to take exception, we
6 can come back and say you did not meet the staff
7 position. So when we saw their guidance document,
8 you know, we thought it would be much more
9 efficient if we came up front and said here's our
10 position, you know, to clearly communicate what our
11 expectations were, instead of having numerous
12 iterations of going back and forth.

13 CHAIRMAN STETKAR: Okay, okay. My one
14 comment on that is as I read this stuff, that
15 immediately provokes an adversarial relationship
16 that might not necessarily be necessary.

17 MS. DROUIN: I personally don't agree
18 with that assessment. I think it adds better
19 communication. I mean when you read Reg Guide
20 1.200, it goes into detail what our staff position
21 is for a technically acceptable PRA, and then what
22 is a technically acceptable peer review process.

23 So that was a gap in 1.200 and in the
24 standard because it did not get into, you know,
25 what we felt was an acceptable process for how you

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1 closed out F&Os or how you reviewed new methods.
2 So it's a draft thing.

3 We plan to, you know, take lessons
4 learned from the pilots, and you know, we're going
5 to start, you know, getting into the production for
6 Revision 3 of Reg Guide 1.200 and it will get
7 factored in in a very integrated manner.

8 CHAIRMAN STETKAR: Thank you. I'm glad
9 to hear that.

10 MS. ROSENBERG: And our intention in
11 issuing the draft staff position was to expedite
12 the process.

13 CHAIRMAN STETKAR: Okay.

14 MS. DRIVER: So that brings us to -- we
15 reviewed the NEI draft guidance that provided the
16 outline and so to avoid going back and forth, back
17 and forth, review-comment, review-comment, the
18 staff and the working group decided to develop a
19 draft staff position for establishing the criteria
20 for the F&O closure process, which provides detail
21 with regards to F&O closure, scope, team
22 qualifications, along with documentation.

23 So let's carry on to the -- skipping
24 ahead. So going into the actual pilot observation,
25 which is where we're at now after the draft

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1 guidance and the staff position had been drafted,
2 we're now in the pilot observation and at this
3 time, we'd like to share with you some of our
4 identified strengths from the initial pilot
5 observation, which was the direct access to the
6 model which established a level of communication
7 that -- between the actual independent assessment
8 team along with the actual model owners, to
9 facilitate understanding and closure along with the
10 access to the peer review reports in the original
11 text.

12 Sometimes when we receive risk
13 applications, we receive them in a summarization
14 format, and the brevity can have the absence of
15 what is actually trying to be captured or conveyed
16 for the actual fact and observation.

17 So overall, the process seems suitable
18 for closure of facts and observations for specific
19 types of facts and observations, and those types
20 are documentation issues, individual modeling of
21 method errors and incorrect facts and observations
22 to thus minimize the large scope of facts and
23 observations that are originally generated from
24 that peer review.

25 Some identified lessons learned from

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1 the actual pilot observation include identification
2 and disposition of model upgrades. We identified
3 some facts and observations that the licensee had
4 proposed for closure, but resolution and closure of
5 those F&Os required an actual new method,
6 incorporation of a new method and incorporation of
7 a new method or large substantial change in scope
8 actually requires an actual focus scope peer
9 review.

10 And so therefore the facts and
11 observations process is not necessarily deemed to
12 be the appropriate process for closure of these
13 types of F&Os. Some F&Os were difficult to
14 interpret, along with the actual licensee draft
15 documentation or generation of new F&Os.

16 That can often be perceived to prohibit
17 the aligning cultural environment for actual
18 development and modeling of PRA, the inability to
19 actually generate a new F&O and some additional
20 clarity necessary between the actual exit of the
21 independent assessment along with the actual
22 closure report.

23 The clarity necessary there is because
24 what you find is in the actual independent
25 assessment exit, there were 115 facts and

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1 observations that were proposed by the licensee for
2 closure. Three were partially resolved, 87
3 resolved and there were still open 25.

4 So you see approximately a 25 percent
5 discrepancy in what the actual licensee recommended
6 for closure or defined as a closed F&O and what the
7 actual independent assessment team determined was
8 to be closed.

9 So with that discrepancy, it does
10 demonstrate a need for why there should be a
11 rigorous independent assessment for closure of the
12 facts and observations. So the past four --

13 MR. DINSMORE: Yes, this is Steve
14 Dinsmore. Just real quick, the numbers there a
15 little different than what --

16 CHAIRMAN STETKAR: It doesn't -- I
17 don't care about the body count. Body counts are
18 body counts. That doesn't --

19 MS. DRIVER: Yeah. I do recognize they
20 had 14.

21 CHAIRMAN STETKAR: It's putting things
22 in boxes are putting things in boxes. If I go back
23 to some of the things I'm having problems with, let
24 me read you a quote. Section 2.2.2, F&O Technical
25 Review.

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1 "F&Os characterized as documentation
2 shortcomings are examined to ensure that adequate
3 technical substance existed for the PRA standard
4 peer review to have developed F&Os, or make the
5 determination that the impacted supporting
6 requirements are not met because of lack of
7 documentation."

8 I read that about a half a dozen times
9 and for the life of me, as guidance to an NRC
10 technical reviewer, I don't understand what the
11 heck that says. So if this is now proposed staff
12 guidance, it's incoherent. What is -- what does
13 that mean?

14 MR. DINSMORE: Partially, you're
15 looking at sausages being made there.

16 CHAIRMAN STETKAR: Well, but the
17 problem is it's being presented to us, as the ACRS
18 PRA Subcommittee, as draft language for Regulatory
19 Guide 1.200. So I read it that way.

20 MR. DINSMORE: Well, it is draft and
21 we're working on it. I guess I --

22 MS. DROUIN: Yeah, I would characterize
23 it --

24 (Simultaneous speaking.)

25 CHAIRMAN STETKAR: There's a bunch of

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1 things in there that I couldn't figure out, and the
2 problem is if you're saying that this is an
3 efficient way to communicate with the industry, if
4 you're all speaking gibberish, that is a language
5 not -- I didn't want to malign any particular
6 language -- if you're all speaking the same
7 gibberish language and understand what you're
8 talking about, that's okay. I don't care.

9 By the time it gets into actual
10 language in a regulatory guide, it better be
11 understandable to anyone, because it's going to be
12 used by NRC staff reviewers who didn't speak
13 gibberish. They just pick up the regulatory
14 guidance and say I need to follow this guidance.

15 MS. DROUIN: I think those are fair
16 comments, and I would like to think that within
17 the working group we were all of the same
18 understanding of what those words mean.

19 CHAIRMAN STETKAR: Within your working
20 group. My point is was the industry working group
21 speaking the same language, and if they're not, all
22 you're doing is fomenting the types of questions
23 that I'm trying to provoke here.

24 MS. DROUIN: And that's why we have a
25 process that we'll go through, and ask for

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1 reviewing comment, you know. If there's language
2 in there that people don't understand, we certainly
3 want that pointed out and we will clarify it. We
4 plan to use lessons learned from the pilots, you
5 know. We might end up totally redrafting the staff
6 position based on the pilots and other stuff.

7 This was just our first cut of it. I
8 mean it hasn't even evolved to be a draft
9 regulatory guide yet.

10 MS. DRIVER: Thank you for that
11 feedback.

12 CHAIRMAN STETKAR: No, that's just one
13 example. It's the quickest one that I could come
14 up.

15 MS. ROSENBERG: And we had a public
16 meeting with the industry to go over this, and
17 they've provided their comments. And so, you know,
18 we're working.

19 CHAIRMAN STETKAR: I read those
20 comments.

21 MS. DRIVER: Yeah. Thank you for that
22 feedback. That is definitely well-received and we
23 are -- it is an ongoing process in which we'll
24 continue to --

25 CHAIRMAN STETKAR: What I'm trying to

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1 provoke here is an understanding of are we getting
2 -- is the staff, because of Project Aim, because of
3 the need to get it done right away and check off
4 the box that it's done, rushing to a position where
5 you're looking at word searches in a document,
6 coming up with paragraphs that seem to address
7 those word searches, putting it down as the draft
8 regulatory position and saying "We're done. We
9 have it," and it doesn't necessarily address the
10 bigger picture issues. That's the big concern that
11 I have.

12 MS. DROUIN: And that is not how this
13 draft document was formulated. It was given a lot
14 of thought.

15 CHAIRMAN STETKAR: It's not written
16 very well Mary, if it was given a lot of thought.
17 It's a lot of cut and paste and words just chopping
18 in there. It is. I don't want --

19 MS. DROUIN: Well, I'm not going to sit
20 here and defend that this was the best written
21 thing. It is the first cut. It's a preliminary
22 document. I think all of us, you know, for a first
23 cut preliminary document, I would never -- I would
24 expect for it to go through multiple revisions and
25 clarifications and everything.

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1 So I think for a first cut, you know,
2 we may just have to agree to disagree. I think it
3 was a first good effort.

4 CHAIRMAN STETKAR: Okay.

5 MS. DRIVER: So going forward, we do
6 intend to incorporate the lessons learned into the
7 actual draft staff position, in hopes of -- in
8 hopes of formal endorsement of the actual industry
9 guidance for the F&O closure process. I think you
10 guys have already been briefed on some of the
11 lingering or major, still major lingering on things
12 that we will still be observing, such as generation
13 of new facts and observations in the actual
14 process.

15 But overall, what we would like to
16 achieve and accomplish is true transparency of the
17 actual process for F&O closure.

18 CHAIRMAN STETKAR: Is the staff okay,
19 you know, when you say endorsement of the NEI
20 guidance, what I have is something called NEI 16-
21 04, which is a short but a complete document, and
22 something that right now is being characterized as
23 Appendix X to at least three other NEI documents.

24 And the staff is okay as having that
25 Appendix X distributed among three NEI documents,

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1 despite the fact that Reg Guide 1.200 refers to a
2 fourth NEI document that describes a peer review
3 process.

4 MS. ROSENBERG: We'd prefer that it was
5 consolidated.

6 CHAIRMAN STETKAR: Okay. I didn't read
7 anything in your positions that says we'd really
8 prefer that this is consolidated. It's all
9 distributed.

10 MS. ROSENBERG: We put that -- it was
11 in our -- it was actually in our response to the
12 white paper, to their white paper. It was in
13 there.

14 MEMBER CORRADINI: The three page
15 response?

16 MS. DRIVER: 24. I think it was 24
17 pages.

18 MEMBER CORRADINI: Oh.

19 MS. ROSENBERG: No, to the white paper.

20 MS. DRIVER: Oh, to the actual white
21 paper.

22 MS. ROSENBERG: No there wasn't -- it
23 was --

24 (Simultaneous speaking.)

25 MS. ROSENBERG: I don't remember, four

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1 or five pages.

2 MS. DRIVER: It was seven pages.

3 MEMBER CORRADINI: But it was the
4 response dated --

5 MS. ROSENBERG: It was January 2016,
6 yeah.

7 MEMBER CORRADINI: Right.

8 MR. DINSMORE: Yeah. When we had the -
9 - when we went down for the pilot application, they
10 had a guidance document and my understanding is
11 they're going to take that guidance document and
12 we're going to further develop it with the next
13 couple of pilots.

14 (Simultaneous speaking.)

15 MS. DRIVER: It was the utility
16 guidance that was developed off the NEI.

17 MS. DROUIN: We have not had these
18 detailed discussions yet. When you look at the F&O
19 process that they're proposing, my understanding is
20 that's going to be an appendix or an update to NEI
21 05-04. You know, now have we progressed so far
22 along? For example, does NEI 00-02, do we need to
23 carry forth, you know, with that document?

24 These are all discussions that we still
25 need to have with industry, because we haven't gone

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1 back since, you know, Reg Guide 1.200 was first
2 issued, and said okay, you know, it's been 15
3 years. What lessons have we learned? Where do we
4 maybe need to do a major clean up and whatever?

5 So these are some of the things that,
6 you know, need to be discussed. We just have not
7 had those discussions with NEI yet.

8 CHAIRMAN STETKAR: You haven't, and yet
9 you've written draft guidance that specifically
10 refers to Appendices A, B, C and D to this draft --
11 to this regulatory guide regarding the peer review
12 process, and refer to NEI 00-02, I'm sorry, 0002,
13 05, 04, 07-12. Yet Appendix A is --

14 MS. DROUIN: I understand.

15 CHAIRMAN STETKAR: You know it's --

16 MS. DROUIN: But we have not started
17 the formal process of the Revision 3 to Reg Guide
18 1.200. Once we start that, we will start having
19 this dialogue.

20 CHAIRMAN STETKAR: Okay.

21 MS. DRIVER: But that was a great
22 comment, John. There's a lot going on with that
23 new Revision 2 or 3 and it does come across as very
24 fragmented.

25 CHAIRMAN STETKAR: I don't need to be

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1 patronized. I just want to get things put on the
2 record, okay.

3 (Pause.)

4 MR. HYSLOP: My name is J.S. Hyslop.
5 I'm going to be presenting with Donnie Harrison on
6 the new PRA method evaluation process, also known
7 as the vetting panel. As Stacey said, many of us
8 have worked on this process. Donnie, myself,
9 Stacey, Mary. We've all been involved. I am the
10 lead for NRR for the process and Donnie's the lead
11 for the agency.

12 Objective 1 is to develop a process
13 suitable for making new methods available for risk-
14 informed regulatory applications. Making these
15 methods available will be important for important
16 for improving risk-informed licensing activities.

17 In this presentation, I'll present a
18 motivation for this new process, the goals and
19 structure of the process, a sample of our
20 interaction with industry and the path forward.

21 Next slide. Okay. First of all, a
22 summary of the issue. We've had difficulty in
23 gaining timely acceptable of new PRA methods based
24 on experiences from topical reports and
25 industry/NRC method for new panels.

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1 The topical report process and
2 industry/NRC methods panel review can accommodate a
3 range of method complexities, yet do not
4 necessarily provide timely acceptances. Other
5 processes such as LAR reviews and fact reviews are
6 not suited to longer and more complex new methods
7 which may exclude some methods.

8 On occasion, the staff does review more
9 complex issues in its LAR reviews, and under the
10 circumstances many rounds of RAIs are necessary.
11 Even for simple methods in a LAR, you get RAIs. So
12 the goal of this process is to process methods more
13 efficiently and process a range of complexities and
14 methods with a sufficient approach.

15 Next slide. The goal, as I said, is to
16 develop a process suitable for making new methods
17 available for risk-informed regulatory
18 applications. We want an efficient process for
19 getting new PRA methods into mainstream use as
20 quickly as possible. We want to ensure that the
21 method receives appropriate level of technical
22 scrutiny and has a sufficient technical bases.

23 As you'll see on the next slide, this
24 process supports a review process that becomes more
25 in-depth as needed. But if not needed, it doesn't

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1 go there, and this is an alternative to existing
2 processes.

3 Next slide. I've got a flow of the
4 process taken from NEI 16-04. I think it was also
5 in the June 2015 industry white paper, and if you
6 look at the top box, it starts with a new method
7 being submitted to the vetting panel. The first
8 triangle is where the first assessment is made to
9 determine if the core members of the vetting panel,
10 both from industry and NRC, can perform the review
11 itself.

12 If so, then the review is performed and
13 an efficiency is gained. However, if not, then you
14 move to the right to a more detailed assessment,
15 where subject matter experts are needed. Even at
16 this stage, the staff will attempt to review the
17 method smartly.

18 The final step of the process after the
19 recommendation for acceptance or not is a document
20 decision and final closure process. NRC
21 participates in this process, much as it does
22 during the standard activity. So it's a member of
23 the review team and it also participates or
24 performs the closure process by rejecting or
25 accepting the method.

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1 Next slide. Now I'm going to talk
2 about the staff draft position on the proposed
3 industry process. As has been said, we find the
4 industry process lacking in detail. So we felt
5 like we needed to provide detail on the review, the
6 acceptance and the documentation.

7 So the staff position, this is a first
8 shot for communicating our expectations, and we
9 have expectations in all of these areas on the
10 slide. This staff position will support the pilot
11 activities. We have three fire PRA methods
12 submitted for the pilot. I'm going to just go and
13 share a little information of each one of these
14 bullets in the staff's expectations.

15 For team qualifications, individuals
16 must have independence, expertise in the new method
17 and knowledge of the standard. For acceptance
18 review, we want to determine if there's adequate
19 information for the review, and determine if the
20 risk impact of the new versus the existing method
21 is adequate.

22 For the level of review, we'll assess
23 the need for subject matter experts and take into
24 account the extent of previous reviews. For the
25 acceptance of a method, we need a separate

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1 consensus by both NRC and industry core members, an
2 adequate technical basis, identification of
3 limitations and conditions of use.

4 With respect --

5 MEMBER BLEY: You said consensus?

6 MR. HYSLOP: Yes. Would you like me to
7 elaborate on that?

8 MEMBER BLEY: Well, I would. I know
9 what it means to me. Tell me what it means.

10 MR. HYSLOP: Well, both NRC and
11 industry core members, there must be a majority of
12 eight for the method to be approved, and that's
13 what I mean by consensus.

14 MEMBER BLEY: Thanks.

15 MR. HYSLOP: Uh-huh. Now with respect
16 to use prior to formal NRC acceptance --

17 MEMBER BLEY: Is that defined
18 somewhere? Because it's not the general meaning of
19 consensus. It's a reasonable thing I think but --

20 MR. HYSLOP: Well, the requirement for
21 a method to move forward and to be accepted is
22 discussed in the documents. I don't know if it's
23 referred to as consensus. It may be.

24 MEMBER BLEY: Okay.

25 MS. DROUIN: I think it is referred to

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1 as consensus, and what J.S. said is explicitly
2 discussed, I believe in both the NEI document and
3 in the NRC draft staff position.

4 MEMBER BLEY: Okay.

5 CHAIRMAN STETKAR: See, it's
6 interesting in that regard. There's a table,
7 because the staff likes table. Table 18, if you're
8 looking at tables. One bullet item for the vetting
9 panel process is bullet, "Uses facilitator for
10 vetting panel process." Now that tells me that
11 it's a consensus-building process, but it's not
12 mentioned anywhere else.

13 MEMBER BLEY: Well this business of it
14 being a majority vote of both subgroups.

15 CHAIRMAN STETKAR: But that's in the
16 NEI.

17 MEMBER BLEY: That's in the NEI.

18 CHAIRMAN STETKAR: That's in the NEI
19 paper. That's all I have to do is endorse that if
20 that's what I wanted.

21 MEMBER BLEY: Well, if you're going to
22 endorse that, yeah.

23 CHAIRMAN STETKAR: Okay. So do you
24 intend this to actually be a facilitator-led
25 consensus approach, and if you do, then that needs

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1 to be elaborated pretty clearly, because that's
2 much different from what NEI is proposing,
3 conceptually much different. If you don't, I don't
4 understand why you need a facilitator.

5 MR. HARRISON: Yeah. At the initial
6 vetting panel meeting, the NEI representative
7 actually was Victoria, acted as a facilitator for
8 the meeting. So that's similar --

9 CHAIRMAN STETKAR: You mean like I'm
10 acting as a facilitator for this meeting?

11 MR. HARRISON: Yes. It's not
12 facilitator as a professional facilitator.

13 CHAIRMAN STETKAR: Yes.

14 MEMBER CORRADINI: I think you were
15 joking, weren't you?

16 CHAIRMAN STETKAR: I was.

17 MR. HARRISON: In other words, in doing
18 it, you need someone to kind of get the meeting
19 going and staying focused in that sense. It's also
20 recognizing when votes need to be taken and the
21 simple, maybe a small F facilitator is the intent.

22 MR. HYSLOP: Okay. I'm going to
23 continue. There was some discussion of use of the
24 method prior to formal NRC acceptance. We need to
25 ensure that limitations have been demonstrated to

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1 have a negligible impact on the results, or use of
2 conservative parameters or assumptions. Use before
3 NRC approval is at the risk of the user.

4 With respect to submittal for formal
5 NRC acceptance, we need a description of the
6 method, limitations and conditions of the method,
7 and any dissenting views documented, and then
8 there's documentation to be kept at the plant with
9 the licensee.

10 Next slide. Now I'm going to go into
11 some NEI comments and staff position.

12 MEMBER BLEY: Just before we leave
13 that. John's comment may have been facetious, but
14 underlying it is something important, and
15 especially when we have this new kind of group that
16 has both industry people and the NRC people on a
17 combined committee.

18 The typical use of facilitator in lots
19 of different areas still is to make sure you get
20 all of the information and all of the comments out
21 on the table, and you don't let one loud person
22 dominate the meeting, that sort of thing.

23 Some description of that ought to show
24 up somewhere, to make sure that, you know, that's a
25 -- it's an important role, and it's not just

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1 keeping the clock and making sure things move
2 along, but making sure everybody gets a fair say
3 and has a say, you know. It forces people to get
4 their own ideas out.

5 MR. HYSLOP: Now the next slide. The
6 NEI gave us comments on the draft staff position in
7 June and the staff responded in July. The first
8 staff industry critique was that the purpose of the
9 vetting panel is to only determine the process and
10 level of effort needed for new PRA methods.

11 The staff position, which was reflected
12 in the NEI 16-04, is that the vetting panel can
13 perform the technical review itself or direct the
14 review. So the staff recommended that, and so we
15 needed the staff position to provide some guidance
16 for that.

17 The second industry critique was the
18 NRC final review and endorsement after the
19 technical review results in new improvements to
20 efficiency. The staff position, which again is in
21 the industry document, is that NRC may accept or
22 reject results and provide clarifications or
23 qualifications as a part of the formal
24 endorsement.

25 As I said, the staff needs to be smart

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1 about the review. So we'll do that. The third
2 critique was NRC position that team members not be
3 from the licensee that has submitted a risk-
4 informed LAR containing the method is too
5 constraining. The staff does not object to that
6 position because we're involved in the closure
7 process. We're going to review this in the end and
8 decide whether we agree or disagree and whether we
9 need conditions. And yeah.

10 Okay, next slide. Now for the path
11 forward. As I said we're --

12 MEMBER BLEY: Question.

13 MR. HYSLOP: Yes.

14 MEMBER BLEY: In this exercise that's
15 already occurred, the pilot, I don't know if that's
16 all finished. But did it exercise this vetting
17 group approach yet?

18 MR. HYSLOP: We've had one phone call
19 and that's all that we've done with industry. The
20 phone call talked about some initial reviews,
21 whether there were efficiencies to be gained,
22 things of that nature, and we haven't discussed
23 the three methods from a technical point of view
24 yet.

25 MEMBER BLEY: And you haven't actually

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1 --

2 MR. HYSLOP: So we really haven't
3 exercised the process.

4 MEMBER BLEY: When you do exercise the
5 process, are you going to be face to face or are
6 you going to do it by a phone call?

7 MR. HYSLOP: The next meeting is
8 planned to be face to face, and at that point will
9 be our first real discussions about the technical
10 areas.

11 MR. HARRISON: That leads to the
12 discussion I think John brought up, Table 2.1 in
13 the NEI guidance that had kind of almost a
14 prescriptive pathway, and we provided an early
15 comment to the industry that there was a concern
16 that that could convey a prescriptive pathway.

17 So the reality is it's worthwhile
18 considering the pedigree, the maturity, the
19 application of the method. But that shouldn't
20 drive you to the right-hand column that says
21 therefore, you go down this path.

22 And so that -- we would say, even
23 though that's a topic that you consider, when you
24 look at the diagram we had it's either the vetting
25 panel has the capability to do the review itself

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1 technically, and it's the technical basis that
2 matters, or you've got to go get some additional
3 subject matter experts to perform the review and
4 not worry about some detail of is that a peer
5 review, is that a ASME standard?

6 The answer would be well, you would
7 have the limits of all of that, because you're
8 going to look at the standard and you're going to
9 look at the technical basis. So that's whatever
10 that detail review scope becomes.

11 CHAIRMAN STETKAR: A lot of my comments
12 here, I have to invoke my own be careful about the
13 clock, are intended to recognize that I personally
14 think that all of these initiatives are very
15 promising. Both the closeout of the F&Os, the
16 technical adequacy issues. But they are works in
17 progress. I mean it's something that the NRC staff
18 and the industry are trying to reach some sort of
19 general agreement about what's the most effective
20 path forward.

21 I think that in the same sense that
22 having a table that has boxes that tends to force
23 you into regardless of the original intent,
24 specific types of reviews or suggests that that
25 type of review might be most beneficial, might be

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1 too constraining from the industry side.

2 The same way is draft regulatory
3 guidance, words that in many cases are very, very
4 similar but only slightly different from the
5 industry's position, to provoke comments that
6 require responses on June 9th with a July 28th for
7 probably rebuttal, before you actually go out and
8 try the process.

9 MR. HYSLOP: But I guess from my
10 perspective, we'd like to have the guidance out
11 there so that we can try and follow it in the
12 pilot, and we can find errors, we can find
13 refinements, we can do a better job in the second
14 go-round.

15 CHAIRMAN STETKAR: Okay.

16 MR. HARRISON: One other comment I'll
17 make, and again this is in the context of the
18 overarching risk committee, that third bullet was
19 an item when we got it back from the industry,
20 their comment, we actually discussed these topics
21 with our risk committee, and it's through those
22 discussions that we resolved in our own minds that
23 yes, it would be okay for them not to have the
24 level of objection that we were having originally,
25 that a licensee couldn't participate.

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1 And again, that was a good
2 conversation, because internally it made us kind of
3 go up into the management and discuss the problem,
4 and then have a discussion and resolve that we were
5 okay with their -- the industry's pushback on that
6 issue. So I think it's -- it wasn't intended to be
7 a negative thing by putting out a draft position.

8 It was intended to say if we're going
9 to pilot it, let's have a draft position that we
10 pilot along with the guidance, and fix both of them
11 as we go forward. As long as we show that
12 willingness to bend and revise as we learn, I think
13 it can be successful.

14 MS. ROSENBERG: And I also believe that
15 we are in the process of reaching consensus, and we
16 have a few more issues remaining, which I believe
17 the NEI members presented, and we have -- we have a
18 -- we are presenting on that as well. We have a
19 workshop coming up at the end of October, where
20 we're going to discuss these remaining issues. So
21 I believe we're coming to consensus on these
22 processes.

23 MR. HYSLOP: Okay. So I'm on my last
24 slide now. As Stacey just mentioned, we have an
25 upcoming workshop proposed in the fall, and we

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1 intend to take lessons learned from the pilot and
2 revise the NRC draft staff position, which as we
3 said we expect to incorporate in a future revision
4 of Reg Guide 1.200, and industry said that they
5 intend to revise their guidance document, NEI 16-04
6 based on lessons learned from the pilot as well.
7 That's my presentation. Any questions?

8 CHAIRMAN STETKAR: That haven't been
9 asked? If not, we'll move on to the next thing.

10 MS. ROSENBERG: Okay. So we put
11 together this presentation on risk-informed
12 licensing activities ongoing. Part of the
13 motivation for this presentation is to provide an
14 awareness for all of the different competing
15 priorities that we're dealing with, and to just
16 show you what the licensing work is within NRR, and
17 also in the NRO and Research.

18 Okay, and Candace Pfefferkorn is going
19 to be providing this briefing, as she pulled
20 together a lot of this information.

21 MS. PFEFFERKORN: Okay. Thank you
22 Susie and thank you for -- to the ACRS members for
23 your time and consideration. So I'll try and make
24 this pretty brief, because I think the industry
25 presentation actually summarized a lot of the

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1 conclusions that the NRC staff has had, and that's
2 mainly that risk-informed licensing actions are not
3 going away, and in fact they're, according to our
4 analysis, going to be increasing in FY '17 and '18.

5 The graph that you see on the slide
6 here is concurrent submittals, in-house, under
7 review, per fiscal year. As you see, there is an
8 increasing trend with a projected 60 percent
9 increase in new risk-informed submittals, if you
10 compare FY '15 and '16 to FY '17 and '18. That's
11 even as NFPA 805 is winding down.

12 I'll note that the data for this graph
13 for FY '14 through '16 does come from our workload
14 database planning tool in-house called Firefly. So
15 those reflect, you know, actual numbers and that
16 the projections were based in part from RES 2015-
17 16, in which the NRC asked for voluntary industry
18 responses regarding projected licensing actions.

19 They've also been revised to include
20 correspondences that the staff has had through
21 various public meetings, etcetera. I think we'd be
22 very interested in seeing the results of the new
23 request for projected submittals that the industry
24 is now leading.

25 I wanted to note a few things that

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1 weren't in the industry presentation, and that's
2 mainly that in addition to 50.69 and TSTF 505,
3 which we already hear about, there are other
4 licensing-related activities such as seismic PRAs
5 that are coming in in response to Recommendation
6 2.1, as well as tornado missile risk-informed
7 analyses, and also risk-informed GSI-191 submittals
8 that, as you know, are coming in and associated
9 with the Reg Guide 1.229.

10 So I think we can -- are there any
11 questions on this slide? Okay. I think we can go
12 forward. In addition to licensing actions, this
13 was also echoed by the industry. There are a lot
14 of, you know, efforts going on. I think this
15 meeting has really captured a lot of those efforts
16 that staff has spent significant time on.

17 Those include guidance development,
18 working groups. We've mainly heard about the risk
19 working groups at this meeting. Inspection
20 support, knowledge management and just other
21 agency-wide activities that the staff are engaged
22 in.

23 MEMBER BLEY: Earlier, we were asking
24 about the peer review capability and the numbers of
25 peer reviewers around, and there was a nice

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1 discussion about how many more there are and how
2 better qualified they are. I think that's for
3 internal events, PRAs. For seismic PRAs, tornado
4 missile work, floods, all of that, what's the
5 picture look like over there?

6 MS. PFEFFERKORN: Sure. In terms of --
7 I'm a fairly new staff member to the Division of
8 Risk Assessment, but I can say that definitely
9 under knowledge management we're actually trying to
10 increase our expertise in that area. You know,
11 it's part of our formal qualification to do, you
12 know, take PRA, seismic PRA courses.

13 I've also, you know, there's, you know,
14 substantial -- the staff that do have the expertise
15 are working very hard to train the junior staff in
16 that area. So I don't know if one of the more
17 senior members wants to comment, but I would say
18 from a training perspective, it's certainly a large
19 --

20 MR. GIITTER: Yeah. I think that's
21 more of a question to industry and I think
22 Victoria's up there to answer your question.

23 CHAIRMAN STETKAR: I was hoping she
24 would.

25 MS. ANDERSON: Victoria Anderson from

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1 NEI. So for the internal, you're correct. We have
2 the most number of qualified reviewers for internal
3 events. For fire, we also have a pretty
4 substantial number. For external events, the
5 number is growing and the industry instituted a new
6 observer process, where we hope to get people more
7 qualified with every single review we do.

8 We will have one or two working
9 observers who contribute to the review and
10 participate in the consensus discussions, but
11 they're not credited as one of the official
12 reviewers. Once they do that, assuming they
13 perform well, they're now in the pool. So I think
14 what we have when you implement that, what we have
15 is a pool that grows consistent with the progress
16 of peer reviews being done, so we're able to keep
17 it self-sustaining for the external events.

18 MS. PFEFFERKORN: And I guess I'd add
19 that hopefully from the NRC side, we'll be ready to
20 receive and review those results from the peer
21 reviews. I wanted to mention just a few of the
22 examples. I'm not going to go into detail. You
23 guys already know the ongoing efforts on Reg Guide
24 1.174 development, Reg Guide 1.229, substantial
25 effort and seismic --

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1 CHAIRMAN STETKAR: Stacey, the
2 microphone.

3 MS. PFEFFERKORN: Seismic
4 infrastructure development here on the NRC side.
5 We've already talked about the risk groups. I
6 mentioned knowledge management already. We
7 participate in the risk management team, an
8 internal group aimed at ensuring technical
9 consistency across the agency with related to risk-
10 informed activities.

11 And also cross-agency efforts on
12 research advances such as user need requested
13 research, etcetera. So there's a substantial --
14 you can go to the next slide -- really the main
15 message here is that there's really a substantial
16 increase in licensing work coming in. I've already
17 notated the specific areas.

18 And concurring with that, we have all
19 these initiatives going on to enhance current
20 processes and create new processes. So really
21 where we're going with this is that we're trying to
22 leverage staff resources as best we can to
23 streamline reviews, and I think Stacey's going to
24 discuss that aspect of the staff --.

25 MS. ROSENBERG: Okay. So it looks like

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1 our workload is increasing, and we believe that the
2 60 percent is probably an underestimate from more
3 recent public meetings with industry officials,
4 where they've indicated additional risk-informed
5 submittals, above what was provided in the earlier
6 estimates.

7 So we're, you know, what we're trying
8 to do now is figure out how to streamline reviews,
9 as I do not believe that our FTE is increasing in
10 the next year or two. So looking internally, we're
11 going to try to manage our workload and prioritize
12 according to resource effectiveness, you know, make
13 sure we can try to assign specific plants to
14 specific reviewers who are very, very familiar with
15 the F&O reviews for that particular plant.

16 We're trying to prioritize according to
17 the complexity of the review, and we're trying to
18 think of other ways to try to streamline our
19 reviews. We think on the industry side, a way to
20 streamline reviews would be to limit deviations and
21 variances from approved topical reports and TSTFs.

22 From what we're seeing, when
23 applications come in with several variances and
24 deviations from approved topical reports, this
25 really takes a lot more time than our review of the

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1 facts and observations disposition. So this is a
2 really substantial part of our review. So it does
3 slow down the review a lot.

4 Also, another area that we could see
5 streamlined, where we could streamline reviews more
6 is if when submittals came in, they adhered to the
7 limitations and conditions of approved topical
8 reports and TSTFs.

9 There's a subset of limitations and
10 conditions that provide specific submittal
11 guidance, and we have seen a lot of times that
12 information is missing. And so that that leads to
13 RAIs and, you know, a round of RAIs right there.

14 We also believe that, you know,
15 sometimes we see very high quality F&O, fact and
16 observation dispositions. Sometimes we do not see
17 that. When we see the high quality F&O
18 dispositions, this does go a lot faster, and what
19 we mean by that is a complete description of the
20 F&O and a detailed and accurate discussion of the
21 disposition, and making sure to have a recent full
22 scope and focus scope peer review.

23 What we've seen is in some of our
24 licensing applications, there hasn't been a peer
25 review since maybe the late 1990's, and that's

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1 before, you know, revised standards, and so that
2 leads to more RAIs as well. So these are some of
3 the things that we think we could do in the near-
4 term to -- that could be done in the near term to
5 try to streamline some of the reviews, to make them
6 as efficient and effective as possible.

7 CHAIRMAN STETKAR: Good, thank you.
8 Any questions for Stacey or Candace? If not, Mary,
9 you're up and if you can, zip through the things
10 that we've seen before please.

11 MS. DROUIN: I say background, but it's
12 like one slide. I'm really focused on where we are
13 now and where we're going in the future with this
14 document. So if we go to Slide 3, this is my only
15 background. You know we originally published in
16 2000. We did Rev 1 to better structure it. We
17 held a workshop back in 2015 and it was well
18 attended with some great feedback, and we made some
19 minor changes to the Rev 1.

20 People felt it was in a good enough
21 form to publish it, and it is with Publications as
22 we speak right now. One thing I really want to
23 point out is that even though 1855 is led by
24 Research, we have a large participation from staff
25 from NRR and NRO, because they're ultimately the

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1 users of this. So they've been invaluable in this
2 process.

3 So we had the workshop and they really
4 did not give us a whole lot of changes they felt
5 needed for Revision 1. It was just some minor
6 clarifications. But they did identify quite a few
7 issues that we said okay, you know, we agree with
8 these. But they're going to go in the next
9 revision of the reg guide, and these were just some
10 of them.

11 Because these were issues that were
12 really going to entail a lot more dialogue. For
13 example, you know, they wanted us to expand the
14 risk metrics beyond core damage frequency and large
15 early release frequency. Good ideas, but that's
16 not so simple and it's going to require dialogue.
17 It might require policy changes, so that was just
18 never something we could do in Rev 1.

19 So I want to go through all of these at
20 this point in time. You know, you'll be hearing
21 more about this over time as, you know, next year,
22 I think next year we'll start working on Rev 2.
23 But you know Rev 2, we're looking a couple of years
24 down the road. There were also issues that were
25 identified from the workshop that we said these

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1 don't belong in this NUREG. Good ideas, but they
2 belong elsewhere.

3 For example, additional guidance on
4 scenario formulation. That doesn't belong there,
5 you know. I'm not sure where it belongs but it
6 certainly doesn't belong. So those, you know,
7 we'll start discussing these with the, you know,
8 different entities to see if and where these issues
9 need to be pursued.

10 The last thing that came out of the
11 workshop was they felt very strongly, and we had
12 already identified this under the Risk Working
13 Group, was the need to develop training, and they
14 saw and they recommended two levels of training.
15 Some brief type of training to educate both staff
16 and management with the focus more on management.

17 But we felt, you know, it ought to go
18 to staff also on the concepts that are in NUREG-
19 1855 and the EPRI reports, and then a more detailed
20 training closer to the workshop that would get into
21 getting into the details of the guidance and going
22 through lots of different diverse examples of how
23 to implement the guidance in 1855.

24 So where we are right now is that, you
25 know, we have been working on this web-based

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1 course. It's designed to be if you decide not to
2 do any of the click windows for the optional
3 information, you should be able to get through the
4 course in like 20 to 30 minutes, and then if you
5 decide to read all the optional information, it
6 could take you up to one to two hours. So it's up
7 to you.

8 This fourth bullet is really a big one
9 because, you know, we've been piloting the web-
10 based course and, you know, we thought we made it
11 clear that this is just focusing on the concepts.
12 It's not trying to solve the world, this course,
13 and it's only focusing on the concepts of 1855 and
14 the EPRI reports.

15 I mean for example, one comment we got
16 from one of the pilots was well, you know, where
17 was the guidance on how to calculate an
18 uncertainty? We thought well that's, you know, a
19 good question but that's not what 1855 is all
20 about, you know. There's other documents in place
21 if you want to understand how, you know, to
22 calculate your uncertainties.

23 The last thing was, biggest challenge
24 was how to limit the scope of this course. I mean
25 people just wanted to -- the messages that they

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1 wanted to include in this document were just huge,
2 and when we did our first draft of the course, just
3 the message slides was about 50 slides, and we said
4 no, no, no, no. The course overall is only
5 supposed to be 20 to 30 minutes.

6 So that was a real challenge, of how to
7 limit and to identify and focus what were the key
8 messages we wanted to, and I just want to
9 acknowledge that Sandia National Lab was a major
10 source of help here.

11 MEMBER BLEY: Is that sitting around
12 somewhere on the in-house website that somebody
13 could take a look at it?

14 MS. DROUIN: It will be.

15 MEMBER BLEY: I'm real interested. I
16 don't know. I'm trying to -- I can't read the
17 document in two hours, so I'm not sure what we're
18 telling people in that time.

19 (Simultaneous speaking.)

20 MS. DROUIN: Well, the next slide. The
21 course is divided, and I wasn't intending to go
22 through all of these, but the course is divided
23 into these 18 screens, and then for each screen,
24 you know, there's certain messages that we answer
25 for each one of those. Then if we feel that there

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1 ought to be more detailed information you ought to
2 get, then we have these optional windows that you
3 can click.

4 So you know, the first screen you'll
5 see is why is this guidance needed and what is the
6 purpose of 1855 and the associated. So each -- and
7 then what I've done is I picked, maybe not the
8 right choices but it's the ones I picked, two
9 examples of some of the screens.

10 Like Screen 2, this is what you'll see,
11 you know. What should you learn from this course
12 and then there's four bullets that, you know, and
13 it's going to come up slowly be really kind of
14 neat-looking and maybe we'll have some music behind
15 it. No, just kidding.

16 MEMBER SKILLMAN: Mary, how were those
17 items chosen?

18 MS. DROUIN: A lot of dialogue, a lot
19 of discussion, a lot of dialogue among a lot of
20 people. I don't know how better to answer that,
21 and I was trying to stay faithful to 1855, and that
22 was the hardest thing, is that it was very easy to
23 go off on tangents. But you know, we really tried
24 to stay. But here's an example where if you just
25 read the screen, what you see is the yellow part.

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1 Then click here for additional
2 information that you don't have to click there, you
3 know. That's your option if you want to get to the
4 additional information, and it's all these
5 additional information screens that will take you
6 to be one to two hours in length.

7 MEMBER BLEY: I'm sorry. We were just
8 remembering our last security-related cartoon
9 course and said no, not that.

10 MS. DROUIN: No, we're not doing
11 cartoons. I just -- I just threw that in for a
12 laugh.

13 (Laughter.)

14 MS. DROUIN: So that's one example of
15 one of the screens. The next one is -- oops, wrong
16 way. This is one, how are different levels of
17 detail conservatisms treated, how is aggregation
18 addressed, Stage G. So what you see is in the
19 yellow and then for each of those bullets you can
20 click for additional information and for the second
21 bullet, you know, that will be the additional
22 information that you will see.

23 We had not programmed this yet. We did
24 not want to program the course until we had piloted
25 and got feedback on the language that we had for

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1 the screens and for the additional information, and
2 we're just wrapping up those pilots, you know,
3 right now, as we speak. So the last viewgraph, you
4 know, as I said, we've just completed the pilots.
5 Our intent is to have this --

6 MEMBER BLEY: Have you piloted some of
7 that piloting with management?

8 MS. DROUIN: Yes. We actually -- we
9 had staff from NRR, NRO, NMSS and Research, both
10 within the risk people and non-risk people, and a
11 few managers. So we hope to have it issued by the
12 end of this calendar year. I mean we look like
13 we're on schedule at this point in time.

14 Then you know, our intent is to develop
15 the detailed training course, you know. It's to be
16 patterned after the workshop. Right now we're
17 envisioning it to be two days, with a half a day
18 going over the guidance and then the remaining day
19 and a half going over, you know, very different
20 diverse examples of how to implement it. Our goal
21 is to hold the first course in, you know, late
22 spring of next year.

23 Revision 2, you know, we hope to start
24 talking about it, you know, early next year, with a
25 completion target and that's a loose target, you

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1 know, of 2018. But it's going to be dependent on
2 the issues and their significance and resources and
3 all that other good stuff.

4 CHAIRMAN STETKAR: With final
5 publication in like 2030, right?

6 MS. DROUIN: I'll tell you, you know.
7 Getting things published these days is a challenge
8 in and of itself.

9 MEMBER BALLINGER: When is the point at
10 which an uninitiated, somebody who has never seen
11 this before, like maybe an ACRS member that's not
12 PRA-sensitive, gets a chance to look at this or try
13 it? When are you going to have --

14 MS. DROUIN: For the web-based --
15 (Simultaneous speaking.)

16 MS. DROUIN: By the end of this
17 calendar year.

18 MEMBER BALLINGER: Okay. So that's
19 when the -- that's when the rubber really hits the
20 road, right?

21 MS. DROUIN: Yes, yes. Right now, we
22 just completed the pilots and so I'm starting to
23 look at and, you know, we had created a whole
24 detailed list of questions. We wanted the people
25 who took the pilots to answer, and you know, then

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1 they also had the freedom to provide their own
2 comments.

3 So we're just right now completing the
4 pilots and so we're going to start, you know,
5 ciphering through all the comments we received and
6 see where we need to, you know, make changes and
7 then we'll be ready to turn it over to the
8 programmers.

9 CHAIRMAN STETKAR: Great.

10 MS. DROUIN: So I kind of rushed
11 through that.

12 CHAIRMAN STETKAR: But it was good.

13 MS. DROUIN: Well thank you.

14 CHAIRMAN STETKAR: No, I mean actually
15 what -- Joe, do you have --

16 MR. GIITTER: Yeah, just briefly. I
17 wanted to comment. I kind of came in towards the
18 end of Bill's discussion, but I heard you talk a
19 little bit about the vision for change, and you
20 know, the role of the Risk-Informed Steering
21 Committee. I think I just want to emphasize that
22 we're going through change right now.

23 It's not, you know, the big visionary
24 change, but it's the Caisson principle of
25 incremental change, and it's hitting us square in

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1 the face. But I think ultimately, and I don't want
2 to speak for industry, but I'm speaking for the NRC
3 right now, I think this change can lead to safety
4 improvements, because in an environment, whether
5 it's what we're facing in the NRC now in Project
6 Aim or delivering the Nuclear Promise, it comes
7 down to what do you focus on, what do you spend
8 your resources on.

9 I think the more you can focus on risk
10 and use risk insights to make decisions, I think
11 the better of you're going to be. So that's what
12 all this is about. But we do have challenges, and
13 I think you heard, you got a sense of that today,
14 that there were some challenges.

15 For one thing, a lot of the staff
16 working on a lot of these risk-informed decisions,
17 I'm sorry, Risk-Informed Steering Committee
18 activities, there's the same staff working on risk-
19 informed licensing actions, and working on STP. So
20 you know, we do have a resource challenge.

21 We have worked very hard to bring in
22 highly-qualified staff. We have our own, as you
23 know, our own training program for our grow your
24 own PRA professionals, and I think that's working
25 very well for us. We also are challenged by a

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1 surprisingly large percentage of staff within the
2 NRC and probably within industry as well, who
3 really haven't embraced the idea of risk-informed
4 decision-making.

5 And that -- it has been a real
6 challenge, and it's something that I deal with and
7 other division directors in NRR and I believe other
8 offices deal with on a daily basis. So we have our
9 work cut out for us, but I'm encouraged, because we
10 do have some very good staff and I think you heard
11 them today.

12 I also wanted to point out behind your
13 Rich Correia. This may be Rich's last ACRS
14 meeting. Rich is retiring, and I wanted to
15 acknowledge his leadership and working with him is
16 a -- as my counterpart in the Office of Research,
17 and I think it was pleasurable to work with them
18 and I just wanted to acknowledge him publicly. So
19 that's it for me.

20 CHAIRMAN STETKAR: And since you
21 brought it up, I'd like to take at least an
22 opportunity, at least personally, Rich, I'm going
23 to be sad to see you go.

24 MR. CORREIA: Thank you.

25 CHAIRMAN STETKAR: I appreciate

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1 everything that we've discussed for the last
2 decade, and thanks a lot Joe for your kind of
3 insights. Anything else for the staff? If not,
4 let me -- I think we have the outside line open,
5 but let me first ask if there's anybody in the room
6 would like to make any comments?

7 (No response.)

8 CHAIRMAN STETKAR: If not, I believe we
9 have the public line open. If there is someone out
10 there, can you just do me a favor and say hello, so
11 I confirm it's open? Anybody.

12 MR. LAUR: Well, this is Steve Laur.
13 Can you hear me?

14 CHAIRMAN STETKAR: Great, yep. Thanks,
15 Steve. Now if there's anyone on the public line
16 who would like to make a comment about these
17 proceedings, please identify yourself and do so.

18 (No response.)

19 CHAIRMAN STETKAR: That's enough time.
20 Okay. We'll get the public line closed so that we
21 stop the snaps and pops. I'd like to thank
22 everybody, the industry and the staff. You covered
23 a heck of a lot of ground. A lot of my comments
24 were pretty provocative. I know that there were
25 intentional. It's a work in progress. I think

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1 that there's a lot of promise on all of the fronts
2 here.

3 I think it needs some piloting. I
4 think it needs some practical kind of hands-on
5 experience from both the industry and the staff.
6 It's not necessarily as simple as just writing down
7 general guidance and putting boxes and tables and
8 things like that.

9 So I'm encouraged to hear that that
10 process is continuing in real time. I mean we're
11 not talking about, you know, the next couple of
12 fiscal years. So that's really good and hopefully
13 we'll get to a place where all of this material
14 comes together.

15 As we always do, I'll go around the
16 table and ask any of the members if you have any
17 final comments, and I'll start with Ron. Turn your
18 microphone on.

19 MEMBER BALLINGER: I thought all the
20 presentations with both industry and you folks were
21 very informative, and I think -- like John, I think
22 this is going to result in a lot of positive, a lot
23 of positive progress. Thank you.

24 CHAIRMAN STETKAR: Matt?

25 MEMBER SUNSERI: Thank you all for all

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1 the informative presentations. You know, it's
2 obvious that there's a lot of moving parts on both
3 the industry side and the agency side. So it's
4 going to be important to maintain a high level of
5 thorough communications, so that you maintain
6 coordination of both sides' efforts.

7 I hope you strive for stronger
8 consensus than just 50 percent plus one on the, you
9 know, both sides because without that strong
10 consensus, it's going to lead to difficulties on
11 the implementation in the long term, right. So
12 getting all the good, strong consensus up front
13 will lead to greater efficiency on the back end,
14 because this is just too important not to get
15 right. But thank you all for the important
16 information.

17 CHAIRMAN STETKAR: Thank you. Dick?

18 MEMBER SKILLMAN: Thank you. Nothing
19 more to add. Thank you.

20 CHAIRMAN STETKAR: Dana.

21 MEMBER POWERS: Nothing more.

22 CHAIRMAN STETKAR: Mike?

23 MEMBER CORRADINI: Nothing more. Just
24 thank the staff and the industry for their
25 presentations.

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1 CHAIRMAN STETKAR: Dennis.

2 MEMBER BLEY: It's the most encouraging
3 afternoon I've had in a long time. I hope the
4 optimism proves true. I just note that I skimmed
5 through the -- I didn't study the staff position
6 the way John did. I skimmed through it and I don't
7 have the same -- I can accept it as an early first
8 draft, as long as you really do something with it.

9 But I saw the comments from NEI back to
10 you and then the comments from you back to them,
11 and they don't seem to have the same sense of joy
12 that I heard today. I hope you really work this
13 out, because it's -- and I hope you have more than
14 a single pilot. Getting to the point that both
15 parties know what's going to happen and actually
16 work together on this is not trivial, and those
17 details of language and process are going to be key
18 to making that work.

19 I have a feeling if we -- I think we
20 did before that 805 stuff happened. There was a
21 lot of optimism too and then there was something
22 not quite the same. I know everybody's working on
23 it, but we're at the high side right now and it's
24 going to be a tough job to work at the detailed
25 level enough that in fact we have the kind of

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1 agreement it sounds like we're trying to reach.
2 Anyway, good luck.

3 CHAIRMAN STETKAR: Walt.

4 MEMBER KIRCHNER: No comment, thank
5 you.

6 CHAIRMAN STETKAR: Jose.

7 MEMBER MARCH-LEUBA: No further
8 comments.

9 CHAIRMAN STETKAR: Joy.

10 MEMBER REMPE: No further comments.

11 CHAIRMAN STETKAR: And with that, again
12 thanks a lot. Honestly, you guys collectively,
13 everybody covered a heck of a lot of material and I
14 really appreciate it. It was a real challenge.
15 With that, we are adjourned. For the benefit of the
16 Subcommittee members, we will reconvene in ten
17 minutes at 5:30 in closed session. We'll have a,
18 for the purpose of the recorder, we're off the
19 public record. We will have a transcript of this
20 closed meeting.

21 (Whereupon, the above-entitled matter
22 went off the record at 5:20 p.m.)

23

24

25

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Risk Informed Decision Making

September 7, 2016

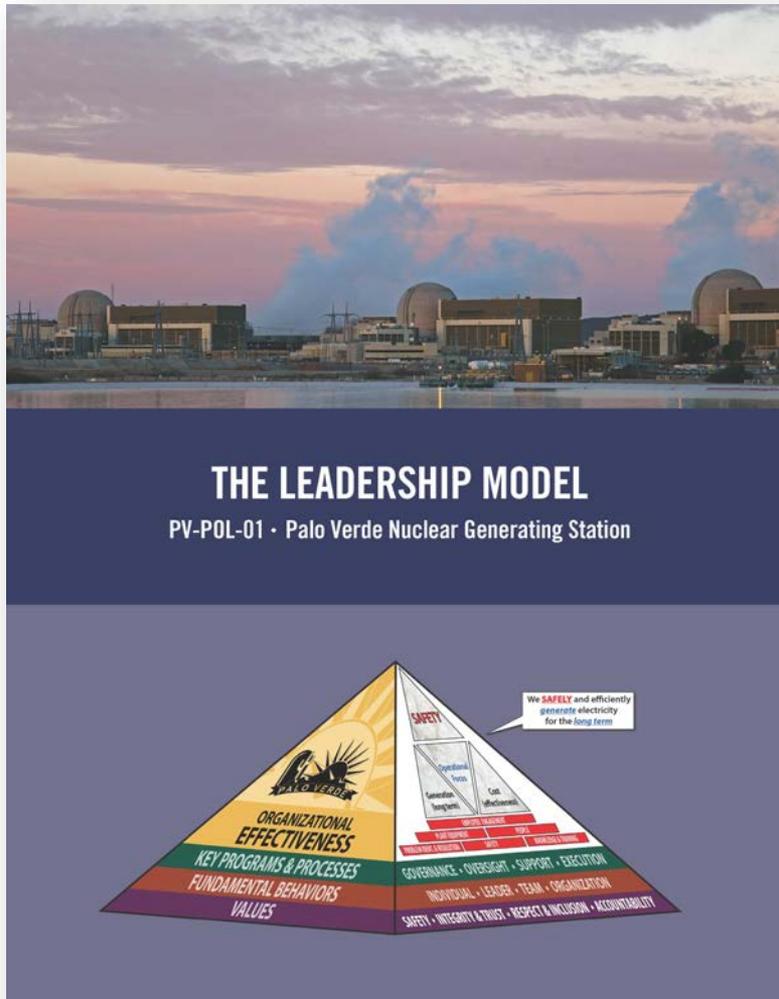
Bob Bement
Executive Vice-President, Nuclear



Risk Informed Steering Committee

- Industry and NRC working together to efficiently and effectively implement risk informed decision making
- Periodic meetings scheduled to discuss priority items related to risk initiatives
- Communication is key to success

Set and Maintain Standards



Focus on Nuclear Safety Every Day

- Every group across the site starts shift discussing plant status and safety, including the unit Probabilistic Risk Assessment (PRA) risk profiles for the work week
- Plant status (including changes to risk) and safety are updated at the start of any meeting

Risk Initiatives

- Initiative 1: TS required actions end state
- Initiative 2: Missed surveillances*
- Initiative 3: Mode restraints*
- Initiative 4b: Risk informed completion times**
- Initiative 5b: Relocate surveillance frequencies*
- Initiative 6: LCO 3.0.3 relief**
- Initiative 7: Hazard barriers**/snubbers*
- Initiative 8: Remove systems from TS

* Initiatives have been implemented at Palo Verde

** Initiatives have either been submitted or planned to be submitted at Palo Verde



Surveillance Frequency Relocation Risk Initiative 5b

- Combined STARS Effort
 - Surveillance Test Risk Informed Documented Evaluations (STRIDES)
- 8 STRIDES implemented
- 10 STRIDES approved/awaiting implementation
- 5 STRIDES in review/approval process
- 2-3 new STRIDES planned each year
- Estimated savings when implemented
 - 5,010 man-hours per year

Most Beneficial STRIDES

- Diesel Generator and Integrated Safeguards Loss of Offsite Power (LOOP), LOOP/ Emergency Safety Features (ESF) test – 18 months to 18 months staggered
- Remote Shutdown Panel Disconnect and Control Circuit test – 18 months to 36 months (matches "B" train outage)
- Electrical Distribution checks – 7 to 31 days
- Diesel Generator 24 hour Load and Hot Restart test – 18 months to 18 months staggered
- Containment Penetration Protective Relay test – 18 months to 36 months

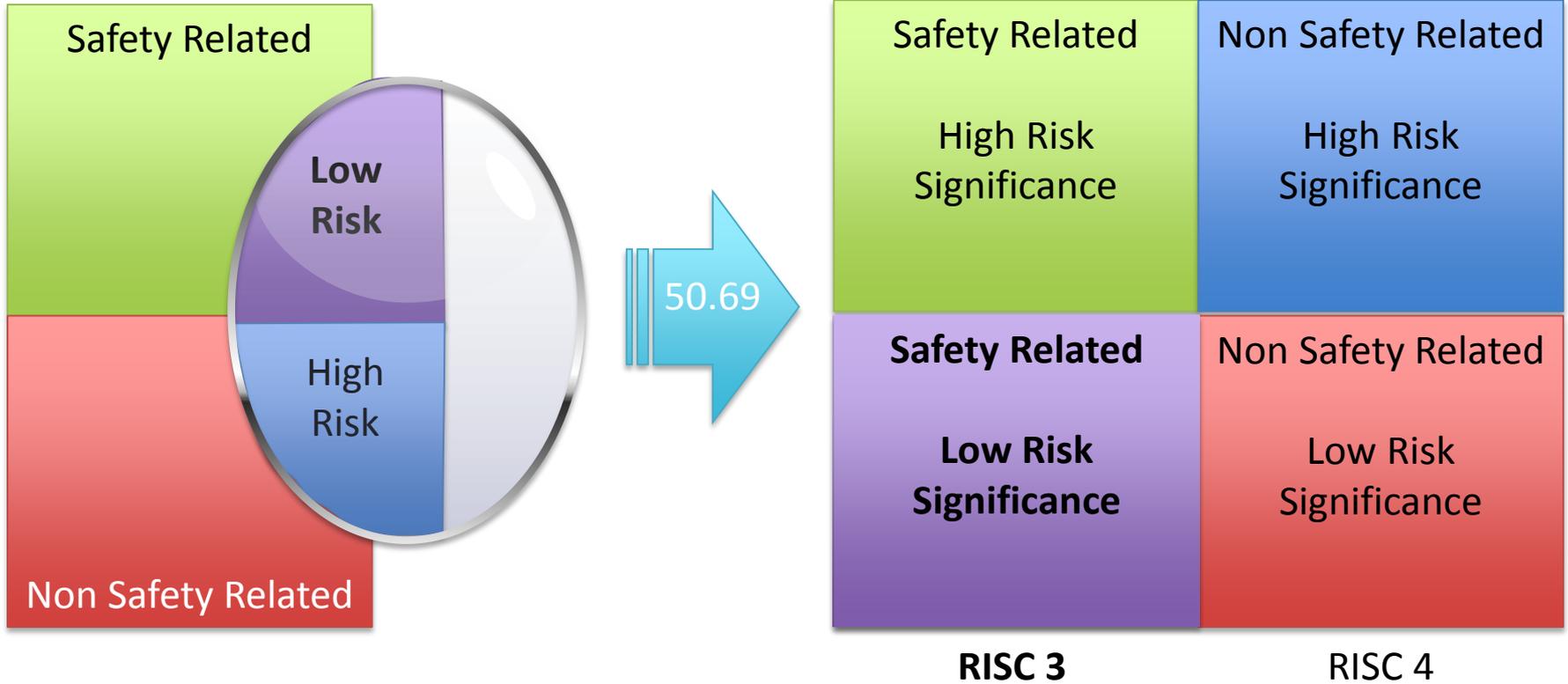
Risk Informed Completion Time

Risk Initiative 4b

- Safety Benefit
 - Increased control of plant configuration during SSC unavailability
 - Avoided shutdowns = Avoided safety challenges
- Operational Benefit
 - Increased flexibility in scheduling maintenance
 - Shorter, less-complex refueling outages
- Financial Benefit
 - Increased plant availability and capacity factors due to avoided plant shutdowns and shorter refueling outages

Risk Informed Engineering Programs

10 CFR 50.69



RISC = Risk Informed Safety Class

Exempted Special Treatment Requirements

RISC-3 Components Can Be Scoped Out of These Safety Related Regulations

Maintenance Rule [10 CFR 50.65]	ASME XI repair & replacements, applicable portions, with limitations [10 CFR 50.55a(g)]	In-service Inspection [10 CFR 50.55a(g)]	Deficiency Reporting [10 CFR Part 21]
Environmental Qualification [10 CFR 50.49]	Applicable Portions of IEEE standards [10 CFR 50.55a(h)]	Local Leak Rate Testing [10 CFR 50 Appendix J]	Event Reporting [10 CFR 50.55(e)]
Seismic Qualification [Portions of Appendix A to 10 CFR Part 100]	In-service Testing [10 CFR 50.55a(f)]	Quality Requirements [10 CFR 50 Appendix B]	Notification Requirements [10 CFR 50.72, 50.73]

Risk Informed Engineering Programs

10 CFR 50.69

- Safety Benefits
 - Focus on safety significant SSCs to improve performance and increase regulatory margins
 - Enhance station's safety culture
 - Raise safety awareness of non-safety-related high risk SSCs
- Operational Benefits
 - Reduce regulatory burden on low safety significant SSCs
 - Streamline processes and procurements
 - Less outage burden for regulatory testing/inspections
- Financial Benefits
 - Reduce procurement costs
 - Fewer resources required for tests, inspections and oversight
- Palo Verde submittal planned for late 2016

FLEX Equipment & Maintenance Rule

- FLEX equipment use for all beyond design basis conditions need not be in Maintenance Rule scope if:
 - Used only for defense-in-depth purposes
 - Not used to satisfy design basis requirements
 - Does not create potential trip hazard
 - Does not create potential failure or actuation of safety related equipment
- Use of EPRI Preventive Maintenance Templates acceptable for all beyond design basis events
 - Not restricted to just external hazards
- Proposed change to NUMARC 93-01 allows increased flexibility for use of FLEX support guidelines in Emergency Operating Procedures
 - Adds defense-in-depth



Summary

- Risk informed initiatives and 10 CFR 50.69 allow resources to focus on risk significant areas
- Optimizing use of FLEX equipment reduces risk
- Risk informed decision making is a key element of Delivering the Nuclear Promise
- All parties need to work together to implement risk informed decision making in an efficient and effective manner



SAFELY and efficiently generate
electricity for the long term

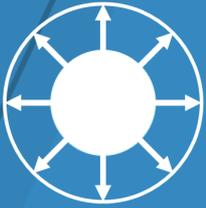
Crediting Portable Equipment and Mitigating Strategies in Risk Informed Decision Making

FRIDM Task Force

Thomas Zachariah, NEI
Don Vanover, JENSEN HUGHES
September 7, 2016
ACRS PRA Subcommittee



FRIDM Task Force Mission

	Maximize Areas of Credit	Expand operational and regulatory credit given to mitigating strategies
	Maximize FLEXibility	Expand where portable equipment is used in plant operations
	FLEX and Beyond	Be inclusive of all portable equipment beyond just FLEX (e.g. B.5.b portable equipment)

Task Force Strategy

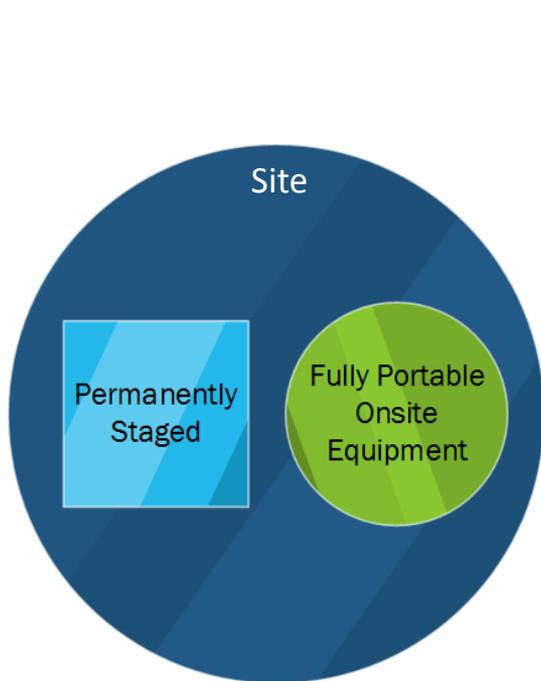


Mitigating Strategies



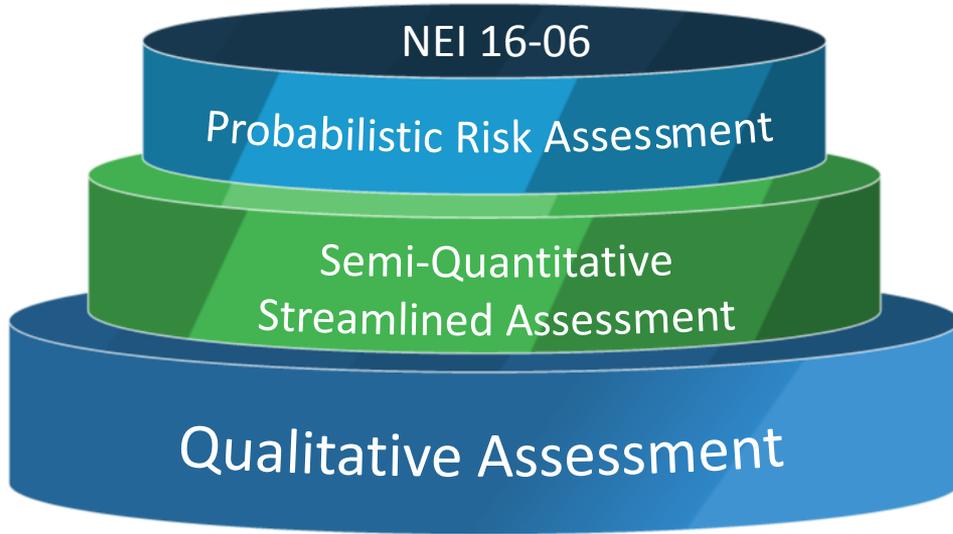
Mitigating strategies utilize portable equipment for various safety functions during beyond design basis conditions and the loss of permanently installed plant equipment

Applicability of Equipment



- Permanently installed plant equipment – Not Applicable
- On-site portable equipment – Applicable
- On-site permanently staged portable equipment – Potentially Applicable
- Off-site portable equipment – Applicable – *must account for mission time of the scenario before credit is established*

Tiered Approach from NEI 16-06

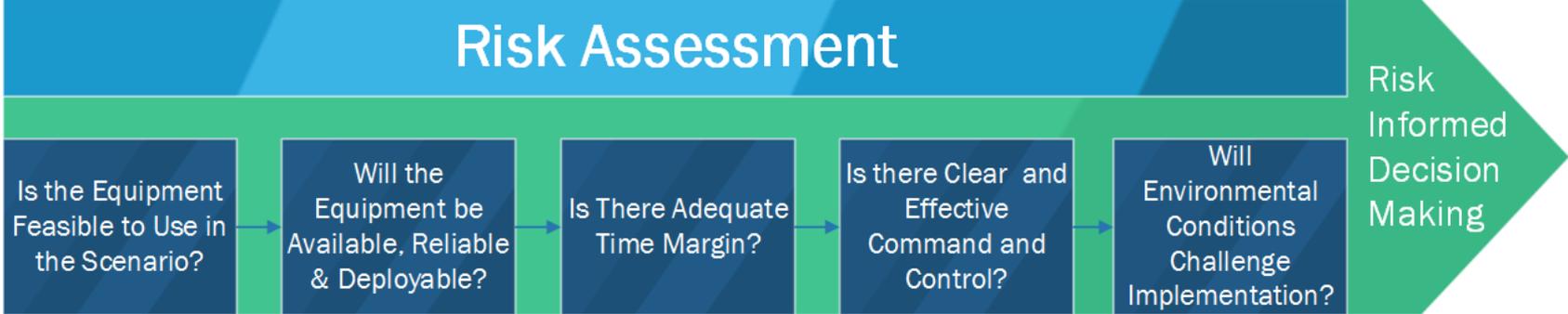


- Guidance provides a three-tiered approach for establishing credit
 - Qualitative considerations provide foundation
 - Streamlined approach provides an estimate of credit
 - PRA approach looks to establish appropriate credit in Risk Informed Applications

Potential Applications of NEI 16-06

Activity	Areas of Potential Benefit						
	SDP	NOEDs	MSPI	Maintenance Rule (a)(4)		RG 1.200 Risk Applications	
				Shutdown Risk	Online Maintenance	Defense in Depth	Risk Calculations
Qualitative Approach	✓	✓		✓		✓	
Semi Quantitative Streamlined Approach	✓	✓			✓		
PRA Modeling	✓	✓	✓		✓		✓

Considerations of NEI 16-06



Purpose of Streamlined Approach

- FLEX capabilities can help reduce the risk from some contributors in plant-specific PRAs, e.g., station blackout scenarios
- It is desirable to have a means to get some numerical credit for FLEX in regulatory interactions, e.g., SDPs, NOEDs, etc.
- The streamlined quantitative approach is not intended to meet the PRA quality requirements for a RG-1.200 application

Streamlined Quantitative Approach

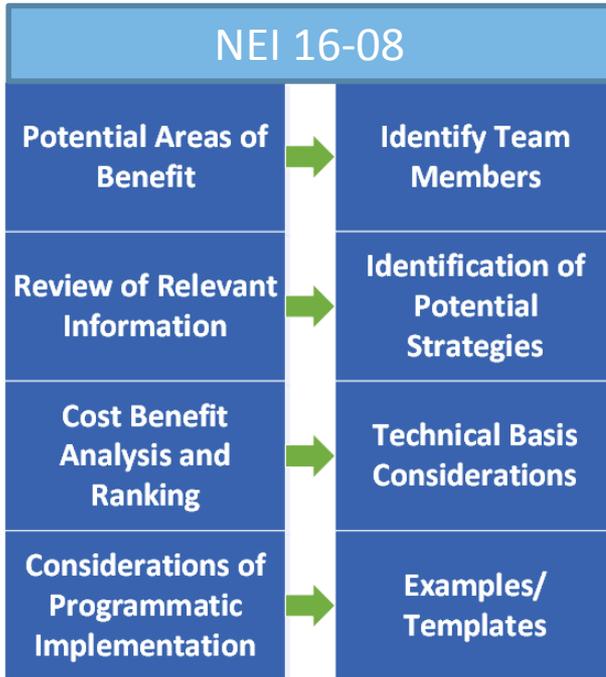
- Mirrors factors considered in qualitative assessment
- Implemented in decision tree format
- Uses a holistic construct to assign an overall failure probability for implementing an overall mitigating strategy
 - It does not represent a specific human reliability analysis methodology
- The final failure probabilities utilized are in line with generally accepted likelihood values (i.e., 0.1 to 0.3 failure probabilities) for something deemed feasible and likely to succeed

Enhancements to PRA Modeling

Equipment Data	Existing Failure Frequency Data	Portable Equipment Specific Failure Frequency Data		
Human Reliability	Existing Tools and Methods	Use of Judgement	Unique Actions	Portable Equipment Specific Actions (e.g., Transportation and Installation)

- Existing data and methods are sufficient for establishing credit for mitigating strategies
- However, enhancements are necessary to establish the appropriate level of credit
- NEI 16-06 provides approaches to address issues until data and methods are refined
- EPRI has started work for the development of failure frequencies and enhancements to HRA methods

Purpose of NEI 16-08



- The purpose of this document is to provide guidance on expanding the use of portable equipment at sites
- Objectives:
 - Provide guidance on how to identify beneficial uses
 - Drive consistency in implementation

Risk-Informed Licensing

- Risk-Informed Technical Specification Surveillance Frequency (TSTF 425)
- Risk-Informed Technical Specification Allowed Outage Times (TSTF 505)
- Risk-Informed Special Treatment Requirements (10 CFR 50.69)
- Performance-Based Standard for Fire Protection (NFPA 805/ Alternate Fire Protection Rule (10 CFR 50.48c) - Fire PRA Realism

PRA Technical Adequacy

ACRS Reliability and PRA Subcommittee Briefing
on RISC Activities
September 7, 2016



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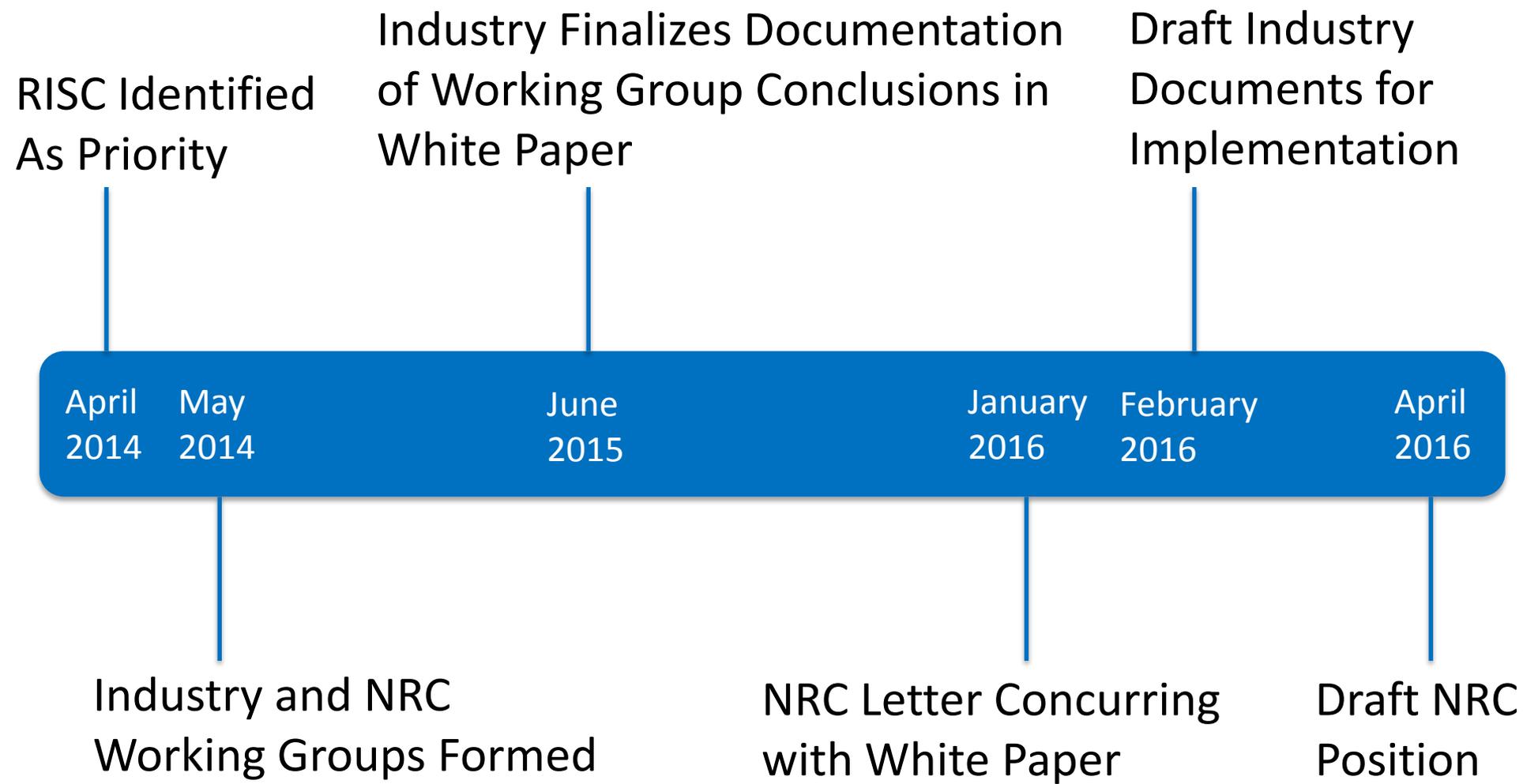
Genesis of Effort

- RISC focus:
 - Identifying issues impeding progress in risk-informed regulation
 - Actively address those not approaching resolution via normal regulatory processes
- Launch of PRA technical adequacy effort
 - Identified by industry and NRC as difficulty for risk-informed licensing applications
 - Area of major difficulty for NFPA 805 transition
 - Existing regulatory guidance (e.g. RG 1.200) was not fully meeting NRC and licensee needs in this area

Scope of Effort

- Objective 1: Develop streamlined approach for making new PRA methods available for regulatory application
- Objective 2: Develop approach for more efficiently closing peer review Facts and Observations (F&Os, or findings)
- Objective 3: Identify and address any remaining gaps in peer review guidance documents

Timeline of Effort



F&O Closure Process

ACRS Reliability and PRA Subcommittee Briefing
on RISC Activities
September 7, 2016



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Issue Overview

- Licensees and NRC devote substantial resources to review of PRA technical adequacy
 - Industry-led peer reviews
 - NRC review of peer review findings in support of licensing applications
- Findings from previous peer reviews could only be permanently closed via another peer review
 - Licensees had to submit findings in multiple risk-informed applications
 - Led to multiple NRC reviews of the same findings
- New approach to permanently closing findings would reduce scope and complexity of risk informed license amendment reviews

Outline of Approaches Available

- Options
 - Original peer review team close out
 - New peer review close out
 - NRC review close out
 - Licensee/independent assessment close out
- Other than original peer review team close out, each offered a viable approach
- Industry white paper recommended hybrid approach, allowing licensees to use NRC review, licensee/independent review, or new peer review to permanently close out findings

Implementation of Recommended Approach

- NRC concurred with concept of hybrid approach
- Two of three means of finding close-out available via existing guidance
 - NRC close-out
 - New peer review
- Licensee close-out required new guidance
 - Re-termed “independent assessment” to reflect expectations for reviewer independence
 - Proposed process outlined in draft appendix to NEI guidance documents on PRA peer review

Industry Guidance Document on Finding Close-Out

- Briefly outlined processes available for closing out via new peer review or NRC review
- Describes process for independent assessment in detail
 - Process
 - Team membership
 - Review scope

Industry Guidance Document on Finding Close-Out

Brief Description of Existing Processes

New Peer
Review

NRC
Review

Detailed Description of New Independent Assessment Process

Process

Team
Membership

Review
Scope

Independent Assessment

- Overview
 - Similar to a peer review
 - Scope limited to evaluating the closure of findings
- Team members
 - Qualified to perform peer review of relevant findings
 - Meet ASME/ANS PRA Standard definition of independence
 - Have access to documentation and site as necessary

Independent Assessment Process

Review
Documented
Finding Closure
Provided By Utility

```
graph LR; A[Review Documented Finding Closure Provided By Utility] --> B[Reach Determination on Closure Status of Finding]; B --> C[Document Conclusions in Final Report Available for NRC Audit];
```

Reach
Determination on
Closure Status of
Finding

Document
Conclusions in
Final Report
Available for NRC
Audit

Pilot of Independent Assessment Process

- Conducted for Limerick Generating Station PRA in July
- NRC observed process
- Preliminarily appears to offer opportunity to greatly reduce number of findings undergoing review in licensing applications
 - 115 reviewed
 - 14 remain open
- Several lessons learned to incorporate moving forward
 - Potential need for concurrent focused-scope peer review
 - Availability of materials prior to on-site review week

Next Steps for Independent Assessment Process

- Additional pilot to be conducted in early November
- Achieve alignment and endorsement from NRC
- Open issues
 - Reviewer independence
 - Ability of team to issue new findings
 - Mutual understanding of treatment of closed findings

Vetting Panel Process

ACRS Reliability and PRA Subcommittee Briefing
on RISC Activities
September 7, 2016



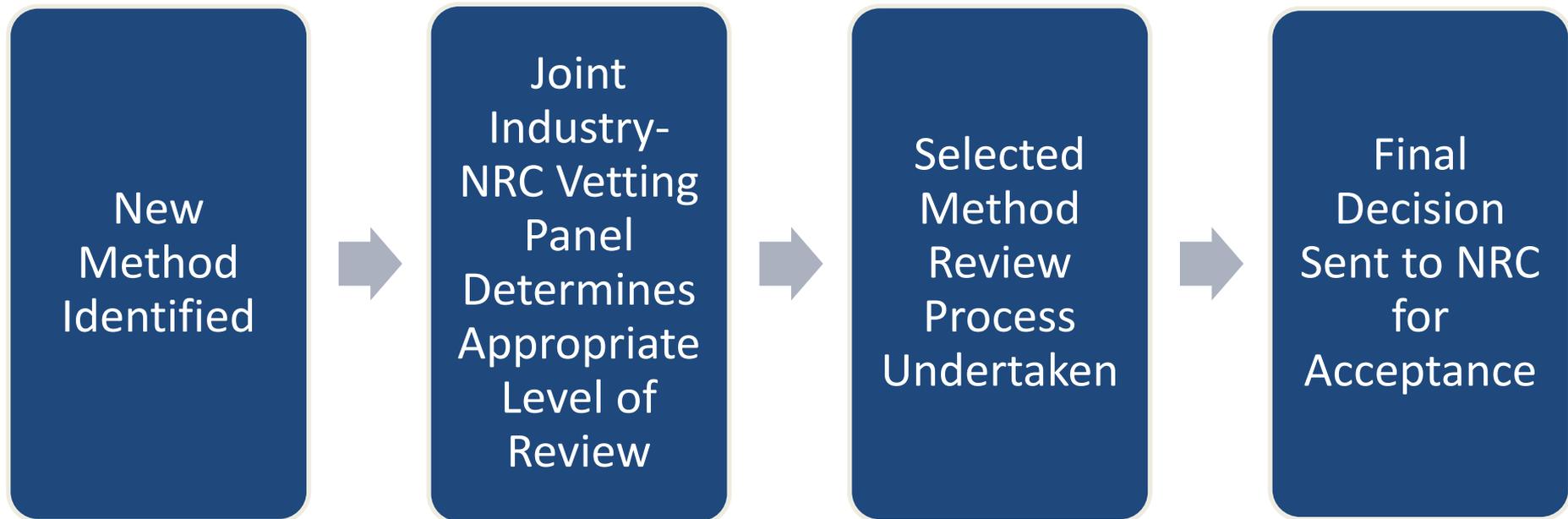
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Issue Overview

- Scope of PRAs supporting licensing applications has rapidly increased in the past 5-10 years
- Development of Fire PRAs for NFPA 805 revealed that high volume of new methods, tools, and data would be needed to achieve realism
- RG 1.200 does not address approach for ensuring NRC staff familiarity with methods being used to support licensing applications
 - Led to substantial delays in NFPA 805 review process
 - Addressing this would prevent re-occurrence of issue for future PRAs and licensing applications
- Process for expeditiously making new methods available for regulatory application would speed improvement of state-of-the-art in licensee PRAs

Proposed Methods Process Overview



Vetting Panel

- Composed of 3-4 industry and 3-4 NRC PRA experts
- Supplemented by subject matter experts as necessary
- Charged with:
 - Assessing utility of previous method reviews, method maturity, and other attributes
 - Determining appropriate review path
 - Conducting brief reviews of methods, in some cases

Methods Vetting Considerations

Source

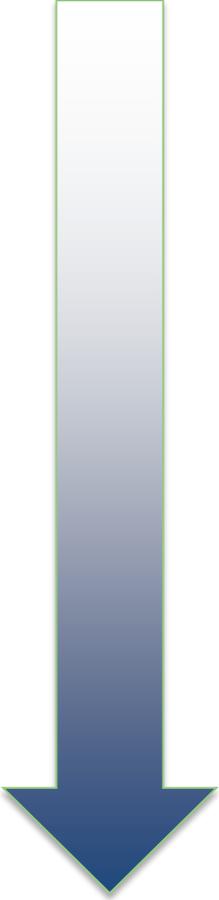
Maturity

Application
Experience

Pedigree

Complexity

Methods Review Process Options

- 
- No further review
 - Method may be used following conclusion of comment period
 - Method may be used following addressing comments
 - Vetting panel assessment against ASME/ANS PRA Standard
 - Focused-scope peer review
 - Full methods review panel

Next Steps

- Complete pilot
 - Three Fire PRA methods in EPRI report addressing
 - Liquid/oil spills
 - Wall and corner effects
 - Transient fire propagation parameter
 - On hold pending resolution of fee waiver issue
- Resolve open issues
 - Fee waivers
 - Understanding of role of vetting panel
 - Independence of vetting panel
 - Duplicative NRC review of methods

Crediting Mitigating Strategies in Risk-Informed Decision Making

Michael Montecalvo

PRA Operations & Human Factors Branch

Division of Risk Assessment

Office of Nuclear Reactor Regulation

ACRS PRA Subcommittee

September 7th, 2016

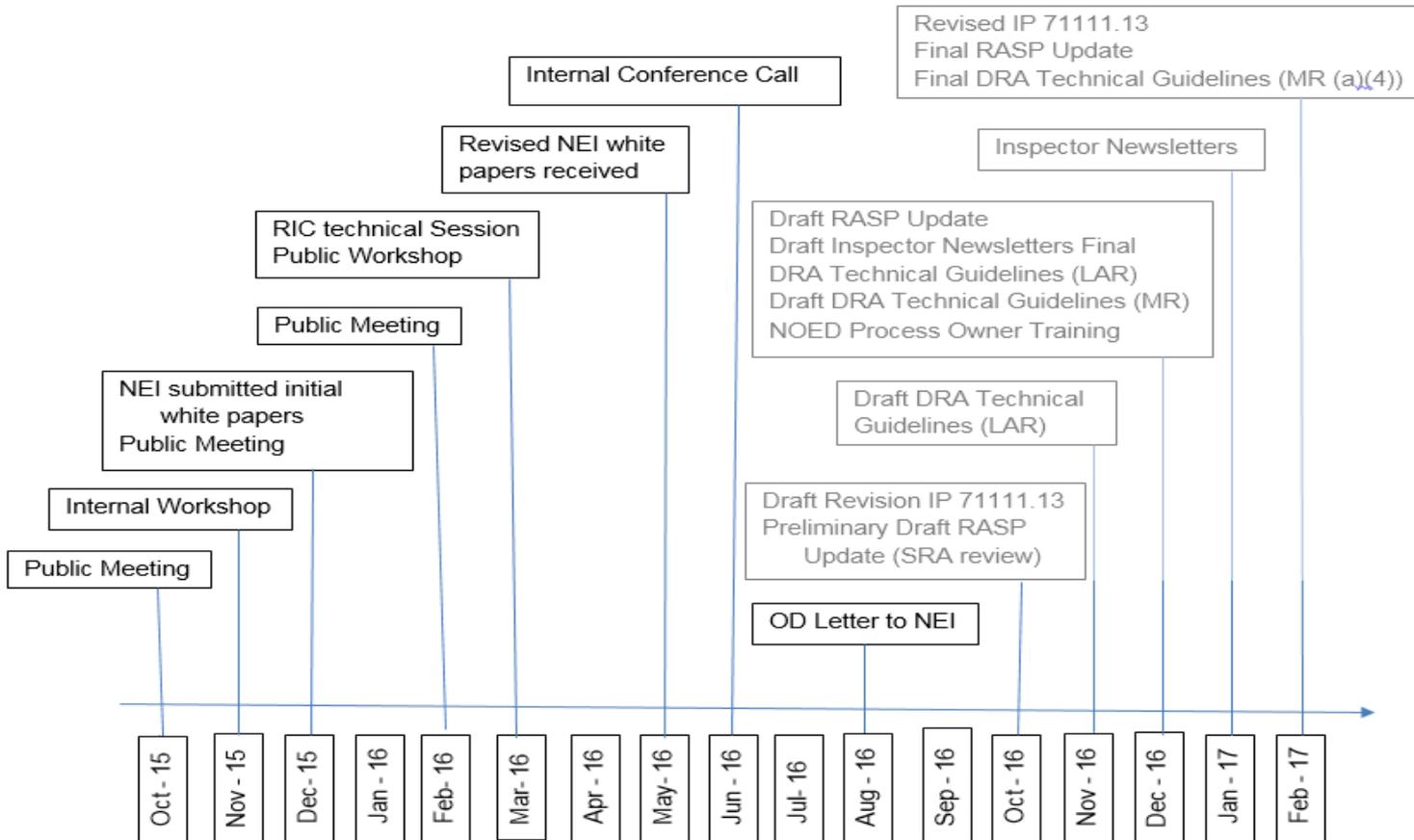
OBJECTIVE

- Provide Background of the Project
- Interactions with Industry
- Current Status of the Project
- Next Steps

Background

- Fukushima Orders required strategies to maintain/restore core cooling, containment, and spent fuel pool cooling
- Licensees installed equipment meets orders but can be used for multitude of uses
- RISCs directed short term (6mos – 1 year) effort to provide credit for equipment in RIDM
- NEI developed two white papers to provide guidance to licensees

Timeline



White Papers and Workshop

- Received ~ 150 comments from 16 NRC sources
- Good participation at workshop (Industry and NRC)
 - NRC (NRR, RES, NRO, Region 1, Region 3)
 - Industry (NEI, Arizona Public Service Co., EPRI, Duke Power, PWR Owners Group, Westinghouse, FENOC, EPM, Exelon)
- 21 major comments discussed
- NEI white papers will provide a framework to streamline licensees requests for credit for a number of RIDM applications
- The white papers appropriately address a large number of issues important to NRC staff in RIDM

After Public Workshop

- Revised white papers received from NEI
- Sent for additional review to staff
- Internal workshop to discuss remaining areas of concern
- Letter issued from NRR Office Director

Areas of Concern

- Licensees should ensure that the use of the base failure probability is evaluated, as appropriate, for the applicable scenarios of interest.
- Time margin calculations need to indicate appropriate margin to account for uncertainties in equipment deployment.
- Equipment reliability data and testing protocols should be considered when assessing the equipment availability attribute.
- The effects of possible diagnosis errors need to be analyzed for the applicable scenarios.

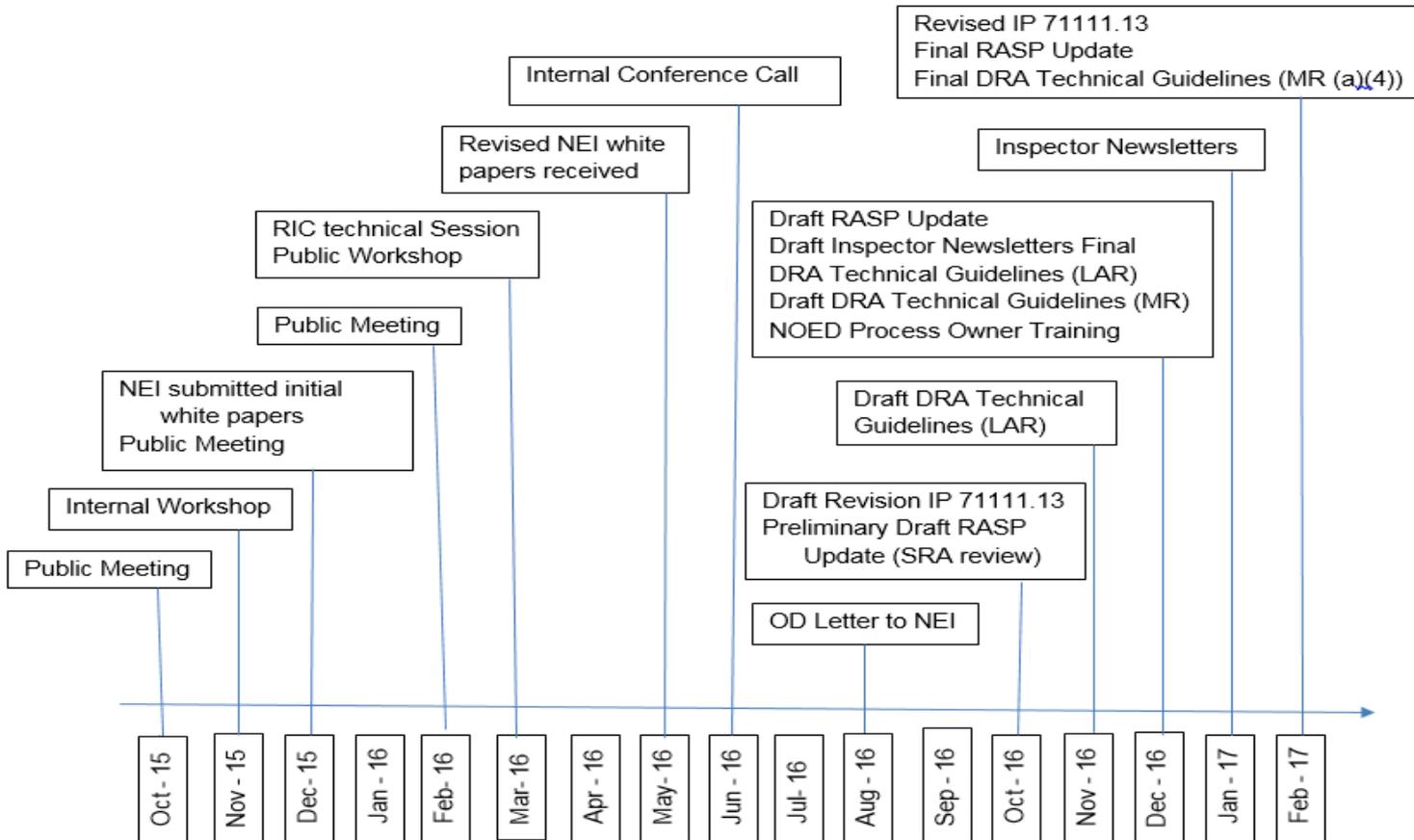
Areas of Potential Credit

- Incident Response (MD 8.3)
- Significance Determination Process (SDP)
- Accident sequence precursor (ASP) Program
- Maintenance Rule 10 CFR 50.65 a(4)
- Notices of Enforcement Discretion (NOEDs)
- Risk-Informed License Amendment Requests
- Mitigating Systems Performance Indicators (MSPI)
- Security
- Regulatory Analysis - Rulemaking
- Issue Resolution
- Generic Issue Resolution

Crediting Mitigating Strategies (MS) in Risk-Informed Decision Making (RIDM)

Priority	Topic	NRC Guidance	Deliverable	Responsible Individual	Target Draft Deliverable	Completion Date	Resource Estimate
High			Direct Reports Briefing/ DEDO One Pager	Matt Humberstone/ Mike Montecalvo		Ongoing	NRR - 80hrs
High	Incident Investigation Program (MD 8.3)	RASP Manual MD 8.3					
High	Significance Determination Process (SDP)	RASP Manual IMC-0609 IMC-0308 RIS 2008-15*					
Medium	Accident Sequence Precursor (ASP) Program	RASP Manual	RASP Update	Mike Montecalvo	December-16	February-17	NRR - 200hrs RES - 40 hrs Region - 80 hrs
High	Maintenance Rule a(4) (10CFR 50.65)	RG 1.160 NUMARC 93-01 IP 71111.13	Inspector Newsletter Update IP 71111.13	Matt Humberstone Matt Humberstone/ Ami Patel	December-16 November-16	January-17 April-17	NRR - 40 hrs NRR - 120 hrs
High	Notices of Enforcement Discretion (NOED)		Inspector Newsletter NOED Process Owner Training NRR/DRA Tech Guidelines		December-16	January-17 December-16	NRR - 40 hrs NRR - 20 hrs
High		IMC-0410		Matt Humberstone	December-16	February-17	NRR - 100hrs
High	Risk-Informed License Amendment Requests (LARs) (Qualitative Credit)	RG 1.200 RG 1.174 RG 1.177 LIC-101 RIS 2008-15	NRR/DRA Tech Guidelines	CJ Fong / Mike Levine	November-16	December-16	NRR - 80hrs
High	Risk-Informed License Amendment Requests (LARs) (Quantitative Credit)	RG 1.200 RG 1.174 RG 1.177 LIC-101 RIS 2008-15	No need to develop application specific guidance	CJ Fong / Mike Levine			
Low	Mitigating Systems Performance Index (MSPI)	RG 1.200 IP 71151	No need to develop application specific guidance	Matt Humberstone			
Medium	Security	RG 5.81	No need to develop application specific guidance	Michael Maley / David Diec			
Low	Regulatory Analysis	NUREG/BR-0058					
Low	Issue Resolution	LIC-504					
Low	Generic Issue Resolution	MD 6.4					

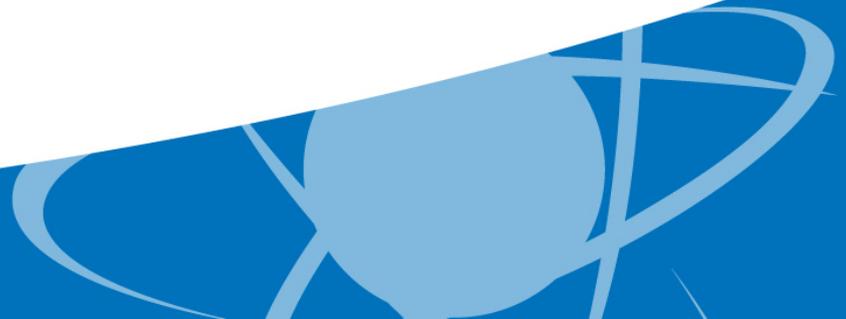
Timeline



Questions?

PRA Technical Adequacy Working Group

**ACRS Risk Subcommittee Meeting
September 7, 2016**



Working Group Members

- Stacey Rosenberg, PRA Licensing Branch Chief, NRR
- Donnie Harrison, Senior Level Advisor for PRA, NRO
- Mary Drouin, Senior Risk and Reliability Analyst, RES
- JS Hyslop, Senior Risk and Reliability Analyst, NRR
- Adrienne Driver, Risk and Reliability Analyst, NRR

Major Objectives

- **Objective 1:** Develop a process suitable for making new methods available for risk-informed regulatory applications
 - Presentation on activities and status - J.S. Hyslop

- **Objective 2:** Improve process for documentation and closure of peer review Facts and Observations (F&Os)
 - Presentation on activities and status – Adrienne Driver

- **Objective 3:** Evaluate any additional gaps in current peer review process
 - Effort needed in this area

Brief History

- Objectives established - June 2014
- Industry submitted whitepaper - June 2015
- NRC staff reply – January 2016
- Industry submitted draft guidance - February 2016
 - (1) F&O closure process,
 - (2) New methods evaluation panel process
- NRC staff issued draft staff position – April 2016
- Pilot programs for new methods evaluation panel process and independent assessment F&O closure process on-going

Objective 3

- Objective 3: Evaluate any additional gaps in current peer review process
- Staff review of industry white paper
 - Agreed that industry peer review guidance needed revision
 - Host utility review documentation of peer review team qualification in advance and request new members as necessary
 - Reviewer resumes provided with sufficient time to ensure adequate qualification
 - NRC and industry should discuss maintenance and upgrade process to determine if guidance changes are needed

ACRS Risk Subcommittee Meeting

PRA Technical Adequacy Working Group Improved Process for Closure of Industry Peer Review Facts and Observations

Presenter: Adrienne Driver, Adrienne.Driver@nrc.gov
Contributor: Steven Dinsmore, Steven.Dinsmore@nrc.gov
Office of Nuclear Reactor Regulation
September 7, 2016

Current Staff Review Process for PRA Technical Adequacy

RG 1.200 provides staff position to include:

1. What constitutes a technically acceptable base PRA
2. How a PRA standard and **PEER REVIEW** can be used to demonstrate a technically acceptable PRA

Current RG 1.200 guidance and ASME/ANS PRA standard is absent of process to close out Facts and Observations (F&Os)

Improved F&O Closure Process History

- NRC agreed with and recommended further development of Industry “Hybrid Approach” in June 2015 White Paper.
- NEI draft guidance, February 9, 2016 introduced an alternative “Independent Assessment” approach.
- Exelon Pilot of Independent Assessment performed in July 2016.
- Two NRR staff members attended as observers.

Draft Regulatory Staff Position for F&O Closure Process

- The draft staff position consists of guidance that establishes criteria for the F&O Closure Process:
 1. F&O Closure Scope - Identifies whether the F&O resolutions are being reviewed to support a specific application or the base PRA (i.e., independent of applications).
 2. Team Qualifications -Determines the credentials and adequacy of the PRA Standard peer reviewers.
 3. Documentation - provides the necessary information to ensure that the F&O peer reviewed resolutions are applicable, defensible, and complete.

Pilot Independent Assessment Identified Strengths

- IA Team had direct access to model of record (MOR) and supporting documentation.
- IA Team had access to Peer Review Report(s) including text of the original F&O.
- Process appears suitable for closure of F&Os addressing:
 - Documentation issues
 - Individual modelling and method errors
 - Incorrect F&O's

Pilot Independent Assessment Identified Lessons Learned

- Identification and disposition of model upgrades
 - focused scope peer review per ASME Standard still needed
- Some F&Os difficult to interpret and closure may not result in meeting CCII w/o checking the SR.
- IA Process potentially prohibited finding and/or documenting new F&Os.
- Clarity is needed between IA Team's exit meeting and issuance of the final report (i.e., can additional F&Os be closed during this time, additional documentation and review of closure material?)

Pilot Independent Assessment Draft Results

Total F&Os	Partially Resolved	Resolved	Open
115	3	87	25

- Discrepancies between licensee closure versus closure review team demonstrates need for an independent closure process.

Path Forward

- Gain access to and review Limerick IA F&O closure team final report Observe a few additional IA pilots
- Hold public workshop on issues (e.g., industry reviewer independence, submittal guidelines, model upgrades) to reach consensus position
- Incorporate lessons learned into staff position
- Endorse a process for closure of F&Os after lessons learned and consensus positions incorporated
- Endorsement to ensure transparency of process (i.e. access to closure reports for staff auditing purposes as needed)

New PRA Method Evaluation Process

Objective 1 of PRA Technical Adequacy Working Group

J.S. Hyslop, NRR
Sr. Reliability and Risk Analyst;
Donnie Harrison, NRO
Sr. Technical Advisor for PRA

ACRS Risk Subcommittee Meeting
Sept. 7, 2016



Summary of Issue

Difficulty in gaining timely acceptance of new PRA methods, based on experiences from:

- Industry/NRC Methods Review Panels
- Topical Report process

Other processes are not suitable for reviews of new, complex methods

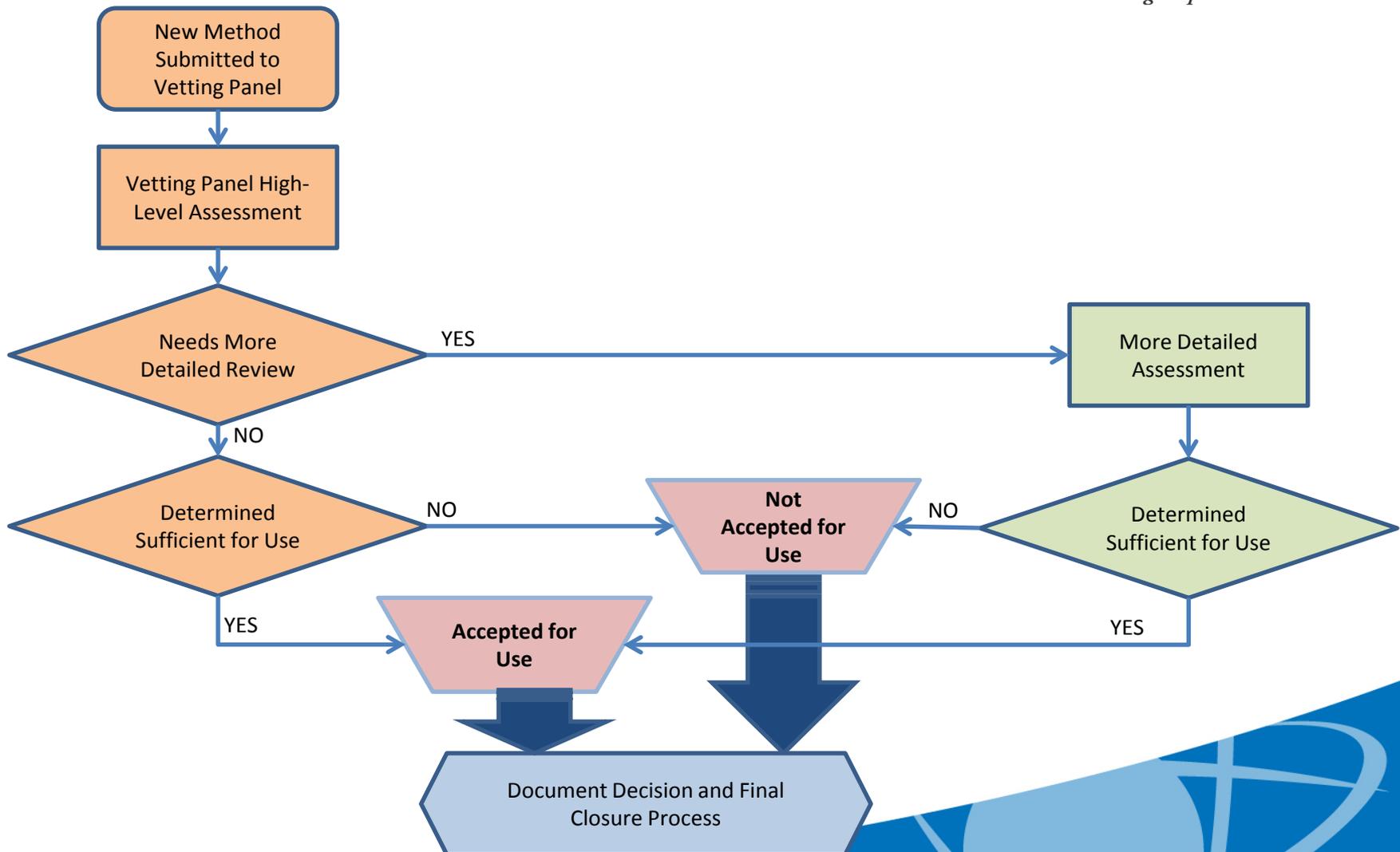
- Frequently Asked Question (FAQ) process
- NFPA 805 License Amendment Requests (LARs)

Goal/Purpose

Develop a process suitable for making new methods available for risk-informed regulatory applications

- Efficient process for getting new PRA methods into mainstream use as quickly as possible
- Ensure that method receives appropriate level of technical scrutiny and has a sufficient technical basis
- Alternative to existing processes

Flow of Industry Process



Staff Draft Position on Proposed Industry Process

Staff draft position made public on April 27, 2016

- Communicates staff's current expectations
 - Team Qualifications
 - Acceptance for Review
 - Level of Review
 - Acceptance of Method
 - Use Prior to Formal NRC Acceptance
 - Submittal for Formal NRC Acceptance
 - Documentation
- Supports Pilot Activities

NEI Comments & Staff Position

NEI comments on draft staff position - June 9, 2016

Staff response - July 28, 2016

- Purpose of vetting panel is to only determine process and level of effort needed for new PRA methods
 - Staff position: Vetting panel can perform the technical review itself or direct the review
- NRC final review and endorsement after the technical review results in no improvements to efficiency
 - Staff position: NRC may accept or reject the results and provide clarification or qualifications as part of the formal endorsement
- NRC position that team members not be from a licensee that has submitted a risk informed LAR containing the method is too constraining
 - Staff position: NRC does not object since the closure process involves NRC review and endorsement

Path Forward

Piloting New PRA Method Evaluation Process

- Three Fire PRA methods

Upcoming workshop proposed in Oct.- Nov. 2016

Lessons learned from pilot will be reflected in revisions to:

- Industry guidance document NEI 16-04
- NRC draft staff position
 - Expected to be incorporated in future revision of RG 1.200

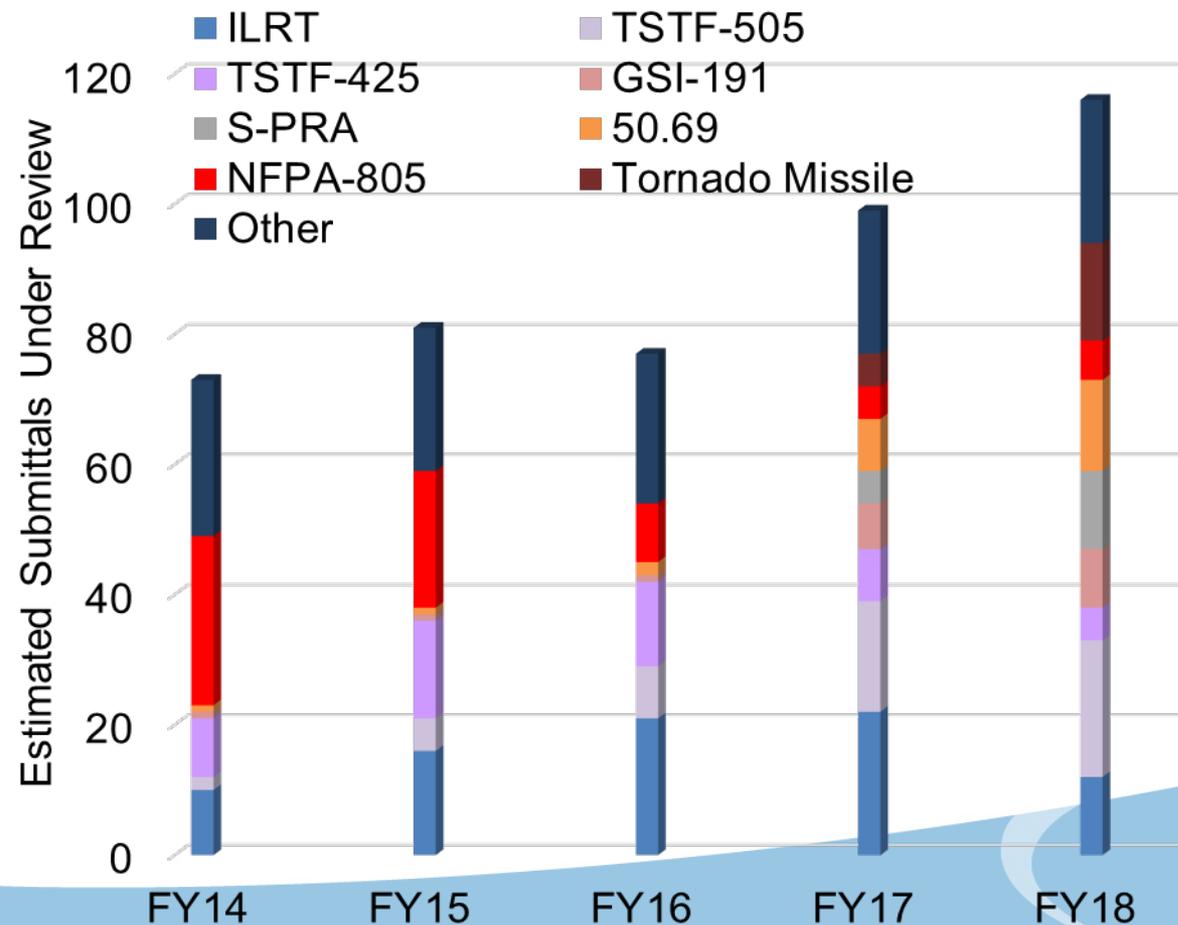
Risk-Informed Licensing Activities

ACRS Risk Subcommittee Meeting
September 7, 2016

Stacey Rosenberg, PRA Licensing Branch Chief
Candace Pfefferkorn, General Engineer



Risk-informed Licensing Work Projected to Increase Even as 805 Winds Down



- Projected ~60% Increase in New Risk-informed Submittals (FY15/16 to FY17/18)
- Submittals of Greatest Increase:
 - Seismic PRA
 - 50.69
 - Risk-informed GSI-191
 - Tornado Missile
 - TSTF-505

PRA Expertise Needed for Projects That Are Not Related to a Specific LAR



Area	Examples
Guidance Development	<ul style="list-style-type: none"> • Seismic PRA Infrastructure (Recommendation 2.1 and 50.155) • Tornado Missile • RG 1.174 • RG 1.229 (50.46c)
Working Groups	<ul style="list-style-type: none"> • Level 3 PRA Project • ASME/ANS Fire PRA Standard
Risk Informed Steering Committee (RISC) Working Groups	<ul style="list-style-type: none"> • PRA Technical Adequacy – F&O Closure Process Options • PRA Method Evaluation Process (Vetting Panel) • Credit for Mitigating Strategies • Uncertainty/Risk Aggregation
Inspection Support	<ul style="list-style-type: none"> • 50.69 Support • Development of Inspection Procedures for TSTF-425/505 • External Flooding SDP Analysis (RASP Handbook) • Fire Protection SDP Revision Support
Knowledge Management	<ul style="list-style-type: none"> • Grow Your Own (ADM-507) Revisions/Mentoring/Participation • Risk Certificate/New PRA Course Development
Other (e.g.)	<ul style="list-style-type: none"> • Risk Management Team Coordination/Participation • Research on Advances in PRA Methods, Models, Practices, and Data (User Need Requests)

Workload Summary

- Workload Projected to Increase with New Risk-informed Licensing Submittals (~60%)
 - Seismic PRA
 - 50.69 Submittals
 - Risk-informed GSI-191
 - Tornado Missile
 - TSTF-505
- Substantial Staff Participation in Risk-informed Infrastructure Support Activities
 - Guidance Development
 - Working Groups
 - Risk Informed Steering Committee (RISC) Working Groups
 - Inspection Support
 - Knowledge Management

Streamlining Reviews

- Increasing workload – 60% increase is probably an underestimate
- Prioritize according to resource effectiveness
- Limit deviations/variances from approved TRs/TSTFs
 - Slow review/require additional resources
- Follow limitations and conditions (L&Cs) of TRs/TSTFs
 - Subset of L&Cs provide specific submittal guidance
- Submit high quality F&O dispositions
 - Complete description of F&O and detailed and accurate discussion of disposition
 - Recent full-scope and focused-scope peer review

Guidance on Treatment of Uncertainty in Risk-Informed Decisionmaking (NUREG-1855)

Advisory Committee on Reactor Safeguards
Sub-committee Risk Reliability and PRA

Mary Drouin, mary.drouin@nrc.gov (301) 415-2091
September 7, 2016

Outline

- Background
- Workshop
- Training
- Status of Work

Background

- Originally published in March 2009
- Revision 1 better structures the guidance to licensees and further clarifies the NRC staff decisionmaking process in addressing uncertainties
- Workshop held November 2015 on Revision 1
 - Well attended with overall positive feedback
- NUREG, Revision 1 is with publications
- Although led by RES, large participation from NRR and NRO

Insights from Workshop (1/2)

- Publish Revision 1 with minor clarifications
- Issues identified for Revision 2
 - Expand risk metrics beyond CDF and LERF
 - Expand guidance on selection of risk-informed activities
 - Re-examine guidance on documentation submittal
 - Include examples
 - Additional guidance on selection of sensitivity studies, particularly with regard to model uncertainty combinations
 - Include lessons learned from aggregation pilots

Insights from Workshop (2/2)

- Issues identified outside of NUREG scope
 - Appendix which evaluates performance deficiencies and mitigating strategies
 - Additional guidance on scenario formulation
 - Inspection Manual Chapter 0609 – replace appendices (A and M) on integration of risk-informed qualitative criteria with process on detailed treatment of uncertainties based on guidance in NUREG
 - Industry pilot of guidance in NUREG-1855
 - NRC support a pilot and would factor lessons learned into Revision 2
- Develop training
 - Brief type of training to educate both staff and management on concepts in NUREG-1855 and associated EPRI reports
 - Detailed training on how to implement guidance involving the use of various diverse examples

Web-Based Course

- Designed to be 20/30 minutes to 1/2 hours dependent on how much optional material is read
- Course divided into 18 “screens”
- For each screen, the reader has the option to decide whether to read additional information
- The course is focused on informing the reader on the key concepts and overall approach in NUREG-1855 (and the associated EPRI reports)
 - does not educate the reader on the specifics of the guidance
- Major challenge was limiting the scope and level of detail of information to be included
 - Focused on the identifying the key messages
- Course development supported by Sandia National Laboratories

Web-Based Course Screens

1. Why is this guidance needed and what is the purpose of NUREG-1855 (and the associated EPRI reports)?
2. What should you learn from this course?
3. What should you know when you start this course?
4. What type of guidance is provided to a decision maker?
5. Uncertainty exists in different forms: what are they?
6. Uncertainty exists in both probabilistic and deterministic analyses, are they treated differently?
7. What is the overall process in NUREG-1855 and the EPRI reports?
8. How are the NUREG-1855 and EPRI reports related?
9. When is the process in NUREG-1855 and the EPRI reports used (Stage A)?
10. Is the process in NUREG-1855 and the EPRI reports applicable for every risk-informed decision?
11. Does the missing PRA scope and level of detail matter (Stage B)?
12. How is the missing PRA scope and level of detail addressed (Stage C)?
13. How are parameter uncertainties treated (Stage D)?
14. How are model uncertainties treated (Stage E)?
15. What strategy should the licensee use in developing their application (Stage F)?
16. What process does the NRC staff use as their risk-informed review (Stage G)?
17. How are different levels of detail, conservatisms in the PRA treated – how is aggregation treated (Stage G)?
18. How are the PRA uncertainties treated in risk-informed decisionmaking (Stage G)?

Example Web-Based Course Screen and “Pop-up” (1/2)

(2) What Should you Learn from this Course?

- The importance of uncertainties in the decisionmaking process.
- Key concepts associated with risk-informed decisionmaking.
- Types of uncertainty and their impact on PRA results.
- The approach used to treat PRA uncertainties in the decisionmaking process

[Click Here for Additional Information](#)

You should also gain an appreciation for the following:

- Decision-making on complex issues is always subject to uncertainty.
- Underlying uncertainty exists whether or not it is acknowledged.
- PRA makes uncertainty visible.
- The purpose of treating uncertainties in PRA is to identify important sources of uncertainty and ensure that those sources are addressed appropriately in the estimation of risk metrics and in the decision. It is important that the decisionmaker clearly understands:
 - whether or not those PRA uncertainties have been adequately addressed in the risk-informed application, and
 - whether the uncertainties have the potential to affect the estimates of risk metrics and therefore the decision.
- PRA complements deterministic decision criteria by providing structure to the issue of uncertainty.
- When appropriately addressed, the uncertainty analysis adds technical support and value to risk-informed decisionmaking.
- The analysis of uncertainty in risk models allows the decisionmaker to make a more robust decision.

Example Web-Based Course Screen and “Pop-up” (2/2)

(17) How Are Different Levels of Detail, Conservatism Treated - How is Aggregation Addressed (Stage G)?

- For all applications, it is necessary to consider the contributions from the applicable hazards and plant operational states; that is, all the contributions are combined (i.e., “aggregated”). [Click Here for Additional Information](#)
- The level of detail, both the size and effect of the parameter and model uncertainties, and the degree of conservatism in the different hazard or POS analyses may differ. [Click Here for Additional Information](#)
- These contribution, when aggregated, their differences can “bias” the results that may influence a risk-informed decision, and therefore need to be acknowledged and taken into account. [Click Here for Additional Information](#)
- The proximity of the results to the application guidelines are for a specific application and will influence the evaluation of the application. [Click Here for Additional Information](#)

When combining the results of PRA models for several hazards (e.g., internal events, internal fires, seismic events) as required by many acceptance guidelines, the level of detail may differ from one hazard to the next with some being more conservative than others. The level of modeling can vary even within a hazard such as an internal event, at-power PRA. For example, the evaluation of room cooling and equipment failure thresholds can be conservatively evaluated leading to a conservative time estimate for providing a means for alternate room cooling. Moreover, at-power PRAs follow the same general process as used in the analysis of other hazards, with regard to screening: low-risk sequences can be modeled to a level of detail sufficient to prove they are not important to the results.

Status of Training and Revision 2

- Web-based training course draft developed
 - Just completed pilots
 - To be issued for use by end of calendar year
- Detailed training course
 - To be patterned after workshop
 - Two days with half day going over guidance and remaining day and half going over examples
 - Commence development this year and goal to hold in late spring of 2017
- Revision 2
 - Commence early next year
 - Completion targeted for 2018 but dependent on issues (and their significance) to be included in revision