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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

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BRIEFING ON STATUS OF RISK-INFORMED,  
PERFORMANCE-BASED REACTOR REGULATION

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WEDNESDAY,  
MAY 3, 2006

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The Commission at 9:00 a.m., the Honorable Nils J.  
Diaz, Chairman, presiding.

COMMISSIONERS PRESENT:

- NILS J. DIAZ, Chairman
- EDWARD McGAFFIGAN, JR., Commissioner
- JEFFREY S. MERRIFIELD, Commissioner
- GREGORY B. JACZKO, Commissioner
- PETER B. LYONS, Commissioner

PANEL 1 PARTICIPANTS:

- JIM LEVINE, Executive Vice President, Arizona

**CAPTION REPORTERS**

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Public Service

DAVID CHRISTIAN, Senior Vice President, Dominion

Generation

TOM JORDAN, Vice President, South Texas Project

NOC

STEVE FLOYD, Vice President, Regulatory Affairs,

NEI

PANEL 2 PARTICIPANTS:

LUIS REYES, EDO

GARY HOLAHAN, Associate Director for Risk

Assessment and Special Projects, NRR

JIM LYONS, Director, Division of Risk

Assessment, NRR

FAROUK ELTAWILA, Director, Division of Risk

Assessment and Special project, RES

RANDY BLOUGH, Director, Division of Reactor

Safety, Region I

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1  
2 CHAIRMAN DIAZ: Thank you, Madam Secretary. And  
3 welcome, everybody, to what I hope will be an interesting session in risk-  
4 informed and performance-based regulation. I could probably take the  
5 rest of the morning and talk just about what the "and" means, but I won't  
6 do that.

7 (Laughter.)

8 It brings memories of many years ago when there was a  
9 comma in between and a difference between a comma and the "and."

10 As you know, you know, I have about seven pages of  
11 written comments in here which I am not going to use. But I want to  
12 thank the industry for asking for this meeting, and I want to thank the staff  
13 for hopefully being prepared to provide us with a good update of why it's  
14 risk-informed regulation, a vital component of the NRC and the industry  
15 operations.

16 I'd like to hear what you think we should be doing to  
17 make it better. I think that we have done well, but, you know, I've said  
18 this several times. It seems like things slow down, and I don't want to  
19 take the responsibility to say that this is the NRC's own doing or the  
20 industry's own doing.

21 I think we all have a little bit to do with that, and the  
22 reason is that sometimes it goes back to communications and

1 implementation, rather than the principles. It seems to me that we agree  
2 on the principles, and then we start disagreeing and spending an  
3 enormous amount of time in what the details are, and that's because  
4 people still don't realize that the technique is powerful, that it's flexible,  
5 that it's safety-focused, that it allows us to do many, many things that we  
6 couldn't do before.

7           The fact -- you know, one of my favorite thoughts of  
8 being -- what will the industry -- what will the NRC do if all of a sudden  
9 magically somebody will take risk-informed, performance-based  
10 regulation out? What would happen? You see how things would slow  
11 down tremendously, and that we would be all of a sudden looking for a  
12 way of doing things.

13           I think the answer lies on the other way. How can we  
14 better utilize, and how can we better implement? How can we develop  
15 additional principles? Because I think it has served the country well. I  
16 think it serves the industry well and is an everyday tool that the NRC  
17 uses.

18           Last night I was going through a list of things, which is  
19 twice as long as what the industry has and twice as long as what the staff  
20 has, just going back to my Memory Lane book, and found out, you know,  
21 things after another.

1                   Before I ask my fellow Commissioners if they want to  
2                   make a comment, I want to recognize Steve Floyd. I'm sorry you guys  
3                   have to break his arm to bring him over here.

4                   (Laughter.)

5                   But, you know, Steve is one of those tough cookies that  
6                   sits on the other side of the table at times. But he's one of these tough  
7                   cookies for which we have great respect for. We've got great respect for  
8                   his knowledge and for his dedication. We sometimes wish it was a little  
9                   easier on us. But having said that, we do appreciate the honesty and the  
10                  knowledge that he brings to the table.

11                  And, Steve, we're going to miss you. But if you go past  
12                  the west coast of Florida, stop by.

13                  MR. FLOYD: I sure will.

14                  (Laughter.)

15                  I might point out, this is just age-related degradation.

16                  (Laughter.)

17                  CHAIRMAN DIAZ: I know the feeling.

18                  With that, fellow Commissioners?

19                  COMMISSIONER McGAFFIGAN: Mr. Chairman, I join  
20                  you in praising Mr. Floyd. We've not always agreed on some matters, but  
21                  I think he serves NEI very well. He is a persuasive advocate, and we'll

1 miss him as he sails around the globe, perhaps docking in Tampa. I don't  
2 know.

3 On the issue of risk-informed regulation, obviously I have  
4 been less than enthusiastic at times, and my lack of -- it isn't that I'm not  
5 for risk-informed regulation. I'm deeply frustrated that more than three  
6 decades after WASH-1400 the infrastructure for risk-informed regulation  
7 is so, I don't know, threadbare.

8 I was for the mitigating systems performance indicator. I  
9 thought that was a good thing. I thought it was a good thing because it  
10 was going to force people to improve their PRAs, and it did. But I think  
11 NEI was honestly embarrassed by the outliers in the industry who kept,  
12 you know, that from being -- from going into effect as rapidly as we  
13 thought it was. We ended up waiting a quarter, and we'll start getting  
14 data, but it could have been longer.

15 We are suffering from the half-measures of previous  
16 Commissions, and we could have required high-quality PRAs. I think the  
17 backfit rule would have allowed us to require high-quality PRAs. Quality  
18 obviously is something that would have evolved over time, but I have --  
19 because of the lack of infrastructure, I have been less than enthusiastic  
20 about some of the initiatives, the 50.69 and the 50.46(a) initiatives, that  
21 have come along.

1                   When the infrastructure is there, I'll be more supportive. I  
2 find it incredible that no Commission in 30 years has been able to  
3 convince itself that a PRA requirement for the existing plants, not for new  
4 plants -- we have that in Part 52 -- the PRA requirement for existing  
5 plants in a rule could be sustained.

6                   If we really believe that risk-informed regulation has all  
7 the benefits we all claim it does, then we could have gotten a lot further if  
8 we had taken that simple step a long time ago rather than the half-steps  
9 and side steps we've taken over the last 30 years.

10                  CHAIRMAN DIAZ:     Thank you, Commissioner  
11 McGaffigan. Commissioner Merrifield.

12                  COMMISSIONER MERRIFIELD: I want to join with the  
13 Chairman and Commissioner McGaffigan in wishing Steve Floyd well in  
14 his future sailing career. We have on many occasions hammered him on  
15 various things, but he has nonetheless taken it in stride with a smile and  
16 has been an engaging advocate on the part of the industry. We certainly  
17 will miss that smile, but we wish you well in those future efforts.

18                  I also note you have disproven the fact that sailing is a  
19 non-contact sport.

20                  (Laughter.)

21                  Hopefully you'll have better luck in your future sailing.

22                  MR. FLOYD: Short trip.

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COMMISSIONER MERRIFIELD: Yeah.

As it relates to risk-informed regulation, I'm not going to go into too great a detail. I recollect when I first came to the Commission seven and a half years ago, it certainly had to be one of my first meetings here where we were going deep into where the Commission wanted to go on risk-informed regulation. And I will always remember Shirley Jackson's repeated use of the words "double-edged sword" when it came to risk-informing, and we've seen some of that.

I think as I look back on it, I mean, I think there is a frustration in various places about the fact that we haven't progressed faster than we have. I think from my own reflection some of that, and we can get into that in the questions, some of that may be reflective of the fact that we have really been dealing with some of the low-hanging fruit early on, and that some of the tougher issues have really -- we have really been grappling with some of the tougher issues more recently and have even tougher ones to deal with going forward.

That having been said, I think the periodic opportunities of the Commission to revisit this issue in a public fore is a good opportunity to help us refocus our efforts and those of the utilities and perhaps get us over some of the hurdles that are keeping us from making more progress than so far we've made.

1                   So in that spirit, I'm looking forward to the dialogue we're  
2 going to have today with our counterparts across the table, with our staff,  
3 among the five on us on this side of the table, to really get a sense of  
4 where are we, where are we going, and is there a way of getting there in  
5 a more common-sense way in terms of meeting our expectations for a  
6 risk-informed, performance-based alternative to 10 CFR Part 50.

7                   So with that, I thank you, Mr. Chairman.

8                   CHAIRMAN DIAZ: Thank you, Commissioner Merrifield.  
9 Commissioner Jaczko.

10                  COMMISSIONER JACZKO: Well, I'll just be very brief  
11 again. I would certainly join my Commissioners in saying farewell to  
12 Steve. I hope your right arm fares better with your sailing than your left,  
13 so -- but I've certainly enjoyed the interactions that we've had and  
14 appreciate your insights on a lot of issues.

15                  As far as risk-informed regulation goes, probably about a  
16 year and a half ago I would have thought it was probably a topic I was  
17 never going to learn anything about. But in the last year and a half I've  
18 learned quite a bit about risk-informed, performance-based regulation,  
19 and I certainly share some of the thoughts of Commissioner McGaffigan.

20                  I do have a lot of concerns about where we are with the  
21 infrastructure and in particular with the PRA modeling, an issue we're  
22 dealing with now, of course, in fire protection as with fire modeling as well.

1 Modeling is an important thing, and modeling can sometimes be  
2 deceiving in its accuracy and effectiveness. And I think it's important as  
3 we look at all these issues to keep that in mind.

4 COMMISSIONER LYONS: I'd certainly echo the  
5 comments of my fellow Commissioners regarding Steve. And Steve and I  
6 had a chance to talk a little bit before this meeting, and wishing him all the  
7 luck in his travel.

8 I'm looking forward to this meeting to perhaps better  
9 understand what I think are some very different statements and  
10 perceptions between the industry's report of progress on risk-informed  
11 regulations and the staff's view. And I'm looking forward to this meeting  
12 to better understand those differences.

13 CHAIRMAN DIAZ: Thank you, Commissioner Lyons.  
14 And with that, Mr. Levine.

15 MR. LEVINE: Thank you, Mr. Chairman,  
16 Commissioners. Good morning. Let me start by introducing myself and  
17 the others here. I'm Jim Levine with Arizona Public Service, and I chair  
18 the working group for risk-informed regulation for the industry. Dave  
19 Christian from Dominion is on my right. Tom Jordan from South Texas  
20 Project, and, of course, Steve Floyd, who by the way was tied to the pier  
21 when he hurt his arm, not out sailing.

1                   We do appreciate the opportunity to brief the  
2 Commission today on what we believe is a very important topic to both  
3 the industry and to the NRC. Risk-informed, performance-based  
4 regulation, if properly implemented, allows both the regulator and the  
5 industry to place the greatest attention and resources on those activities  
6 with the highest safety significance, and it appropriately lessens the  
7 oversight and the resources on those activities that have been  
8 determined to be of lower safety significance.

9                   While we believe that both the NRC and the industry  
10 agree upon the goals of enhancing safety and efficiency, the  
11 implementation and timeliness of achieving these goals does cause us  
12 some concern.

13                   Next slide, please.

14                   Risk-informed, performance-based approaches have  
15 been demonstrated to be effective. The concept that risk-informed,  
16 performance-based approaches, as discussed in the NRC PRA policy  
17 statement and SECY-98-300, have proven to be successful.

18                   There have been a number of successful applications,  
19 most significant of which are listed above as the revised oversight  
20 process, the maintenance rule, mitigating system performance index --  
21 that's being implemented -- but there are many others, such as risk-  
22 informed ISI, technical specification improvements, to name a few.

1                   These applications have proven the effectiveness of risk-  
2 informed, performance-based approaches, and they have also stimulated  
3 the industry to improve the technical adequacy of their PRA models. We  
4 should be confident in proceeding with more ambitious rulemaking.

5                   Plant safety, reliability, and economic performance have  
6 been sustained at high levels by all accounts. Safety-significant events,  
7 plant transients, have continued to trend downward.

8                   Next slide. We don't have the slides here?

9                   However, momentum has slowed significantly.  
10 Development and implementation of the major risk-informed rulemakings  
11 has taken far too long. While probabilistic insights give clarity to what is  
12 truly safety-significant, existing deterministic barriers that some perceive  
13 continue to be difficult hurdles to cross.

14                  The Commission direction associated with SECY-98-300  
15 approved proceeding with two significant rulemakings using risk-informed,  
16 performance-based insight. Eight years later we are still waiting to  
17 implement these regulatory improvements.

18                  Further delays continue to impact enhancements that  
19 would improve safety. In addition, at a time when resources are at a  
20 premium, risk-informed, performance-based regulations would aid in  
21 effectively managing the resource challenge that we have.

1                   Today we'd like to talk to you through -- talk to you  
2 through some of the examples of these difficulties and discuss how we  
3 can achieve timely and effective regulatory improvements.

4                   Next slide, please.

5                   Industry is in full agreement with the NRC's 1995 PRA  
6 policy statement. It has stood the test of time and correctly articulates the  
7 fundamental issues. Risk insights should complement, not supplement,  
8 the current deterministic framework. PRA methods have led to a much  
9 better understanding of what is important, and industry has increased its  
10 focus in these areas.

11                  In the plants, this awareness and better understanding of  
12 the risk can be observed in the day-to-day operations and maintenance.  
13 The maintenance rule certainly is an example of this, giving more  
14 attention to those things that are taken -- put in and out of service, and I  
15 believe MSPI will also bring more attention to those most -- those  
16 systems that are bearing the most safety.

17                  However, in developing risk-informed applications, there  
18 is a tendency for some to dwell on the residual risk for controls relative to  
19 lower risk components. This can lead to an inordinate focus on items of  
20 low safety significance, opposite the intent of the policy statement. This is  
21 not conducive to enhanced safety.

1 Regulatory stability has been an issue for risk-informed  
2 regulation. We have observed continually escalating expectations in this  
3 area. Before we proceed with some examples of the current rulemaking  
4 that we're struggling with, I would like to identify what the industry key  
5 points are.

6 First, as I noted in the previous slide, NRC's PRA policy  
7 statement states that risk insights are intended to complement the  
8 existing deterministic regulatory methods. Based on risk insights, new  
9 regulations such as maintenance rule, station blackout rule, and ATWS  
10 rule have been added and implemented throughout the industry.

11 However, risk insights may also show that existing  
12 deterministic requirements do not add value, and these existing  
13 requirements should be reevaluated. This is a more problematic exercise  
14 for those who are accustomed to the existing regulatory framework.

15 Second, absent strong management oversight, there is a  
16 tendency amongst some to move towards supplemental use of risk  
17 insights on top of the existing deterministic methods or to make very  
18 minimal changes to the existing requirements while at the same time  
19 requiring extensive risk analysis.

20 And, third, the major risk applications involve the need  
21 for internal events and fire PRAs at power conditions. Other models,  
22 such as shutdown and seismic, are of lesser value for our applications

1 and also involve significant technical and developmental challenges  
2 relative to standards. New PRA standards for fire and internal events set  
3 high expectations. Industry infrastructure for PRA will be saturated for  
4 many years meeting the standards for internal events and fire.

5 With that, I would like to turn this over to Dave Christian,  
6 who is going to talk about some of the issues we see with 50.69.

7 MR. CHRISTIAN: Good morning. Next slide, please.

8 This slide more or less speaks for itself, and I think it's a  
9 good illustration of the timeframe in which it has taken to get rulemakings  
10 completed and implemented. Following initial interactions with the NRC  
11 and staff in 1998 categorization guidance where 50.69 was developed by  
12 the industry, there are several pilot plants of which one is Surry Plant  
13 operated by Dominion, tested that guidance and the improvements and  
14 lessons learned were incorporated.

15 Industry believed that the South Texas exemption  
16 addressed many of the 50.69 technical and implementation issues. That  
17 exemption request was approved by the NRC in August of 2001, and  
18 STP has demonstrated that concepts of this rulemaking can be  
19 implemented safely and effectively. Tom Jordan in a few minutes will  
20 summarize their implementation experience.

1                   However, it has been almost five years now since that  
2 approval and we still don't have a final regulatory guide necessary for a  
3 licensee to submit a license amendment request to adopt 50.69.

4                   Next slide, please.

5                   At the heart of 50.69 is the risk-informed process  
6 categorization of SSCs. STP's Surry and Wolf Creek -- and there may be  
7 another current emerging to be interested here -- but STP's Surry and  
8 Wolf Creek have all demonstrated that the categorization process for  
9 50.69 can be successful. The reg. guide has concluded that the industry  
10 guidance is acceptable for categorizing SSCs under 50.69.

11                  There were a number of issues, a number of substantial  
12 issues with the reg. guide indicative of a continuing desire to maintain  
13 some prescriptive degree of regulatory controls over low-risk  
14 components. And I think here is where we've kind of gotten a little bit  
15 away from the policy guidance, if you will, what I would call a belt and  
16 suspenders approach to low-risk or non-risk-significant components.

17                  Throughout the rulemaking process, including the  
18 development of the industry and regulatory guidance, the majority of the  
19 discussion has focused on the treatment of low-risk equipment. We have  
20 recently had successful interaction with the NRC staff in resolving many  
21 of these issues associated with 50.69 as it relates to categorization of

1 active components. We commend staff management for exhibiting the  
2 leadership necessary to achieve closure in those areas.

3 There is a remaining issue with an ASME code case,  
4 which we won't go into the details of here, but it has to do with passive  
5 components, passive pressure-retaining components. The pilot plans  
6 have to resolve these issues through their license amendments. With or  
7 without the code case -- or without the code case, I would say the  
8 benefits of 50.69 are limited.

9 I could speak maybe directly to our experience at Surry,  
10 we've got about four man years into this. And without this code case, I  
11 would say we're probably at the situation of diminishing returns, where the  
12 benefits would not accrue to us.

13 Surry is a pilot plant for this rulemaking. We are also a  
14 pilot plant for Reg. Guide 1.200, which is the vehicle for invoking PRA  
15 standards. We have made substantial PRA improvements which are  
16 benefitting us in a number of areas, including the recent procurement of  
17 the Kewaunee station.

18 Wolf Creek is also a pilot in this rulemaking, and by  
19 submitting a topical report on the 50.69 categorization process there is  
20 almost interest from other plants to implement 50.69.

21 It is the -- has always been the thought of the industry  
22 that this would be a strategic investment that's complementary in nature

1 of determinism and risk-informed adjustments that would be strategic to  
2 the industry, that we could be -- focus on safety, do it efficiently. And if  
3 that proves true through these pilots, we would expect broader industry  
4 implementation.

5 We look forward to working with the staff to ensure that  
6 the pilot process is successful and the license amendments are  
7 processed in a timely and effective manner.

8 Tom Jordan will now summarize STP's experience in  
9 implementing their regulatory exemption that was a pilot for the 50.69  
10 concept. And following that, he'll discuss the 50.46 rulemaking to  
11 redefine the large break LOCA.

12 Tom?

13 MR. JORDAN: Okay. We'll go to the next slide.

14 Good morning, everyone. STP was the pilot for the  
15 50.69 application, and our categorization and treatment allowances mirror  
16 those that are reflected in 50.69 rule. The intent was for the South Texas  
17 Project lessons learned to be factored into the rulemaking process. And  
18 to some respect, that has occurred.

19 I want to talk about our implementation. We have  
20 categorized nearly 78,000 structures, systems, and components at STP.  
21 This is a large number, and it is driven by the users in the plant wanting  
22 additional insights that can be given from categorization of those

1 structures, systems, and components. And I'll talk about the ways that  
2 those insights are used in a minute.

3 The results of the categorization is for safety-related  
4 structures, systems, and components. About 25 percent have been  
5 determined to be safety-significant or RISC-1 structures, systems, and  
6 components, while 75 percent are classified as low safety-significant or  
7 RISC-3.

8 One of the concerns that has come up throughout the  
9 years is whether or not there would be a large amount of movement  
10 between those risk categories based on additional insights or changes in  
11 the plant. But we have determined through our experience and our  
12 reviews by our expert panel and our working group that those  
13 categorization levels have remained very stable at STP. So we have very  
14 little movement and reclassification going on.

15 About one percent of our non-safety-related structures,  
16 systems, and components have been assessed as safety-significant or  
17 risk-significant. And as part of our program, then, we have assessed  
18 those for enhanced treatment. Examples of that are instrument air  
19 compressors, our main feedwater regulating valves, and some fire  
20 dampers.

21 So we have -- and some of our non-safety-significant  
22 (cough) (inaudible) motor control centers that have been upgraded and

1 preventive maintenance program enhancements made as a result of the  
2 upgrade of those non-safety-related components.

3 The insights that we gain from this treatment applies  
4 across the board in a number of areas beyond the original focuses. We  
5 have provided insight which guides enhancements to our operations  
6 procedures as well as operator training, and a focus and a sharpening of  
7 the focus on the true risk significance of certain components and their  
8 interactions in -- during events.

9 So it has been helpful to our operators in focusing the  
10 training. It's used to determine levels of detail in work packages and  
11 specifying our preventive maintenance requirements and sharply  
12 focusing those as well as identifying the areas of risk in our work-week  
13 schedule so that we can plan for heightened supervision and attention to  
14 compliance with our work schedules on the more risk-significant  
15 components.

16 It also guides our engineers in modification planning and  
17 other assessments. So it helps in a number of ways beyond some of the  
18 areas where it was originally intended to help.

19 Implementation so far has been focused in the areas of  
20 in-service testing, local leak rate testing, parts procurement, our work  
21 control, preventive maintenance, and, of course, the maintenance rule  
22 and those areas that were previously covered in our programs.

1                   Some of our implementation has been restrained due to  
2 some broader concerns about regulatory uncertainty, and those are the  
3 areas -- and Dave talked about one of them, and that is the code  
4 applications of the code interpretation, which is 660, and the pilots will be  
5 working through that. But we have restrained some of our going forward  
6 based on some of the uncertainties related to that activity.

7                   Next slide, please.

8                   I'm going to switch now to talk about 10 CFR 50.46 alpha  
9 redefinition rule. It's an important rulemaking, the option 3 rulemaking,  
10 which seeks to establish a new brake size for the design basis loss of  
11 coolant accident. This slide provides another example of the lengthy time  
12 needed to develop important risk-informed rulemakings.

13                   We believe that a simple enabling code -- rule codifying  
14 the allowance to seek a new brake size with appropriate staff approvals  
15 could have and should have been enacted years ago.

16                   Next slide, please.

17                   The industry has provided significant comments and  
18 extensive comments on the proposed rule outlining our concerns that are  
19 reflected on this next slide. The proposed rule would impose plant  
20 configuration restrictions that are diametrically opposed to the risk  
21 principles and are inconsistent with other regulations such as the  
22 maintenance rule requirements.

1                   The rule also proposes a very burdensome process to  
2 assess, quantify, track, and accumulate extremely small risk impacts,  
3 although the industry believes, as the Commission does, that it is  
4 important for us to quantify and track, but the methodologies are what is  
5 questioned here. The scope of this requirement extends the licensing  
6 basis with respect to the change control requirements to the entire plant,  
7 and that's another area that we're really concerned about.

8                   We believe that these issues have resulted from a lack of  
9 stakeholder participation throughout the process and particularly in key  
10 parts of the process related to the infrastructure associated with  
11 implementation of the rule.

12                   The proposed rule, as it's written, is simply not viable,  
13 and significant revisions are needed. The proposed rule does not satisfy  
14 the intent, we believe, in the NRC policy statement, and we await NRC's  
15 resolution of our comments of the proposed rule. And with NRC  
16 management leadership similar to that needed to resolve 50.69, we hope  
17 for a more constructive and timely interaction going forward.

18                   Next slide, please.

19                   There are many safety enhancements possible from this  
20 rule, including the modification of equipment and test strategies to align  
21 with the more frequent events that represent a much greater fraction of  
22 overall risk.

1                   Some of those examples are -- and this is an area where  
2 we have worked in concert with the staff in developing these safety  
3 benefits -- elimination of emergency diesel generator fast starts, more  
4 tolerance in load sequencing following station blackout, enhanced  
5 equipment reliability resulting from less stress-inducing tests.

6                   Moreover, this rule change is important to position the  
7 industry to move forward with additional important risk-related changes in  
8 the future.

9                   We believe that the implementation does not need to be  
10 encumbered with extensive and burdensome change control  
11 requirements that in some cases extend the licensing basis. We're  
12 concerned that there may be some feelings of wherever we have  
13 diminished -- or we have received benefits from implementation of a rule  
14 there's a quid pro quo type feeling that additional infrastructure is required  
15 on top of existing regulation.

16                   Effective communication throughout this rulemaking  
17 process to ensure that the application concerns of the stakeholders are  
18 properly considered and addressed before the rule is finalized is a vital  
19 and necessary part of issuing any rulemaking and the new guidance  
20 associated with that.

21                   Our past lessons learned point to the need for increased  
22 and enhanced communications between the NRC and the industry.

1                   Steve Floyd of NEI will now discuss additional important  
2 risk applications going forward.

3                   MR. FLOYD: Thanks, Tom, and good morning. I'm  
4 going to talk about two topics, first touch on a few future risk applications,  
5 and then talk about the status of PRA standards and our views on those.

6                   First, in the area of fire protection, as you well know, a  
7 number of plants, quite a number actually, have expressed an interest in  
8 proceeding with NFPA-805. We really need to get fire protection right this  
9 time. As we all know at this table, that has been a pretty problematic  
10 regulation since its implementation in the early '80s. It's an opportunity,  
11 we believe, for the industry and the NRC to work very closely together to  
12 achieve and workable and effective standard this time around.

13                   I won't diminish the effort, though. The effort is  
14 necessary to develop standards, produce the fire PRAs, conduct peer  
15 reviews, and implement the other aspects of NFPA-805. It will be a very  
16 enormous undertaking for the industry.

17                   What we've learned from other risk applications and  
18 attempts like this is that risk-informed methods in themselves do not  
19 necessarily provide regulatory stability and can actually make the  
20 problem worse in some cases. And I think it goes to your point, Mr.  
21 Chairman, about getting down to the level of detail is where that will arise.

1                   Part 52 rulemaking, we noticed that the earlier versions  
2 of this rule had a full scope PRA requirement in it. We understand that  
3 may be removed. What we believe is that the Part 52 rulemaking should  
4 be aligned with the PRA expectations for the operating plant.

5                   And, really, our basis for this is the Part 52 plants really  
6 actually maintain a deterministic design basis, and the primary severe  
7 accident features that are designed into the new plants are codified as tier  
8 1 requirements. And we really don't see the need at this point to make it  
9 a requirement to have a full scope almost PRA when you have, in  
10 essence, captured the important risk insights from the studies that have  
11 been done, and actually codified those into the regulation already.

12                   Much can be learned, we believe, from the existing  
13 efforts that have gone underway. That should help out with NFPA-805  
14 and Part 52 and help them to be implemented in a timely and effective  
15 manner. However, if we continue to struggle with the low risk-significant  
16 items on top of all the risk assessments that will be required, we believe  
17 we will have lost ground.

18                   I think one of the things that has been the most  
19 disappointing in working in the risk applications area over the last 10  
20 years is that we seem to have to repeat that lesson on every application.  
21 And maybe it's because of the low-hanging fruit approach where we are  
22 picking a cherry over here and one over here and one over there.

1                   And that each time we go through that process it's a new  
2 group of folks working on that, it's a different area, it's a different  
3 discipline, and everybody kind of has to learn that, gee, you really don't  
4 have to pay attention to the real low risk-significant items.

5                   Hopefully, now we've reached a point with the  
6 applications that have gone on, setting the stage for these broader  
7 applications, that we can perhaps move forward a little bit more efficiently.

8                   Next slide, please.

9                   We believe that the current and envisioned applications  
10 do all need an acceptable at-power internal events PRA model. We have  
11 a standard that is endorsed by Reg. Guide 1.200, and we have five plants  
12 that have piloted that process, and we believe the industry will move  
13 towards meeting this standard.

14                   This should simplify the review of risk-informed license  
15 amendments as well in the future. The PRA standards for fire and  
16 internal events really do set high expectations. Industry infrastructure for  
17 PRA, as Jim pointed out, will be saturated for many years to come,  
18 meeting these standards for internal events and fire.

19                   Now, just because we're focusing on internal events and  
20 fire doesn't mean that we don't apply risk insights from other models that  
21 have been done. Just because we don't quantify the risk in a PRA model  
22 doesn't mean that those insights get thrown out. And, in fact, through the

1 incorporation of the existing regulations today, including Maintenance  
2 Rule A-4, we factor in risk insights from shutdown conditions, from  
3 various changes in mode and changes in plant configuration, even though  
4 there isn't a PRA that directly models that.

5 So I think you can get an awful lot of the benefits of the  
6 PRA work that has gone on without getting down to necessarily having to  
7 have a standard and a PRA model at this stage for every single aspect of  
8 a PRA.

9 The peer review is also resource- and time-intensive.  
10 The industry process for peer review of the internal events model took  
11 over five years to complete. The fire peer reviews are likely to take even  
12 longer, because many of the new fire PRAs are just being developed, and  
13 obviously that has to occur before we can do the peer review.

14 Many new peer reviews will be required at the same time  
15 that industry personnel are expected to be developing and implementing  
16 guidance. So it's going to be enough of a challenge in our view to get the  
17 internal events and the fire PRA, which is the vast majority of the risk,  
18 done correctly, get that right, and get that implemented before we think  
19 about moving ahead to a broader PRA scope for which, quite frankly, the  
20 technology and the standards are not yet there to support that.

21 I will now turn it over to Jim Levine to provide the  
22 conclusions for our briefing. Jim?

1 MR. LEVINE: Thank you. Next slide, please.

2 Well, as stated earlier, industry is fully supportive of the  
3 direction set forth in a 1995 NRC PRA policy statement for the inclusion  
4 of risk-informed, performance-based regulations. We believe this  
5 approach not only offers safety enhancements but also allows us to move  
6 more effectively -- be more effective stewards of our available resources.

7 So today we wish to restate our commitment to risk-  
8 informed, performance-based regulations, as stated in the PRA policy  
9 statement. We also call on the Commission to continue down this  
10 visionary pathway and to reinforce these goals among the NRC staff such  
11 that safety and economic benefits may be realized in a timely fashion.

12 Strong leadership and changed management is needed  
13 by all parties to support implementation. It is important to reinforce the  
14 Commission's policy on using risk insights to focus on matters of high  
15 safety significance as many of these issues that have complicated these  
16 rulemakings have been associated with residual risk.

17 We need to ensure the many lessons learned in  
18 developing both 50.69 and 50.46 rulemakings lead to more constructive  
19 and timely process on going forward as we face the large impact of  
20 NFPA-805 and Part 52.

21 Our goal is for these rulemakings to be finished and  
22 widely implemented in the next several years. Further, other significant

1 risk applications, such as technical specification improvements, need to  
2 be brought to a timely closure. We propose the following actions to  
3 ensure this goal is met.

4 In order to avoid further delays, such as those discussed  
5 in the briefing, our recommendation -- recommended actions are aimed at  
6 enhancing the timeliness of communications between the NRC and the  
7 stakeholders.

8 So very much along the lines of some of Commissioner  
9 Merrifield's opening statements, we would propose to hold periodic semi-  
10 annual meetings of the NEI risk-informed regulatory working group with  
11 senior NRC management to discuss the process of the rulemakings  
12 associated with guidance and implementation of the pilots, or issues for  
13 the pilots. We would develop and publish schedules for final rules and  
14 pilot plant implementation.

15 And, third, hold periodic, at least on an annual basis,  
16 Commission briefings such as this one, to discuss the progress, identify  
17 issues, and to address policy matters.

18 Again, we appreciate the opportunity to talk to you today  
19 about this subject, and we thank you for your attention.

20 CHAIRMAN DIAZ: Thank you, Mr. Levine, Mr. Christian,  
21 Mr. Jordan, and Steve. I was trying to see how to navigate in between  
22 the comments and my own thoughts, whether I was going to make a lot of

1 comments or a lot of questions. I haven't decided yet, so I'll start with the  
2 comments first.

3 First, let me go back to a point that is always in there and  
4 kind of address it that Commissioner McGaffigan brought out -- is the  
5 issue of the industry having a common framework for a PRA. Let's call it  
6 -- I'm going to give you the internal, you know, at-power fire PRA. I think  
7 what is important -- it has been always important to me.

8 You know, I just don't want to go back in history, but in  
9 1997 I went and addressed the NEI group. And I told them the simplest  
10 things that you can do in life is to go ahead and do a Level 1/Level 2  
11 PRA, and that you make the front investment and you will find that you'll  
12 get benefit from it. I think this became a cultural issue.

13 We didn't want to order it. The industry didn't want to do  
14 it. People in the industry were afraid what they were going to find out  
15 when they do the PRA. It's a long history. Here we are nine years later.  
16 I still believe there is a value for the industry to consider what integrated  
17 approach to have in, you know, a common structure for having a PRA  
18 that is, you know, Level 1/Level 2 that actually we can say these satisfy,  
19 you know, the quality standards that we have worked on, because it  
20 provides a platform where regulatory, you know, improvements can be  
21 made and where operating improvements can be made.

1                   And that's a viewpoint. You know, I'm going to agree  
2 with Commissioner McGaffigan that this is needed. I, of course, have  
3 never wanted to order it because I think the backfit rule does provide  
4 some protections.

5                   But I don't want to get into the issue of whether we do  
6 this or we do that. I think the opportunity is here at the present time to  
7 take an integrated look at what needs to be done to be able to go forward.  
8 And I think one of those necessary steps is to have a common, you know,  
9 framework for the industry that we can say the industry across satisfies  
10 this level, and, therefore, we are willing to work with it whenever anything  
11 comes, whether it's licensing or whether it -- you know, we have a  
12 common product.

13                   The staff doesn't have to be looking at many, many,  
14 many different things, which takes time, and which becomes, you know,  
15 one of the reasons for delays. I think that common level of understanding  
16 is fundamental to avoid the delays, because those delays come both  
17 ways, because people are not sure that where the staff is going, you  
18 know, and, therefore, a common structure, okay, in which PRA can be  
19 used, okay, both for your purposes and for us to make regulatory  
20 decisions continues to be what I call the common denominator and is not  
21 the lowest common denominator. It is a common denominator.

1 I think the issues of the delays, you know, worries every  
2 one of us. I believe the Commission is taking a very serious look at the  
3 issue of rulemaking, and I expect that in some period of time we will be  
4 able to take a look at how we actually are going to manage rulemaking in  
5 a better fashion.

6 I do think that sometimes rulemaking, which actually, you  
7 know, normally have to have every I dotted, takes a long period of time,  
8 because sometimes the interactions don't take place when they should  
9 take place. We need to have the processes open, so that stakeholders  
10 can see what is happening.

11 But we should be able to structure our rulemaking in a  
12 risk-informed manner, get those that are really important to safety coming  
13 out first. There has to be a rulemaking structure, and I think that's fine.

14 But we need to be able to have, as we are faced with the  
15 potential for a significant amount of work, to come to the agency. These  
16 other components need to be going, and they need to be accelerated,  
17 because the reality is that now we have the information. Now we know  
18 how to handle the information. Now we can make the decisions.

19 I think the culture needs to change, both at the industry  
20 and at the NRC, if we are really going to use this technique for enhancing  
21 safety. That's what we are concerned.

1                   Now, I know you have the concern that has costs that  
2 apply, you have to do it. But I believe that, you know, first-level analysis  
3 would show that overall there is a benefit to the reliability of your plant, will  
4 eventually be, you know, a benefit for you to be able to buy the right  
5 components, okay, at the right time, you know, from, you know, quality  
6 providers.

7                   I think plants that are getting 20, 30, 40 years old, that's a  
8 valuable thing. And these things cannot be done, you know, one at a  
9 time always. There has to be a plan, and the plan has to be done.

10                  Now, I was young and foolish when I proposed 98-300  
11 instead of doing one thing at a time, do it all, get a group and get - sort it  
12 all out. I was, you know, defeated. I can't remember what the vote was,  
13 four to one or seven to zero.

14                  (Laughter.)

15                  Something like that. But I still think I was right. I still  
16 think that if we would have set off on that path, we would now be better  
17 than where we are. But that's water under the bridge. What is it that we  
18 need to do?

19                  And so here comes my first question. When my time is  
20 up, I'll raise it. If you were to say what will move, you know, the safety  
21 benefits and your benefits, which, you know, you need to consider on this  
22 area, what would you put up, you know, as your first priority? Is it to

1 create a plan that the industry will put together that people in industry  
2 would serve? Is it to move 50.69 implementation and 40, 46 -- will you  
3 select or would you actually say, "I can grab the bull by the horns and  
4 move it forward"?

5 My time is out. Commissioner McGaffigan yesterday  
6 was over at the clock. I'm --

7 (Laughter.)

8 COMMISSIONER McGAFFIGAN: Mr. Chairman, with all  
9 due respect, I think all Commissioners are -- have mastered the art of  
10 starting their last question while there's time remaining, hoping that it  
11 leads to a five-minute discussion.

12 CHAIRMAN DIAZ: This is the first time I do it.

13 (Laughter.)

14 COMMISSIONER MERRIFIELD: Mr. Chairman, I was  
15 going to say you don't really want to --

16 (Laughter.)

17 You said water under the dam, and I think in the spirit of  
18 that we should remind ourselves of --

19 CHAIRMAN DIAZ: I didn't finish --

20 COMMISSIONER MERRIFIELD: -- transgressions on  
21 time.

1 CHAIRMAN DIAZ: I didn't finish the phrase. This is the  
2 first time I do it today.

3 (Laughter.)

4 Yes, sir.

5 MR. LEVINE: Mr. Chairman, let me try to address that. I  
6 think to answer your question, at this point in time, I think we do need a  
7 plan. I think we have a lot of lessons learned. Back from when this all  
8 started in the late '90s to now, we've had some very good successes, and  
9 we've had some things that moved in a timely fashion.

10 And then, we've had some of the more problematic ones  
11 that haven't moved. So I think taking those lessons learned and sitting  
12 down with the stakeholders and saying, "How do we move this forward?"  
13 whether it's 50.69 or 46 or whatever it is in the future, there probably does  
14 need to be some type of a plan that says, "Here are the steps we need to  
15 do if we're going to be successful."

16 MR. FLOYD: I would just like to add to that. I think the  
17 thing that moves the industry most is success. We're pretty good  
18 copycats. If something works well for somebody, and it seems to have a  
19 lot of benefits to it, everybody piles on and figures out how to make it  
20 happen for them. So I would urge a plan to get 50.69 and 50.46(a) out  
21 there, show that they can work, and I think people will follow.

1                   If it's a successful application and a successful  
2 implementation with the pilots, people will make the investment in the  
3 PRAs by following the standards to be able to reap the benefits, and  
4 that's the best thing I think we can do.

5                   MR. CHRISTIAN: I would just elaborate a little bit and  
6 say it's my belief that at some time in the future we will look back on risk-  
7 informed and performance-based regulations, and we will equate its  
8 emergence as something along the lines of relativity as additions to  
9 Newtonian physics. And we had the determinism before, and Newtonian  
10 physics, and then we found out that we needed relativistic adjustments.

11                   Similarly, this complementary relationship between  
12 determinism and PRA is -- gives us the truest picture of plant safety and  
13 risk. And I think the thing that we need to do going forward, the one --  
14 you asked the question, what one thing can we do, is to not get distracted  
15 with the focus on low-risk or non-risk-significant systems, and apply a  
16 belt-and-suspenders approach to those.

17                   We seem to have managed to stray from the policy intent  
18 I think in that complementary relationship between determinism and the  
19 risk insights.

20                   And when we look at NFPA-805, and when we look at  
21 the PRA resources that are going to have to be allocated to multiple hot  
22 shorts, things like when we look at the pool available of PRA resources

1 and the industry, when we look at the NRC's trying to acquire PRA  
2 resources, and I guess -- Commissioner McGaffigan's words -- the  
3 "laggards in the industry" trying to acquire PRA resources, the number of  
4 PRA resources entering the pool of qualified personnel, we just simply  
5 can't afford and we will not make the desired progress if we get bogged  
6 down by straying off the path that is pretty clearly laid out in the policy.

7 The policy intends that we -- that there's a  
8 complementary relationship here between the old deterministic approach  
9 and using risk insights, and we just really can't afford to be distracted.  
10 That's why I think it's so valuable, the suggestion that Jim concluded with,  
11 that we open up the lines of communication a little bit more with periodic  
12 briefings of senior management and periodic perhaps Commission  
13 briefings to make sure that we are kind of keeping this thing on track.

14 As I listen to your comments, early on it seemed like your  
15 perception of our concern was perhaps the delays or the speed of  
16 progress. But in my opinion, it's more the tendency to divert off of the  
17 track of the intent of the policy and get kind of bogged down as a result.

18 CHAIRMAN DIAZ: Thank you very much.

19 I think we're running out of time. Do you want to -- no?

20 COMMISSIONER McGAFFIGAN: I don't have anything  
21 else to add to that.

22 CHAIRMAN DIAZ: Commissioner McGaffigan.

1                   COMMISSIONER McGAFFIGAN: I commend the  
2 Chairman on his masterful use of his time. I'll try to emulate.

3                   (Laughter.)

4                   The issue of risk-informed regulations, I'd say I'm all for  
5 it. I'm oftentimes disappointed by what little has been done in more than  
6 three decades since WASH-1400, and I think the blame can be pointed  
7 all around. I mean, I -- in my opening remarks I pointed to the industry.

8                   One of my -- when Chairman Diaz and I arrived at the  
9 Commission, Chairman Jackson had underway a bunch of direction-  
10 setting issue papers. And I forget the fellow's name, but he was a soon-  
11 to-retire senior research person, probably Farouk's predecessor a couple  
12 times removed, and we were talking about the direction-setting issue  
13 paper and the risk-informed regulation.

14                  And this particular staffer did what I thought -- or what I  
15 value, and I'm sure we all value, committed truth in my presence, and he  
16 talked about the crummy PRAs that were then prevalent in the industry in  
17 his view. And they were good PRAs. And the people across the table,  
18 you know, you guys have made large investments and shouldn't be held  
19 back by the people who have refused to make those investments.

20                  But that's a new Commissioner learning about risk-  
21 informed regulation, probably as my two colleagues at the end of the  
22 table have been this last year. In my first briefing, I hear from a senior

1 research staffer and his view, having gone through the various submittals  
2 that had come in as a result of the Commission's sort of half-hearted  
3 effort in the late '80s to get something out of you all, was that there are a  
4 lot of crummy PRAs out there, not the people on the other side of the  
5 table, you know, or many others, but -- so that's one data point.

6 I think on our side of the table we did nothing for a couple  
7 of decades to actually prepare for risk-informed regulation either, other  
8 than, you know, asking for IPEs and taking a decade to figure out whether  
9 -- what the quality of the product was. The senior risk analyst, which is a  
10 position we have today, didn't exist when the Chairman and I came to the  
11 Commission. We came to the Commission two decades after WASH-  
12 1400.

13 There was a small coterie of people in the research office  
14 who had some PRA knowledge, but that was about it, two decades after  
15 WASH-1400. So there's a lot of blame to put around. And I don't know,  
16 you know, if we can get the infrastructure there, I think there is a lot that  
17 can be done, and I do feel badly about holding up those who are ready.

18 I personally -- one of you mentioned that the right thing to  
19 have done on 50.46 was to say -- have a very short rule without all of the  
20 detail in the 50.46 rule that's out there, that basically would have said  
21 NRC is open for business for anybody who can make a case.

1                   And the people who had the best PRAs would have had  
2 a chance at making a case for something other than the double-ended  
3 guillotine break of a 36-inch pipe. And those who couldn't, wouldn't. And  
4 I think we'll end up somewhere similar maybe years later, you know, but  
5 somebody might have been making a case today if we had done the  
6 relatively simple rule, which would have been pretty non-controversial,  
7 because all we would have said, all it would have been was, "We're open  
8 for business. Take your risk." Instead, we put out something.

9                   The question -- a question I was going to try to get into,  
10 would the changes that you're asking for in 50.46 require renounce under  
11 the logical outgrowth test expounded by the Court, you know, expanded  
12 on by the Court -- the D.C. Circuit Court last year? Do you know, Steve?

13                   MR. FLOYD: No, I don't. No.

14                   COMMISSIONER McGAFFIGAN: It sounds to me like it  
15 probably does, and so just -- everybody should be -- it doesn't? Tony  
16 Pietrangelo in the audience claims that it -- that the NEI comments would  
17 be a logical outgrowth of what we put forward. His law credentials are  
18 about as good as mine, so our --

19                   (Laughter.)

20                   Okay. The second question -- I'm still under my time, so  
21 I'm going to try to get a second question in. How committed is the  
22 industry to PRA going forward? Do you have a problem -- you say you

1 want to focus on internal events and fire. If the Part 52 rule were to result  
2 in a requirement that the plant starting to operate in 2015 or later shall  
3 have at least an up-to-date internal events and fire PRA, would the  
4 industry oppose that for the plants that may operate to 100 years after  
5 WASH-1400 to 2075?

6 MR. CHRISTIAN: I don't want to speak for the industry  
7 on this. Dominion would not oppose it.

8 COMMISSIONER McGAFFIGAN: But would Dominion  
9 want us to require that as part of the licensing process for North Anna 3  
10 and 4?

11 MR. JORDAN: I think I'd like to have some time to --

12 COMMISSIONER McGAFFIGAN: Okay.

13 MR. JORDAN: -- look through that. I would say that,  
14 how committed is the industry to PRA? I would say very committed to  
15 PRA, and we have found, you know, that it has generated profound safety  
16 benefits in our understanding of risks that have gone unnoticed by many  
17 -- by operators for long periods of time. And we're working to mitigate  
18 those risks.

19 But it is a powerful tool. I think it is -- you cannot -- it's  
20 not going back in the box. It's just like relatively has not gone back in the  
21 box as a matter of physics. So it only make sense that that tool be  
22 applied going forward by the industry and by the NRC to --

1 MR. FLOYD: I'd like to maybe add a little bit, too. You  
2 know, I think we have another initiative on the table, really, really  
3 ambitious. I don't know how long this one is going to take, and that is  
4 coming up with a risk-neutral framework, which does place very high  
5 reliance on a high quality PRA, where it will actually change in the design  
6 basis of the plant from a deterministic basis to much more of a risk basis,  
7 you know, risk-informed basis I guess is a better way of saying it.

8 I think if we ever get to that point, then certainly PRA is a  
9 requirement. In fact, in the paper that we submitted to the Commission in  
10 '02, we recommended that the PRA be a formal requirement if you're  
11 going to shift to a risk-informed design basis for the plant.

12 But given -- in our view, I think that the Part 52 plans are  
13 still a deterministic-based design plant, there isn't a need to require a  
14 PRA, but I think that like the current vintage of plants, if they want to take  
15 advantage of some of the tools that are being developed and some of the  
16 rulemaking changes, like 50.46 and 50.69, they will have to have a high  
17 quality PRA in order to employ it, just like the current plans will.

18 And I think that's really -- I think that's really the key.  
19 Right now these initiatives are voluntary. They are not mandatory  
20 requirements, but the price of admission is you're going to have to make  
21 the case that you have a very good PRA that meets the standards if  
22 you're going to be able to apply one of these applications.

1                   CHAIRMAN DIAZ: We continue to consider this issue of  
2 which come first, the chicken or the egg.

3                   COMMISSIONER McGAFFIGAN: If you all -- if  
4 generation 3-plus plants don't need PRAs, if we have to be sort of the  
5 triple hyphenated perfect, you know, grand unified theory system, as I  
6 said in one of my votes, to get there, it's going to be a long time. And if  
7 we -- and under your theory, plants operating in 2075, a hundred years  
8 after WASH-1400, will not have PRAs, unless they want to participate in  
9 the benefits, whatever.

10                  CHAIRMAN DIAZ: I believe the industry really needs to  
11 take a look at that issue, because it's not going to go away.

12                  Commissioner Merrifield.

13                  COMMISSIONER MERRIFIELD: No, I -- I am going to  
14 follow on some of that. I was struck by, as we start here, you know,  
15 when I -- again, going back to when I joined in '98, at that time we had --  
16 when we sort of set down our list of what's important, you said, okay,  
17 inspection oversight activity is the most important thing we do. We were  
18 focused on license renewal. We had a lot of focus on our risk-informed,  
19 performance-based alternative, and we needed to manage costs. Those  
20 really were the things that we were working on, and that's what we heard  
21 generally from the other side of the table from you all.

1                   Today, obviously, inspection oversight is still the most  
2 important thing. License renewal is important. Security in a post-9/11  
3 environment is taking more than a little bit of our time. Power uprates  
4 have become important for a lot of people, and it is taking a lot of our time  
5 and attention. New plant orders, which is no small issue, risk-informed  
6 regulation, and we're still supposed to manage costs. And that's -- we've  
7 just got a lot more on our plates.

8                   I think part of the -- what my two fellow Commissioners  
9 have just spoken of, that sort of big picture discussion, is really part of  
10 what we need -- really need to be talking about. In the notes that you had  
11 for your presentation, Jim, you talked about the need for strong  
12 leadership and changed management. And you did say, in fairness,  
13 needed by all parties for implementation.

14                   And I think as it relates to these efforts, I would say a  
15 couple of things, and then I want to open it up for your comments. I took  
16 very much to heart the comments that Tom Jordan made about, you  
17 know, additional infrastructure is the quid pro quo of going for risk-  
18 informed activities. I don't think that was at all what I intended when I  
19 voted for some of these activities going forth.

20                   We recognized it was a double-edged sword, that there  
21 may instances where we had to do more, but it wasn't -- it wasn't we're

1 going to make -- necessarily even balance every time we go through one  
2 of these activities.

3 But piling on to the comments that both the Chairman  
4 and Commissioner McGaffigan have made, one of the conundrums that  
5 we face is that these are voluntary actions. And there are some folks in  
6 the industry, those across the table and some others, who are really into,  
7 really bought into risk-informed activity. And there's a group of folks in the  
8 industry who, frankly, are just as happy for the most part being where  
9 they are.

10 And so because of that, we torture ourselves, we  
11 struggle back and forth between the quality of the PRAs, the quality of the  
12 PRAs is demonstrably connected to the ability to move forward with some  
13 of these initiatives, and do get -- as the Chairman says -- this chicken and  
14 egg phenomena.

15 And I think -- you know, I don't want to back off from this  
16 being voluntary, because I still think that was the right way to go. But it  
17 creates this conundrum, which I think is part of the reason we're focused  
18 on this today.

19 So I guess, to focus into a question, you know, is there a  
20 -- I mean, it seems to me there's sort of a two-track approach. One is  
21 we've got 50.69 and 50.46. We need to move forward and resolve those,

1 because I think that will help us collectively to increase the enthusiasm for  
2 these efforts, and focuses on the things that are really important.

3 But going forward, beyond there, I think we do need to  
4 think in a much bigger sense, in a collective way with the stakeholder  
5 meeting, to say, "Hey, where do we really want to go with all of this?"  
6 Having made progress -- and I would say the revised reactor oversight  
7 program and the maintenance rule may not get as far as the WASH-  
8 1400, as Commissioner McGaffigan would like. I think those are a couple  
9 of areas where we have made some significant progress in really  
10 changing the way we do business.

11 So how do we do that? How do we get beyond just  
12 50.69 and 50.46 and get to that bigger picture on discussion and get not  
13 just the most enthusiastic supporters of PRA to buy into this, but how do  
14 we get NEI and its membership as a whole to buy into this program down  
15 the road?

16 MR. LEVINE: Well, Commissioner, I think, you know,  
17 we're always going to be in a position, no matter whether it's this subject  
18 or some other subject, that a certain element of the group is going to take  
19 a lead and others are going to follow. This one is no different. We can  
20 name plenty of other initiatives that have gone the same way.

21 But I think this is an example where the industry over the  
22 years has seen the benefit of risk-informed regulation, and although

1 somewhat begrudgingly by some have come along. And if you look at the  
2 evolution of this process, particularly the PRA, from where it has come  
3 back when people referred to it as the crummy PRAs, which in some  
4 cases may have been the case, to where it is today after peer review and  
5 after going through upgrades through standards and stuff, it has come a  
6 long way. And it is much better, and it is serving the industry from a stand  
7 of making us look at things that enhance safety on a day-to-day basis.

8           How we get from here to the next platform, I'm not sure  
9 any of us are willing to sit here and say we've got the magic answer. I  
10 think opening up the dialogue of why are we stuck where we are, and  
11 how do we get from this point to the next point, how do we get  
12 compromise on some of these issues, particularly on the issue of, you  
13 know, what is the intent of dealing with low risk-significant items versus  
14 high risk, I think will help us move to what you're asking.

15           But I don't know that the industry has an answer to that  
16 right now, other than open up the dialogue and see what we can get out  
17 of it.

18           COMMISSIONER MERRIFIELD: Well, I think, you  
19 know, we all face a similar problem in life. And the similar problem in life  
20 is sort of what I equate to dealing with my kids at Christmas. And that is  
21 that I -- you know, when I was a young parent, I was trying to find out

1 what to buy for my kids for Christmas, and so I gave them the catalog  
2 from Toys R Us and I said, "Circle everything you really want."

3 (Laughter.)

4 And I get the catalog back with very few items that had  
5 not been circled by the three of my children. And we all -- I'm not any  
6 different, I'm not saying it's just you all, I'm not necessarily any different  
7 from that. And making choices about prioritization is something we've just  
8 got to discipline ourselves to do.

9 And part of the point I was trying to make early on is  
10 we've got just a lot more on our plate right now that is being demanded of  
11 us by a litany of our stakeholders, NEI being just one of those. And we've  
12 got to -- and we're getting to that time of year where we've got to start  
13 making some budget choices. We've got to make choices about that.

14 I think that risk-informed regulation is important, and I  
15 think we do need to move forward. I think we have been delayed for too  
16 long on some of these initiatives. But I do think as we move forward, with  
17 all of the new things we've added to our plate in the last seven and a half  
18 years, we've got to figure out, where does this fit in that? And what is the  
19 real vision going forward for how we ought to have a system for this?

20 And I don't think it can just be, you know, that smaller  
21 group of folks within NEI who are the most committed to this, you know,  
22 being the only voice. I think collectively NEI has got to come to this

1 agency with a collective view of, really, what do you want down the road?  
2 And where does that fit with everything else you'd like to see us do?

3 MR. LEVINE: And, again, I think, you know, narrowing  
4 that down to some degree today, the industry would probably say 50.69,  
5 46, and some of the tech spec issues probably are the litmus test for us  
6 for going forward. So if we're trying to narrow the scope down, those are  
7 the things that I think the industry would put forward and say, "If we get  
8 through these, we'll probably solve a number of the issues for whatever  
9 the future activities are."

10 MR. FLOYD: There's the optimist and the pessimist out  
11 there right now. I think Jim is representing the optimist view that if we can  
12 get through this there's a group of folks that are willing to commit the  
13 resources to move ahead, try to see if it can work, and there's a whole  
14 bunch of people in the background waiting and seeing to see if it's  
15 successful. And that's why we believe that if it's successful people will  
16 follow and pile on.

17 A good example of this, look at risk-informed in-service  
18 inspection. Yes, we could have kept -- we could have stayed with the old  
19 deterministic way of doing in-service inspection activities. It provided an  
20 adequate level of protection of public health and safety. But there was a  
21 much better way of doing it in PRA space -- work through that standard.  
22 It took several years to get through it.

1 First few pilots went through, turned out it was a  
2 workable way, there were some good benefits of doing it all across the  
3 board, and just about the entire industry has piled on and adopted that.  
4 And I think that's what we have to demonstrate with 50.69 and 46(a).  
5 And then, I think if that is successful, I think you will see the industry pile  
6 on and be willing to proceed ahead with development of more fully  
7 integrated PRA models.

8 CHAIRMAN DIAZ: Thank you. Commissioner Jaczko.

9 COMMISSIONER JACZKO: I'll try and ask some  
10 questions, but I'm not sure I'll get there.

11 (Laughter.)

12 CHAIRMAN DIAZ: Welcome to the club.

13 COMMISSIONER JACZKO: I think there's a couple of  
14 things that it seems as I've listened to the discussion that have kind of  
15 been -- become clear to me. One of the things, I think as I mentioned in  
16 the beginning, is really the issue of modeling and infrastructure. And I  
17 think that is an important issue, and I think what Mr. Floyd said is a fair  
18 statement, that if we're still using largely a deterministic-based regulatory  
19 scheme, you know, then clearly requiring full scope PRAs may be  
20 something that is asking too much.

21 But, and by the same token, I think as was alluded to, it  
22 becomes a chicken and a egg. If you never get there, then you never can

1 demonstrate, you know, the ability to go to a more purely risk-informed --  
2 and I'm always reminded about modeling. When I was a graduate  
3 student, we used to -- I did theoretical work as a graduate student and,  
4 you know, would do things. And these days it's amazing all the things  
5 you use, calculations, algebra, algebraic manipulations that can be done  
6 on computers.

7                   And I always remember that my advisor used to, you  
8 know -- I also kind of managed the computers for our theory group, and,  
9 you know, I always used to think that those days when the computers  
10 crashed, and they invariably did, and I'd have to go and explain that to my  
11 advisor. Whenever those days happened, he actually would say to me --  
12 you know, be on a joyous exclamation, "Well, finally we can get some  
13 work done now."

14                   And, you know, and I carry that with me today, that I --  
15 you know, as I said earlier, I think, you know, we have to be careful that  
16 we don't put too much emphasis and reliance on models that are being -  
17 these systems these powerplants are extremely complicated systems,  
18 and modeling them accurately and effectively is extremely difficult and  
19 challenging.

20                   And I think as I look at the policy statement, the '95 policy  
21 statement, I think that that's really clear in one of the cornerstones of that  
22 policy statement, which is that PRA methods should complement the

1 NRC's deterministic approach. And one of the things that it seems as I've  
2 listened to the discussion here is perhaps in many ways there is not a  
3 clear path forward on what that means or there's not a clear  
4 understanding about what exactly that means.

5 You know, I'll follow up to the analogy that Mr. Christian  
6 gave about Newtonian versus relativistic mechanics. I think that's a good  
7 analogy. I perhaps would interpret it a little bit differently than you.

8 You know, simply to say, I think it's a good analogy  
9 perhaps for how PRAs should be used and how these methods should be  
10 used. I mean, we -- while we know relativistic mechanics provide  
11 perhaps a better description of mechanics, it doesn't provide the  
12 description that we use on a daily basis.

13 We work in a Newtonian mechanics world. That is how  
14 when I drive my car I don't have to worry about deterministic effects. I  
15 don't have to worry if somebody else is driving at a different speed we're  
16 going to get to work at different times, and, you know, we'll have all kinds  
17 of concerns like that. We don't do that.

18 But relativistic mechanics plays an important role, and it  
19 provides insights in areas when we're in slightly different regimes. And I  
20 think PRA can do some similar things there. It provides insight -- when  
21 we're trying to look at how perhaps -- you know, certainly with the  
22 maintenance, that's an area where it provides good insight.

1                   It provides good information about what the overall effect  
2                   may be about a change in one particular location, because that's not  
3                   always clear to see from the -- kind of the Newtonian mechanics  
4                   description if you will, the purely deterministic, it may not be evident.

5                   So I think to try and get to a question, I think, you know,  
6                   what I would just ask perhaps is just your thoughts on what you think that  
7                   PRA statement means by complementing the deterministic approach,  
8                   and, you know, how we can better kind of flesh out what that means. I'd  
9                   ask anyone who wants to answer.

10                  MR. LEVINE: Do you want to give the Newtonian  
11                  answer?

12                  (Laughter.)

13                  MR. CHRISTIAN: I wish I had an answer. I mean, I've  
14                  been in this business 30 years, and I've seen -- if I go back far enough, I  
15                  can think to the time when we had tech specs that required us to place  
16                  the plant in an unsafe condition when the LCO was not met.

17                  You know, and I'm not sure this is the best example, but  
18                  here we had this what I'll call a deterministic spec, that said if your boron  
19                  injection tank goes out of spec on boron concentration you place the plant  
20                  in hot shutdown in six hours. Very deterministic approach. It turns out  
21                  the mass in the steam generators is much greater at hot shutdown.

1 Therefore, if you had an accident at hot shutdown, the power excursion  
2 on the reactor would be more severe, you know.

3 And then, it's something that -- there was that early day  
4 deterministic, it looked good to the grandfathers, and I -- believe me, I  
5 don't want to throw the baby out with the bath water. The shoulders on  
6 which we all stand, the grandfathers of this industry, did a great job I think  
7 with the initial cut at things. But I think studying these things with risk  
8 insights and PRA has shined a light on some areas where we can make  
9 improvements in safety and at the same time be efficient about it.

10 So that may be an example where the spec was just  
11 plain dumb, you know, early on. But today, in terms of the -- let's say  
12 50.69, you'll find that, you know, we are procuring a Parker Hannifan O-  
13 ring which comes off the same production line at Six Sigma quality.

14 And, you know, we pay a factor of 100 or 1,000 times  
15 more for that O-ring just because it's qualified or named safety-related.  
16 But it -- in terms of its physical characteristics, there's no difference  
17 whatsoever from a non-safety or commercial grade O-ring, and that could  
18 bring significant benefit to the industry.

19 So I don't want to throw the baby out with the bath water  
20 on determinism. I think there was a lot of good with determinism, but I  
21 think it's important that we be able to apply risk insights where it makes

1 sense and it yields a safety result. And also, it yields an efficiency result.  
2 That's my view of it.

3 MR. FLOYD: We have often taken the view that risk  
4 insights are just one part of what goes into deciding what's important at  
5 the plant. The deterministic role plays certainly a key role, your operating  
6 experience plays a key role, your engineering judgment plays a key role,  
7 and risk insights are just one more tool that goes into the box.

8 And that's what I think what you mean by -- what the  
9 statement meant by complementary. It's another factor that ought to be  
10 considered when you're deciding, what should I really pay attention to?  
11 And not just say, "No, no, this is what the deterministic requirement says,  
12 and that's it exclusively."

13 COMMISSIONER JACZKO: And do you think -- and just  
14 very briefly, because I know I'm far over my time -- do you think the  
15 current 50.46 specifically on that point meets that standard of  
16 complementing?

17 MR. FLOYD: I don't think so as written right now. No, I  
18 do not think it does.

19 MR. JORDAN: I think it adds regulatory burden to the --  
20 in the requirement in the rule that every change to the plant and  
21 procedures have this thought process and test applied to it, expands on

1 the deterministic requirement. And I think it goes beyond being  
2 complementary.

3 COMMISSIONER JACZKO: Thank you.

4 CHAIRMAN DIAZ: Thank you. Commissioner Lyons.

5 COMMISSIONER LYONS: I arrived at the Commission  
6 approaching a year and a half ago, very, very strongly supportive of risk-  
7 informing our processes. And nothing has changed in that time, except  
8 that I have gained a far greater appreciation for the complexity of the  
9 overall process. And this meeting is helping me to build my knowledge in  
10 that area.

11 I mentioned at the start that I was hoping to address in  
12 questions the different perceptions between industry and our staff, and I'll  
13 ask a similar question from staff who is sitting at the table.

14 But certainly as I go through the staff viewgraphs, they  
15 discuss a substantial number of -- I would use the word successes that  
16 risk-informing has enabled over a number of years, yet from -- there  
17 certainly were exceptions in your presentations, but overall I heard a very  
18 pessimistic assessment I thought from you folks of the progress that we  
19 have made in risk-informing.

20 I'm curious, by way of a question, if any of you can help  
21 me understand the difference in views between what you've presented,

1 which, frankly, it seems to be somewhat similar to what some of my fellow  
2 Commissioners have said, too, and staff.

3 So if anyone would want to address that as a first  
4 question, I would appreciate it.

5 MR. FLOYD: I'll take a shot at it. I think it -- I agree with  
6 the staff presentation that there is a fair amount of progress that has been  
7 made, but we've been working at this for an awful long time, and there  
8 has been a tremendous amount of resources that have gone into this.

9 Maybe just to highlight one example, take combustible  
10 gas control. That was identified by the agency in 1986 as one of four  
11 significant items under a program called Eliminating Requirements  
12 Marginal to Safety. That was '86.

13 It took an exemption request on the part of a licensee in  
14 1995 under a test case -- and I can remember a senior Commission  
15 meeting that we were at when we were proposing what was called Task  
16 Zero at the time, where we had three elements and when we put that one  
17 on the table the senior staff at the meeting said, "Oh, we wish you'd have  
18 a more robust or a tougher example to go through, because that one is  
19 too easy and it won't test the process. We ought to be able to approve  
20 that in three or four months." And it took five years to get that one put  
21 through.

1                   So there's a tremendous amount of resources and a  
2 tremendous amount of effort that goes through even to get what  
3 apparently is a number of relatively easy items that the vast majority of  
4 people when they initially look at them say, "That's a no-brainer." You  
5 know, obviously that requirement is not adding very much in the way of  
6 safety value, and we can sharpen it using risk technology.

7                   I think that's really the frustration, and there's a lot of  
8 those items on that list that I think fall into that category. And there are  
9 some other good ones, too; don't get me wrong. But I think that's -- that's  
10 really I think maybe the difference in perspective, that we think it takes far  
11 too many resources, and, therefore, far too long to make even small  
12 incremental gains.

13                   COMMISSIONER McGAFFIGAN: I might just point out  
14 to Pete that the -- we did do it, and I was supportive of that at the time.  
15 But I would point out our foreign colleagues, particularly in France, have  
16 moved in the opposite direction at the same time. So, you know, it is  
17 complicated.

18                   CHAIRMAN DIAZ: Anyone else want to address that?

19                   MR. LEVINE: I'll just add to what Steve said. I think if  
20 there's pessimism being sensed it's not the theory or the application. It's  
21 the amount of effort and the reward, if you will, at the end whether that's a  
22 more safety-significant or some other benefits that -- that we gain out of it

1 is we all sit back on a daily basis and ask, where are we getting the  
2 biggest bang for our buck for our resources today? And when things take  
3 years and years and years, and you don't see an end coming, then you  
4 start to lose interest in those things, and that's part of the problem we  
5 have with a good part of the industry not jumping on board if you will is  
6 because they don't see the payback quick enough for the effort that's  
7 being put into it.

8 So, again, I don't think it's the application. I think it's,  
9 what are the results?

10 COMMISSIONER LYONS: To some extent, Jim, your  
11 comments start to get to a question that I have wanted to ask, similar to  
12 what Commissioner Jaczko asked, I think, to try to better understand  
13 some of the industry concerns on 50.46.

14 At least at I read the letter of concerns, I would  
15 paraphrase it by saying perhaps that your view is that some of the  
16 demands in the current incarnation of the rule apply risk criteria that are  
17 really already required and are redundant with other regulations.

18 To the extent that is true, then I am puzzled why it is a  
19 burden in the sense that if other regulations are going to require the same  
20 considerations, then why the frustration with the rule spelling out the risk  
21 criteria, which, in turn, are similar back to, say, 50.59.

1 I may not have asked that very well, but in general I am  
2 trying to better understand this particular and I think very key concern  
3 industry has with the current writing of 50.46.

4 MR. LEVINE: Well, since Tom is embroiled in this, let  
5 me let him take a shot at that because he's the one that's in the trenches  
6 with it.

7 MR. JORDAN: Yes. The real heart of that matter is that  
8 the test isn't the same as those other applications that are already in  
9 existence.

10 10 CFR 50.59 is one of those evaluation tools that's  
11 already in place. And it is, in fact, the deterministic test of your design  
12 changes. And to mandate that risk test for every structure system  
13 component procedure change in your plant goes beyond what is in  
14 existence. But what is in existence is already a sufficient test of changes  
15 you make to the plant. So that is the point I am trying to make.

16 Steve, did you want to add anything to that?

17 MR. FLOYD: It's really an expansion of scope to which  
18 the requirements would apply.

19 COMMISSIONER LYONS: I'm out of time.

20 CHAIRMAN DIAZ: Thank you, Commissioner Lyons. I  
21 think we might get one more round because we don't get you here so  
22 often. And then the staff will be more disciplined in their approach.

1                   And let me just make a comment that thinking of all the  
2 years back on this question, you know, the industry and the NRC -- and,  
3 of course, I see the NRC more -- we have a hard time to let go of a  
4 deterministic process that had been used because it's just a fact of life.  
5 And then it comes in this give and take.

6                   Yes, we want to become risk-informed, but if I could  
7 keep this much in here, I'll feel better. And I think I've said, you know,  
8 many times that if we look at the relative value of the PRAs to make  
9 determinations, there has to be a time in which we can say, "We need to  
10 let this go." And I think we have not gotten there.

11                   It is important to say, "This is slow risk-significant. This is  
12 where it's going to play. And we're going to let go. We're going to let it  
13 go."

14                   We have not developed the structure or the  
15 decision-making process to be effective and say, "We can cut it right  
16 here." And then, you know, we're going to use it. And because we have  
17 all of these elements of oversight and we have all of the things that make  
18 part of what I think is a great regulatory body, they come together. And  
19 you really haven't lost much. But people have a hard time doing that.

20                   I've seen people in industry with the same problem.  
21 They don't want to go uncomfortable. Oversight is going to be exercised.

1 They don't know how they're going to come at it. I don't know how they're  
2 going to come at it from the other way.

3 This is why I say that eventually we need to look at this  
4 whole issue in a master plan, a holistic fashion, address each one of  
5 those things. And maybe next year, you know, you can come and we'll  
6 be there. And I will come and sit back there in that chair with my suntan  
7 and my head over and look like a wise man.

8 It's really, really neat to get there sometimes. Okay. The  
9 reality is we are keeping all of these things like if there were normal  
10 issues and we're not going to move fast enough. We're not going to  
11 make the right decision. We're not going to be able to use you when we  
12 need it because, like Commissioner McGaffigan says, it keeps going on.

13 If we have made a decision to be a risk-informed  
14 regulatory agency and the industry has made a decision to inform its  
15 operations and its maintenance and its design changes by using  
16 risk-informed regulation, the argument should be over.

17 There are some things that in relative things are  
18 high-risk, medium-risk, and low-risk. And we should be able to make that  
19 decision - you have proven that it can be made. And I think the industry  
20 should be willing to accept that. And the NRC should be able to regulate  
21 according to those things.

22 Having said that, Commissioner McGaffigan?

1                   COMMISSIONER McGAFFIGAN: Okay. I am going to  
2 try to run through a couple of questions. BWRs. Notice everybody on the  
3 other side of the table manages PWRs. And I know the PWR folks at  
4 least aren't very interested in 50.46 because of the determinations that  
5 are made by staff with regard to what the new break size would be. Are  
6 they interested in 50.69, BWRs?

7                   MR. LEVINE: Yes, they are.

8                   COMMISSIONER McGAFFIGAN: Okay. But they aren't  
9 interested in 50.46 just currently?

10                  MR. LEVINE: That's correct, for the reason you stated.

11                  COMMISSIONER McGAFFIGAN: Okay. Steve, on the  
12 50.59, the issue of if you say 50.59's changed process is more  
13 deterministic, but we put those famous words "more than minimal." I  
14 opened it up to see how many times the words "more than minimal" are in  
15 there.

16                  CHAIRMAN DIAZ: Commissioner McGaffigan  
17 remembers all that wording.

18                  COMMISSIONER McGAFFIGAN: As opposed to the  
19 zero standard the staff once had, "more than minimal" I thought was tied  
20 in some reg guide somewhere to criteria similar to risk-informed criteria,  
21 right?

22                  MR. JORDAN: Sliding scale.

1                   COMMISSIONER McGAFFIGAN: Sliding scale. So why  
2 is it different? Why is what the new rule requires different from 50.59 in  
3 the way of thinking about changes in your plant?

4                   MR. JORDAN: It requires a specific review and  
5 justification under the criteria of the rule for every change.

6                   COMMISSIONER McGAFFIGAN: But don't you do that  
7 -- not so much NRC, but don't you think about everything under 50.59  
8 today that will make --

9                   MR. FLOYD: That's a screening process that you go  
10 through to determine whether or not it could affect the design basis  
11 requirements for the plant. And the answer is no, you don't go further.

12                  MR. JORDAN: There are limitations in 50.59. There are  
13 none that we can see in the 50.46a rule.

14                  COMMISSIONER McGAFFIGAN: And I've just gone  
15 blank on what my third question was going to be. So I'm going to cede  
16 back all of six seconds.

17                  CHAIRMAN DIAZ: All right.

18                  COMMISSIONER MERRIFIELD: We talked a little bit  
19 about the difficulty. You talked a little bit about the difficulty in getting fire  
20 PRAs put together because of all of the demand. Where are you all on  
21 down the road developing PRAs for external events and low-power  
22 modes of operation?

1 MR. LEVINE: Well, yes. Correct me if I'm wrong. My  
2 perception is that the industry again has focused on the fire and internal  
3 events at power. Some have pursued the areas that you're talking about,  
4 but I think most people are trying to get what they have as good as they  
5 can get it first. And then depending on what applications are down the  
6 road, they may pursue a seismic or some of the other ones.

7 MR. FLOYD: Yes. As difficult as it is to even to do a  
8 level I in a fire PRA, it's even more difficult to do the external event  
9 standards and the mode change standards, although there is work  
10 ongoing in that area. The code committees are actively engaged in  
11 preparing draft standards for those other areas. And, in fact, some of  
12 them have been sent out for comments.

13 And as you might imagine, given the breadth and scope  
14 of those, the comments are all over the map and very difficult to resolve.  
15 So, quite frankly, I think it is going to be some time before we see a  
16 standard in those other areas.

17 MR. JORDAN: And, once again, there is a spectrum of  
18 level of use of those. For instance, our internal events already includes  
19 fire and a number of the -- and we've gone through several evolutions of  
20 flooding analysis in our PRAs, but there's a spectrum that follows that  
21 where there are a few plants that are that far along and others that are in  
22 various stages.

1                   COMMISSIONER MERRIFIELD: Well, Mr. Chairman, I  
2 sort of go back to what I said before. I think moving forward, we are  
3 going to have to -- I think the Commission's going to have to focus on  
4 what we're going to do with what we have in front of us, but I do think  
5 there is a value in thinking of the bigger picture in terms of where we are  
6 going to go and where the industry is going to go in terms of risk-informed  
7 regulations and how we're going to use PRAs.

8                   CHAIRMAN DIAZ: Thank you.

9                   COMMISSIONER JACZKO: I just wanted to ask a little  
10 bit about fire PRAs. Here I think is an area where, although I ask the  
11 question about the PRA policy statement, we may not be complementing  
12 our deterministic-based regulations here, but deterministic-based  
13 regulations have so many challenges from a regulatory standpoint that  
14 50.48 provides a good alternative to try and look at that. But, of course, it  
15 depends crucially on the fire PRAs.

16                   So maybe you could just comment briefly on where from  
17 the industry's perspective you area with fire PRAs and what work you still  
18 think needs to be done. At the latest, we've got 39 and some plants that  
19 are looking at going to NFDA on --

20                   MR. FLOYD: There's a standard that's been developed  
21 and that is out there. It's not finalized, though, at this point.

22                   MR. LEVINE: No. That's correct.

1 MR. FLOYD: But it's in the balloting process. It would  
2 be our hope that it wouldn't be too long before you could have a final  
3 standard for PRA.

4 A lot of work has been done on that one, as we said in  
5 our remarks. That's why we believe the focus ought to really be on the  
6 level I and the fire PRA because they are the closest and the furthest  
7 along well in fact the level I is complete. But the fire PRA is the next one  
8 that's in the pipe and getting very close to be finalized.

9 I think we will have a workable tool in the not too distant  
10 future.

11 MR. LEVINE: But Tony or whoever can correct me.  
12 That's intended to be piloted.

13 MR. FLOYD: Yes.

14 MR. LEVINE: And then by the time we get through that  
15 pilot, we're probably looking at the end of '07 time frame to do that. So  
16 people are committing to going forward and with the NFP, but I'm not  
17 totally sure what they're committing to yet because that standard has  
18 been run through the mill there.

19 MR. JORDAN: And there are a number of plants us  
20 included that are going to wait patiently for the pilots to be completed and  
21 to work through the guidance that comes out as associate as a result of  
22 the lessons learned from the pilots and make sure that that achieves

1 some stability there. And then we'll make a decision to go forward with  
2 805. That's the way that is going to proceed.

3 MR. FLOYD: I think there's some real optimism out  
4 there, hopefully not against hope but there are so many problems with  
5 some of the issues that plants are trying to deal with deterministically on  
6 fire protection that I think some people have signed up with NFP 805  
7 because they feel like they really don't have much choice and they're  
8 hoping that that one will solve their problem for them.

9 COMMISSIONER JACZKO: Thank you.

10 CHAIRMAN DIAZ: Commissioner Lyons?

11 COMMISSIONER LYONS: One of the main arguments  
12 for a risk-informed approach is to enable you folks to provide greater  
13 resources on the most risk-significant items.

14 I at least hear criticism and I am sure you hear criticism  
15 that, instead, what's happened is that resources have been taken off the  
16 least risk-significant items, but resources have not been increased on the  
17 most risk-significant items.

18 And I'm just curious. Given this criticism. Perhaps you  
19 will tell me it is already written, but has there been an attempt to counter  
20 this in a formal or written way in a document that would be available to  
21 us?

1 Tom in his comments came close to -- well, not came  
2 close. You did describe several counters to this. But has there ever been  
3 such a study done?

4 MR. FLOYD: We actually did do a study in conjunction  
5 with EPRI, EPRI and NEI, a few years back and tried to quantify what  
6 were the risk-benefits achieved through the use of risk technology. I  
7 believe the study showed roughly a factor of three reduction across the  
8 board for plants over about a ten-year period in terms of their contribution  
9 to core damage frequency.

10 The other thing that was done was I know that there  
11 were some charts and graphs that were prepared that kind of identified in  
12 a timeline fashion what were some of the major expenditures that were  
13 made in improving system performance based upon risk insights.

14 There really has been quite a bit done. We can pull  
15 those papers out again and get them to you.

16 COMMISSIONER LYONS: I would appreciate it. In my  
17 20 seconds, I want to make one other comment. In the NEI's long letter  
18 that they sent us on item number 8, I had authored a fair bit of that  
19 question. And one of the questions I asked was whether any of the  
20 changes made possible by 50.46 could enhance plant security.

1 I was just going to hopefully suggest that perhaps you try  
2 to supplement your answer on this question because, really, the answer  
3 that came back just said it was a dumb question.

4 (Laughter.)

5 COMMISSIONER LYONS: The answer reads, "There is  
6 a common misperception associated with this rule, as reflected in this  
7 particular question." And it never really answers. I mean, maybe it's a  
8 dumb question, but I would really like to know the answer.

9 (Laughter.)

10 MR. FLOYD: We'll see if we can do better.

11 COMMISSIONER LYONS: I think you can make some  
12 very strong statement. I could even make some strong statements. But I  
13 think that would be useful to us as we work through the process on 50.46.

14 CHAIRMAN DIAZ: Very well. I want to thank David,  
15 Jim, and Tom, now Steve for coming today and having this wide open  
16 exchange. It appears to me that we could have used the entire morning.  
17 And maybe next year we will have two panels and I will be able to spend  
18 a day sitting back there.

19 I just can't help to point out the importance of, again,  
20 communications and how things are. You look at the industry slide. The  
21 industry talks about risk-informed, commerce performance-based  
22 regulation. The staff, which is now more disciplined, talks about

1 risk-informed and performance-based regulation, the probability of  
2 separating.

3 Let me just make a comment back to Commissioner  
4 Lyons. In the issue of security, there was very little that we could do that  
5 was really risk-informed. However, the Commission decided to make  
6 them performance-based, many of those security requirements. And in  
7 that case, we separated, you know, this very powerful phrase to make it a  
8 useful tool for that particular need.

9 We keep seeing that as time progresses, there would be  
10 a timeline in which they would merge, but there still is a separation. I  
11 think waiting every time now, the benefit of risk information or risk in size  
12 and performance base continues to be an art. And hopefully as time  
13 goes on, it will become more the common denominator than those  
14 differences.

15 With that note, I want to thank you for coming over. I'm  
16 sure you might find the next engagement good. And we shall look  
17 forward to keep working with you to make risk-informed regulation a tool  
18 that includes safety for the American people. Thank you very much.

19 COMMISSIONER MERRIFIELD: Just to make one  
20 clarification for my own part, we always struggled on the issue of  
21 risk-informed as it relates to security. And while one might say in a

1 calculable way security is not directly risk-informed, I would certainly say  
2 that the DBT that the Commission comes up with is informed by risk.

3 CHAIRMAN DIAZ: I did not say that we do not use  
4 risk-informed. There was a series of issues on the security arena that  
5 were made performance-based because we did not have risk information.  
6 Every time that we can put risk-informed in anything we do, we'll do it  
7 automatically. There are some cases in which we cannot. And there  
8 were cases in the security where that happens.

9 And, with that, we are adjourned. No. Five minutes.

10 (Whereupon, the foregoing matter went off the record  
11 briefly.)

12 CHAIRMAN DIAZ: I think we can go right ahead, Mr.  
13 Reyes.

14 MR. REYES: Okay. Chairman, Commissioners, good  
15 morning. The staff is ready to brief the Commission in the status of  
16 risk-informed and performance-based regulation. I almost said my name  
17 is Paul Harvey, and I'm going to tell you the rest of the story.

18 (Laughter.)

19 MR. REYES: Without any further delay, let me just turn it  
20 over to the staff, which specifically are going to touch on 50.69, 50.46,  
21 and risk-informed tech specs. Gary?

1 MR. HOLAHAN: Thank you. I would like to thank the  
2 Commission for the opportunity to speak today on these issues. I think,  
3 from what we have already heard today on the staff's side and the  
4 Commission and the industry, it is possible to be on the right track, to  
5 make substantial progress, and still to be frustrated that additional  
6 progress hasn't been made at a faster pace.

7 We recognize these issues. As part of NRR's  
8 reorganization last October, we did elevate the PRA Branch to the level of  
9 a division to give it more management attention. I think, in part, that has  
10 helped us to focus on the attention recently to allow us to get to the root of  
11 some of the issues.

12 For example, we have recently published reg guide  
13 1.201, which was a matter in some difficulty. That has been published. It  
14 is on our Web site. We think that it is useable and will facilitate the 50.69  
15 pilot activities that we expect to go ahead.

16 In that reorganization, we also put the PRA Division in  
17 close proximity to the rulemaking division because you recognize that  
18 there is a synergistic effect between these groups. Some of the  
19 important rules we are doing are risk-informed activities.

20 So the 50.69 rule is in place. 50.46 is where our focus of  
21 attention is. We had - the rule is out for comment. We had a public

1 meeting. We have collected many comments. And we are digesting  
2 those.

3 A summary of some of those comments you heard this  
4 morning from the industry. We recognize those comments. We are  
5 working on them. We are developing some positions. We expect to have  
6 at least one more public meeting on the rule and perhaps selected  
7 meetings on individual issues, in addition to that one meeting, where  
8 there are substantial issues that we need to address.

9 Probably the issue of the use of risk information in the  
10 change process has been highlighted. I think we talked about it just this  
11 week as to how the staff would like to approach that issue. That's  
12 probably a matter on which either a planned meeting or an additional  
13 meeting will use that to address the topic.

14 I am going to let Jim Lyons, who is the Division Director  
15 of our new Risk Assessment Division, speak to the issues. Also here are  
16 Randy Blough we invited from Region I for the perspective from the  
17 regions on the use of the reactor oversight process. And Farouk Eltawila  
18 will speak to the supporting technical activities in the Office of Research.

19 So, without using any more of our time, Jim?

20 MR. LYONS: Thank you, Gary.

21 This morning what I really want to do is give you a  
22 picture of how we are using risk-informed and performance-based

1 initiatives throughout all the activities that we're involved in and how we  
2 are trying to make steady progress in implementing the Commission's  
3 policy statement and the Commission's direction and that we want to  
4 keep looking for opportunities, as Gary said, to look for ways to  
5 accelerate our performance in that area.

6 If I could go to the agenda slide? I've used the  
7 Commission policy statement and the direction that we have been getting  
8 over the years as a basis for putting together this briefing.

9 I want to talk about our progress in the areas of  
10 rulemaking, licensing actions, pilot programs, and the reactor oversight  
11 process. And then Farouk will talk about the technical basis support that  
12 the Office of Research has been providing us.

13 I'm going to focus on some of the key directions that the  
14 Commission has provided over the years. Obviously the PRA policy  
15 statement established the overall policy. In response to that, one of the  
16 key elements we took forward was the implementation of reg guide 1.174,  
17 which provided a practical approach for using PRA and making decisions  
18 on plant-specific changes to the licensing basis.

19 Then in 1998, the Commission asked the staff to  
20 propose options for risk-informing 10 CFR, part 50. And that led to SECY  
21 98-300. In the same time frame, the Commission also directed the staff

1 to make changes to the regulatory oversight process. And that led to  
2 SECY 99-007.

3 More recently the staff proposed and the Commission  
4 approved implementation of a phased approach to increase the quality  
5 and usefulness of PRAs in our future actions.

6 To be sure, there have been other directions that the  
7 Commission has given us throughout this time frame on risk-informed and  
8 performance-based regulation.

9 And, as you noted, Mr. Chairman, there are many more  
10 activities than I am going to cover today that we have undertaken. And  
11 we try to keep track of those as part of our risk-informed regulation  
12 implementation plan, the latest of which we provide to you every six  
13 months is in SECY 06-0089 that was just issued a couple of weeks ago.

14 In SECY 98-300, the staff provided three options for  
15 moving forward in the risk-informing the regulations. The Commission  
16 approved all three options and gave us some clarifying direction.

17 Option 1 was to continue with the rulemaking efforts that  
18 were already underway at the time. And we have completed all five of  
19 these regulations. The first three are rules, have been implemented by all  
20 of the licensees. The last two are rules that were voluntary in nature and  
21 are being implemented through plant-specific licensing amendments for

1 risk-informed in-service inspection and the applications of the alternate  
2 source term.

3           Option 2 was to develop a risk-informed definition for  
4 safety-related and important to safety and to use those definitions to  
5 make changes to the scopes of systems, structures, and components that  
6 were covered by the special treatment sections of part 50. The  
7 Commission also directed the staff to change the scope of the  
8 maintenance rule at that time. And we completed that in 1999.

9           With respect to the special treatment, the systems,  
10 structures, and components that we talked before, we used the South  
11 Texas pilot application as a proof of concept. And we used that to also  
12 address issues that we needed to address to develop the final rule on  
13 50.69.

14           We issued the regulatory guide for trial use, 1.201, in  
15 January. We got some comments from that. And we revised the guide to  
16 clarify the staff's position.

17           Looking back on that regulatory guide that we issued, I  
18 think that we really weren't that far away from the industry on our  
19 positions, but the words in the reg guide didn't convey that message very  
20 well. As Gary said, that reg guide is now on the Web site and available  
21 for use.

1                   In option 3, the Commission has directed the staff to  
2 determine the best way to proceed with risk-informing the remaining  
3 sessions of part 50. And that led us to identifying specific sections of the  
4 regulation that could be risk-informed.

5                   Two rulemakings falling into this category have  
6 completed. And we have discussed a little bit before. 50.54 revises the  
7 requirements for combustible gas control. And 50.48c incorporates the  
8 risk-informed, and performance-based provisions of the National Fire  
9 Protection Association's standard NFP-805. We now have, actually, 40  
10 plants who have committed to convert to NFP-805. And we are expecting  
11 more.

12                   The staff has several other rulemakings in progress, as  
13 we discussed: obviously 50.46a, which redefines the large break  
14 loss-of-coolant accident. That is one that we have tried to keep moving  
15 forward on.

16                   We did have a workshop on the proposed rule before the  
17 public comment period closed. And, as Gary said, we are planning at  
18 least one and maybe more meetings to address the resolution of the  
19 comments that we have received. And we plan on providing the final  
20 50.46a rule to the Commission in October of this year.

21                   Staff is also finalizing its rulemaking plan for 50.61, which  
22 will revise the fracture toughness requirements for protection against

1       pressurized thermal shock. The staff plans on having a proposed 50.61  
2       to the Commission in the first quarter of 2007.

3                       Last year the Commission also directed the staff in three  
4       separate SRMs of note to move forward on a new risk-informed,  
5       performance-based revision to part 50. In March, the staff received the  
6       Commission's approval to issue an advanced notice of proposed  
7       rulemaking to begin the dialogue with external stakeholders on  
8       approaches for making the technical requirements for power reactors,  
9       risk-informed, and performance-based for a spectrum of future reactor  
10      technologies.

11                      And this NPR does ask a question of where do we go  
12      from here in the whole aspect of looking at risk-informed regulations. The  
13      notice has been sent to the Federal Register. And we expect that notice  
14      to be issued this week or next.

15                      Now let me turn to how we have been using our risk  
16      information in other areas outside of the rulemaking. As I said before, reg  
17      guide 1.174 provides an approach for using PRAs in making decisions on  
18      plant-specific changes to the plant's licensing basis.

19                      Licensees have requested and we have approved  
20      risk-informed license amendments for extensions on allowed outage  
21      times and service inspection intervals and integrated leak rate test  
22      intervals.

1                   The double-edged sword of that, in some cases we have  
2 requested risk information from a licensee on amendments that were not  
3 risk-informed. This was done when the staff believed that there was a  
4 concern about adequate protection that could be addressed through a  
5 risk-informed review.

6                   We have also been working with stakeholders on eight  
7 risk-informed tech spec initiatives. Of these, we have completed the  
8 supporting guidance on half of them.

9                   The industry has implemented these to varying degrees.  
10 For example, over 95 percent of the plants have implemented the revised  
11 actions required when a surveillance test has been missed. Other  
12 initiatives only cover specific classes of plants and are not widely  
13 adopted.

14                   For the other half of the initiatives, we are still working  
15 with industry to complete the guidance. Three of the four we have on a  
16 path to resolution. On a fourth, we're waiting for the industry to provide us  
17 their proposed guidance.

18                   In the staff SRM on SECY 98-300, the Commission  
19 encourages the staff and the industry to use pilot programs to reach  
20 agreement on the implementation of risk-informed activities. We have  
21 noted the South Texas pilot in the development of 50.69. And we have

1 also completed during the last year five pilot applications of the reg guide  
2 1.200 on PRA quality.

3 We are also planning two pilot applications, as I think  
4 Steve Floyd mentioned, on reg guide 1.201 on the special treatment now  
5 that that reg guide is out.

6 As I said before, we have 40 plants who have committed  
7 to convert to 50.48c and using NFP-805. The first two of those plants will  
8 be pilots. We are conducting pilot observation visits to stay abreast of the  
9 licensee's progress in developing their submittals.

10 In addition, we are holding periodic workshops at various  
11 locations to discuss NFP-805 implementation issues with the non-pilot  
12 licensees so that they can keep abreast of where we are going.

13 We are in the final process of issuing the reg guide 1.205  
14 that will also support the actions. And we expect to have that out next  
15 month. Not shown on this slide is that the staff also plans to use pilot  
16 applications as we implement 50.46a when that rule is finalized.

17 The last area that I will talk about is the reactor oversight  
18 process, which was developed, in part, to focus our inspection efforts  
19 where we can on risk-insignificant activities and systems.

20 The ROP provides for a significance determination  
21 process to evaluate the findings that the inspectors make out in the field.  
22 The inspection findings are integrated with performance indicator data to

1 determine a licensee's performance and to help us allocate our resources  
2 to those plants who have performance deficiencies.

3 We have developed improved tools for the inspectors  
4 and headquarters staff to use in the significance determination process,  
5 such as the plant-specific SPAR models and the phase 2 STP notebooks.

6 These notebooks that have just been provided to the  
7 staff include pre-solved worksheets for about 50 systems, components,  
8 and operator actions for each plant that are plant-specific. And the  
9 worksheets are expected to cover the majority of anticipated inspection  
10 findings. So it should help us be more timely in our STP work.

11 As you know, the industry just implemented the  
12 mitigating system performance index on April 1st. As we noted, it  
13 replaced the safety system (Inaudible.) ability performance indicator.

14 This was done after much work between industry; the  
15 NRC staff, especially the Office of Research and after we resolved the  
16 concerns that we had regarding PRA quality.

17 With that, let me turn it over to Farouk to talk about how  
18 Research has been supporting this.

19 MR. ELTAWILA: Next viewgraph, please. I am going to  
20 briefly discuss some of the activities in the Office of Research under the  
21 Commission direction, the EPRA quality, expectation, and requirement.

1                   Towards that end, we have been working with the  
2 Standard Committee at the American Society of Mechanical Engineers  
3 and American Nuclear Society, EPRI, and NEI.

4                   And, as a result of all of this interaction, there are at least  
5 four standards right now at different stages of completion. I am going to  
6 mention every one of them. And there are additional guidance  
7 documents that are provided by the staff.

8                   So the first PRA quality standard is related to the level I  
9 PRA and large early release frequency. That standard has been issued  
10 in a couple of years ago and after the pilot application and the public  
11 comments, this standard has been revised and been reissued again in  
12 December of last year.

13                   The second standard is related to the PRA quality  
14 standard on external event. And that standard was issued by AMS in  
15 2003 in draft form. We received a lot of comments on it. These  
16 comments have been resolved right now.

17                   Only 4 out of 20 members of the Standard Committee  
18 opposed publication of the standard. So, as a result of that, the AMS put  
19 a subgroup together, about four-member group, to look at why these four  
20 members are opposing to the publication of that standard. And they are  
21 going to review the evidence of that. And we're going to continue working

1 with them to try to resolve this issue. So that's with regard to the external  
2 event.

3 The other standard is the low-power shutdown. And,  
4 again, the writing group completed its work on this standard, but there is  
5 some opposition for releasing that standard. And I expect the ANS will  
6 have a smaller group again to look at why some members are opposing  
7 to the publication of that standard.

8 The fourth standard, PRA quality standard, is related to  
9 the fire standard. And we received it on April 20th of this year. It was  
10 disseminated in the office, NRC. And we are going to be collecting all of  
11 the input from the other offices and provide our comment to AMS by June  
12 19th of this year. There is no major problem with that standard. We  
13 expect its publication in final form by the end of the calendar year.

14 In addition to these four standards, NRC has published  
15 additional documents. I'm going to mention a couple of them to save  
16 some time. One, we have developed a data analysis notebook, that has  
17 already been issued. We issued for public comments a draft NUREG  
18 report on human reliability and on license good practice.

19 In October or September of this year, we are going to  
20 issue for public comment a report on treatment of uncertainties. So,  
21 again, all of these reports are being published. And I'm going to now on  
22 the next viewgraph talk about Regulatory Guide 1.200.

1                   We issued that Regulatory Guide in February of 2004 for  
2 prior use. It described an acceptable approach for determining the quality  
3 of the PRA and ensure it is sufficient to provide confidence in the results.

4                   It is intended to reflect and endorse guidance. And right  
5 now Appendix E of that Regulatory Guide endorsed the staff position on  
6 ASME level I PRA and the LERF PRA standard. And Appendix B  
7 provides staff position on NEI peer review and self-assessment process.

8                   We were hoping to reissue this Regulatory Guide 1.200  
9 in October of this year, but we have not received comment from a major  
10 stakeholder. So we are waiting to receive these comments before we can  
11 issue the Regulatory Guide as final Regulatory Guide.

12                   Next slide. Talk about fire PRA. Our research activity  
13 related to fire resulted in the publication of two new reg reports. The first  
14 is state-of-the-art fire PRA methods and the second is on verification and  
15 validation of the fire models.

16                   We cooperated with EPRI on the development of both of  
17 these new reg reports. And we cooperated with National Institute of  
18 Standards and Technology on the verification and validation NUREG  
19 report.

20                   The fire PRA method is the state of the art. It is  
21 risk-informed. And it has removed a lot of the concern that was  
22 expressed during the IPEEE evaluation of external events.

1                   In 2005, we held a workshop in Charlotte, North  
2 Carolina. And there was a lot of interest in that workshop. So we are  
3 holding another public workshop on May 24th and 26th here in the  
4 Rockville area, in the auditorium. And we have been expecting to get  
5 more people than we have room for. If that happens, we might either  
6 have another workshop in a regional office or something like that, but  
7 there had been a lot of interest in industry in that workshop.

8                   The second NUREG report related to verification and  
9 validation. And it contains our assessment validation of fire, five major  
10 fire models that are currently used in the nuclear industry. It also includes  
11 an extensive analysis of uncertainty.

12                   The NUREG report was peer-reviewed. And the result of  
13 the peer review was very encouraging. It indicated that the fire model can  
14 be used with confidence. So we are very comfortable with the process  
15 that we have gone through peer-reviewing the model for the fire PRA.

16                   The staff is currently revising the NUREG report based  
17 on public comments that ended in March 2006. And we are planning to  
18 go to the ACRS Subcommittee in September of this year and the full  
19 Committee in October. And after that, we are planning to issue this  
20 NUREG in final form by the first quarter of 2007.

21                   Next slide. Talk about another activity in the Office of  
22 Research which is related to the standardized plant analysis risk model.

1 That model has been used extensively for the SPAR analysis. Currently  
2 we have 72 SPAR models covering all operating power plants. They are  
3 routinely used in phase III significant determination process and the  
4 accident consequence precursor analysis.

5 Our plan right now is to expand the scope of the SPAR  
6 model to include external events that would put model for fire PRAs so it  
7 would help all implementation of the NFP-805. There are currently eight  
8 SPAR models with external event models built in them. And we are  
9 sending them out throughout the agency for trial uses right now.

10 I am not going to spend much time on the next slide. It's  
11 related to PRA training. Again, we are working with the industry. We are  
12 working with the ASME, EPRI, NEI, and honors group to develop a  
13 training course for PRA that will be offered to industry people. And we will  
14 make it available here to NRC staff.

15 And that concludes my presentation.

16 MR. HOLAHAN: Last slide. I hope that what we have  
17 shown the Commission today is that risk-informed activities have had an  
18 effect on every aspect of reactor regulation.

19 And I think we know it's not just in this country. The  
20 agency's leadership in this area can be seen around the world and affects  
21 the improved safety in plants around the world.

1                   We have made what we have characterized as steady  
2 progress in implementing the Commission's policies and directions. A lot  
3 of activities have been accomplished with strong support from Research.  
4 And certainly in the regional offices, it's seen in reactor regulation every  
5 day.

6                   We do recognize and we share some of the frustration  
7 over the timeliness of progress on these activities. And we are committed  
8 to accelerate and increase our efforts when we see the opportunities to  
9 do so.

10                   Thank you.

11                   MR. REYES: Mr. Chairman, Commissioners, that ends  
12 our prepared remarks. And now we're open for questions.

13                   CHAIRMAN DIAZ: Thank you, Mr. Reyes, Gary, Jim.  
14 We are glad to have you here so we can start on our incisive part of the  
15 questioning.

16                   If you look at the issue of have we slowed our  
17 risk-informed, there are several indications that you have just given. One,  
18 the OIG report pointed out that although the staff now felt confident that  
19 risk-informed activities were effective and were actually doing what they  
20 should do, they also felt that it was slow. I think Chairman Inhofe was a  
21 little bit strong in his comments to me regarding whether risk-informed  
22 regulation.

1                   So, you know, it is in here. And I wonder if all of these  
2 things don't have some common rules. Looking at it and standing back  
3 and hearing all of the processes that we go by, which includes in the end  
4 codes standards and peer reviews, these are all very time-consuming  
5 issues.

6                   I wonder when was the last time that we took a holistic  
7 look at one entire process, one issue from beginning to end and, instead  
8 of accepting what the schedules are and just saying this is going to take  
9 this much time, whether we are capable of discerning, you know, that  
10 efficiencies in time and schedules and decision-making could be made.

11                  Is it possible -- and this is something that Commissioner  
12 McGaffigan has for many years been saying. Can we improve the  
13 communications with stakeholders at certain times? Can we look at this  
14 process in time and find accelerating factors? How can we accelerate  
15 some of the things?

16                  Because I still believe that, whether it is a rulemaking or  
17 whether it is an activity like the ROP, we are at a stage of knowledge and  
18 at a stage of effective communications, that we can look at the process  
19 and say we can accelerate it here. And if this cannot be accelerated,  
20 what is the alternative? Okay?

1                   We don't have to have always the blessing of every  
2 committee in the world to move forward. Okay? It's nice, but it doesn't  
3 have to be.

4                   So are we at a point in which we can take a fresh look  
5 and take the old boilerplate away and say, "This is how we should be  
6 making this process"?

7                   MR. HOLAHAN: I think we have a few examples. Part  
8 52 was an obvious example where the Commission is interested in  
9 getting that rulemaking in place as early as possible to support future  
10 reactor licensing.

11                   We have gone back. We, in fact, asked the Commission  
12 for some opportunities to accelerate elements of the process. We  
13 discussed it at the last Commission meeting on the NRR program.

14                   I think one of the keys has to do with communication.  
15 And there is a bit of a mindset that I think the staff needs to adopt. And  
16 that is increased communication is an important element to coming to  
17 resolution of issues.

18                   Sometimes for the staff who actually has to do the work,  
19 asking them to do another public meeting or to have a workshop is extra  
20 work. And it makes their lives more difficult. And when they're put on a  
21 tight schedule and you ask them to do one or two or three more things, it  
22 is difficult.

1 I think our experience is that ultimately getting  
2 stakeholder input early resolves issues better. You don't have to go back  
3 and do them again.

4 So we're committed to find a way to get stakeholder input  
5 as early as possible and in an efficient manner.

6 CHAIRMAN DIAZ: Is there something you need from the  
7 Commission and our legal counsel? Are there bottlenecks or stops in  
8 there that now, 2006, we can look at it and say, "This is the way it should  
9 be done"?

10 MR. HOLAHAN: One of the things we're doing is in  
11 general we have asked the rulemaking group in NRR to look for  
12 opportunities, you know, to, in effect, do a self-assessment of the  
13 rulemaking process, to look for opportunities to make the process better  
14 and more timely.

15 You know, we start with a model that says every rule  
16 takes two years. Well, you know, that shouldn't be the case.

17 CHAIRMAN DIAZ: That's my point. We should be  
18 reevaluating every rule has value (inaudible.).

19 MR. HOLAHAN: Yes, yes. And I think there are helpful  
20 and appropriate roles for committees like CRGR and ACRS, but I think  
21 our process now just goes to every committee all the time and doesn't  
22 really ask ourselves what is the value added, do we need it at this stage,

1 do we need it to help us get this issue done. Those are opportunities for  
2 streamlining the process.

3 CHAIRMAN DIAZ: Mr. Reyes, if you would like to  
4 comment on that?

5 MR. REYES: No. I think Gary is right on. We have  
6 done a lot of internal discussion about what can we do with the  
7 rulemaking process. I think he hit it. Our model is two years, and we  
8 check every box in the process, regardless of whether it adds value or  
9 not.

10 And we're questioning that now. I think it is the right time  
11 to question it.

12 MR. HOLAHAN: There is one additional thing we're  
13 doing, which we can use in rulemaking but it's actually driven by the North  
14 Anna early site permit.

15 When we did the first evaluation, we got numerous  
16 comments, thousands of comments, 7,000 comments; in fact, probably  
17 even more. And what we realized is that the front end of that process  
18 was very inefficient. When comments come in, putting them into the  
19 electronic system and how those comments actually came to the staff  
20 actually cost us a month in the schedule. Okay?

21 We have worked out with OIS, Office of Information  
22 Services. We have worked out a process where what used to take a

1 month can probably be done in minutes; thus, the front end of the  
2 comment process.

3 There is probably more we can do on the back end of the  
4 comment process. And that is, putting the comments into the proper bins,  
5 identifying which comments are related or similar, which comments, in  
6 fact, we have addressed maybe previously. And we can build on some  
7 previous answers that we have had to questions.

8 So there are opportunities. There are process  
9 opportunities. There are electronic opportunities. And I think we are  
10 trying to make --

11 CHAIRMAN DIAZ: It might very well be that this is in the  
12 area of change management across the agency. This might be one of  
13 the most important ones. Thank you.

14 Commissioner McGaffigan?

15 COMMISSIONER McGAFFIGAN: I'll follow up on the  
16 Chairman's discussion in a different way. The question I asked the first  
17 panel about renoticing 50.46, I got a little bit of an answer in all of those  
18 workshops that you are planning, Gary. You wouldn't be planning all of  
19 those workshops if there weren't some matters that might not pass the  
20 logical outgrowth test and maybe would.

1                   Did you draft 50.46 broadly enough that there aren't  
2 going to be any logical outgrowth issues consistent with the D.C. Court of  
3 Appeals decision last year?

4                   MR. HOLAHAN: The staff's drafting of 50.46a I think  
5 allows a lot of opportunity.

6                   COMMISSIONER McGAFFIGAN: You've got to figure  
7 that out quickly because in Part 26, Commissioner Merrifield and I got a  
8 briefing earlier this year. It was one of Commissioner Merrifield's  
9 happiest moments on the Commission and as he was told about the  
10 renoticing and we might get that one done by December or January or  
11 whatever, one that we have been working on for more than a decade.

12                   And so I just urge you. I think part of your process, -- this  
13 is a follow-up from the Chairman's point -- if you're more transparent and,  
14 yet, from the proposed rule you have captured all of the options, even if  
15 you don't necessarily agree with them but you seek comment on the  
16 chance that you might agree with them someday, if you take that  
17 approach to things and you're more transparent, you're actually more  
18 efficient because you don't get into this renoticing stuff.

19                   COMMISSIONER MERRIFIELD: Before you answer  
20 that, just for the purposes of the record, to clarify, Commissioner  
21 McGaffigan made a reference to a meeting we had on Part 26. Just so  
22 that for the record –

1 COMMISSIONER McGAFFIGAN: I was being sarcastic.

2 COMMISSIONER MERRIFIELD: No, no, no, no. It's no  
3 problem. I have no problem with that. Generally I'm known as a relatively  
4 nice, collegial guy. And when we came to the discussion with our staff, I  
5 was neither nice nor collegial with our staff regarding that rule, which I  
6 continue to believe was a miserable failure on the part of our agency.

7 I just want to put that as a clarification. Thank you.

8 COMMISSIONER McGAFFIGAN: I was being  
9 whatever. He was not a happy camper that day.

10 MR. HOLAHAN: This is a significant issue. If you recall,  
11 when we sent out 50.46, we sent out more than rule language. We sent  
12 out a list of questions, a long list of questions, about 20 or 25 by my  
13 recollection. I think that provides an opportunity in the public comment  
14 process to look at virtually all of the likely outcomes for a rule that we  
15 would recommend to the Commission.

16 So I don't expect this rule to need a renoticing. However,  
17 if the staff thinks that, you know, for the spirit of safety, we need to do  
18 such a thing, we'll come back to the Commission and recommend it.

19 COMMISSIONER McGAFFIGAN: Let me get to my  
20 second question because I will only get in two probably. You all know  
21 what I think of the triple hyphenated grand unified theory. I enjoyed the

1 conversation between Mr. Jaczko and Mr. Christian talking about  
2 Newtonian versus Einsteinian mechanics.

3 My view is that you guys are going well along relativistic  
4 mechanics. You're trying to come up with a grand unified theory of all  
5 things without having figured out how you actually regulate metal-cooled  
6 reactors or gas-cooled reactors, on which our recent record is  
7 unblemished by success, as I said.

8 But, that all said, my view I think is clear. Section 202 of  
9 the Energy Policy Act of 1974 would require NRC regulation of a  
10 demonstration burner reactor, which is part of GNEP. And it's going to be  
11 metal-cooled.

12 How prepared are you to work on the DOE schedule to  
13 regulate the demonstration burner reactor that could be coming along --  
14 as Commissioner Merrifield pointed out, we have got a lot of things  
15 coming along -- could be coming along at the same time as the tidal wave  
16 of applications for Gen 3-plus reactors?

17 MR. HOLAHAN: That is a very challenging question.  
18 And I don't think even risk-informed regulation is going to solve it for us.

19 COMMISSIONER McGAFFIGAN: It ain't going to solve  
20 it for you, no.

21 (Laughter.)

1 MR. HOLAHAN: You know, we have not licensed a  
2 liquid metal reactor in --

3 COMMISSIONER McGAFFIGAN: Since almost  
4 licensing censure.

5 MR. HOLAHAN: Yes.

6 COMMISSIONER McGAFFIGAN: Right, right.

7 MR. HOLAHAN: There are --

8 COMMISSIONER McGAFFIGAN: You've got resources  
9 going into the grand unified theory. Should we be taking those resources  
10 and putting them, instead, into something that may be a high priority for  
11 the Secretary of Energy, namely the burner reactor component of GNEP?

12 MR. HOLAHAN: I'm not sure we can address that issue  
13 today. I think the '08 budget is the mechanism for the Commission to  
14 instruct the staff as to what priority and what future reactors in support of  
15 which technologies the Commission wants us to follow.

16 MR. REYES: We are on schedule. You are going to  
17 have a nice summer.

18 COMMISSIONER McGAFFIGAN: Yes. Thank you very  
19 much. I'm sure.

20 (Laughter.)

21 COMMISSIONER McGAFFIGAN: You are going to  
22 leave all of the hard choices to us, right?

1 MR. REYES: That's why you get the big bucks.

2 COMMISSIONER McGAFFIGAN: You don't want to go  
3 there, --

4 CHAIRMAN DIAZ: You don't want to go there.

5 COMMISSIONER McGAFFIGAN: -- not after the  
6 publication this week in "Inside NRC."

7 CHAIRMAN DIAZ: Commissioner Merrifield, would you  
8 please take it from there?

9 COMMISSIONER MERRIFIELD: In terms of being  
10 risk-informed, the EDO would be well-disposed not to engage the  
11 Commission on pay, as he knows full well my view about how we are  
12 outpaid by the entirety of our SES staff. So, anyway, we'll leave that one.

13 Bouncing around change management, one of the things  
14 I talked about with the utilities was all the things that are on our plate.  
15 And one of the things that we all do is we invest our time. And one of the  
16 things that strikes me, we have had some issues where we have gotten  
17 ourselves at various points wrapped around the axle with some of these  
18 risk-informed initiatives.

19 And it makes me wonder, with all the other challenges  
20 there, whether perhaps having some of our senior managers sit in on a  
21 few more of those meetings would have helped clarify areas where there  
22 was a conflict between ourselves and NEI.

1 NEI may have the same problem. You know, it's very  
2 frequent that folks at a certain level get hyper focused on an issue when,  
3 whether it's the Commission, whether it's our senior managers can come  
4 in and say, "Hey, listen, guys, let's get up to 20,000 feet." And you realize  
5 this particular subissue isn't such a big question.

6 Have we invested the right manager time in these  
7 issues?

8 MR. HOLAHAN: We were invited to the last  
9 risk-informed working group meeting that NEI hosted. Jim and I and his  
10 deputy went to the meeting. And I think we had a useful discussion.

11 So I think yes, we're open to such activities. I think, sure,  
12 it's a good forum for discussion. We have no objection to it. And when  
13 we're invited, we go to those meetings. I'm not sure we were invited  
14 before, but --

15 COMMISSIONER MERRIFIELD: Well, it may well be  
16 nothing wrong with you, Gary. It may well be further people up the chain.

17 MR. HOLAHAN: No. I --

18 COMMISSIONER MERRIFIELD: And we have got the  
19 industry coming to us across the table and a letter coming in saying, "We  
20 really need the Commission to focus on these." Well, that's a recognition  
21 that something has happened below the Commission.

1                   And so it's not just the people who report to Gary, and it's  
2 not just Gary. It's between Gary and you.

3                   MR. REYES: I think that's a fair request I'm willing to  
4 take back. I think in the past we have seen where active participation by  
5 senior managers on both sides, the industry and the regulator, have  
6 made the issues move forward. So I think that's a fair request.

7                   COMMISSIONER MERRIFIELD: Let me go back to the  
8 look that you take on this, Gary. You come in. And you are able to take a  
9 fresher look at this because you've come in. If you had to sort of point out  
10 some of the lessons we've learned from where we are with 50.69 and  
11 50.46a, do you think you might be able to tally some of those and moving  
12 forward we might be able to avoid them?

13                   You talked a little bit about better communications and  
14 whatnot.

15                   MR. HOLAHAN: I'll speak to it. I would like Jim to give  
16 his insights as well.

17                   The hard spots on 50.69 within the staff and within the  
18 industry were issues that needed to be floated up and discussed. There  
19 are problem areas where the Commission's policy or the rule itself calls  
20 for something and then we write a guidance document which says how to  
21 do that.

1                   We need to implement the Commission's direction and  
2 the regulations. There is no flexibility there. The flexibility is with how  
3 much do you have to do to meet the regulation and how many  
4 opportunities are there to do that guidance document in a different way.  
5 So we heard the example this morning that the industry doesn't like the  
6 idea of doing a risk assessment every time it makes a change.

7                   What the staff is thinking is 50.46a opens up a range of  
8 possibilities of changes to plants that was never available before. You  
9 can make substantial changes to plants. And although we hope and  
10 expect those to be safety enhancements, we have a responsibility to  
11 make sure that they don't get out of control.

12                   50.59 probably doesn't cover very well the scope of  
13 those kinds of changes. So the staff is looking for a way to address that  
14 issue. So we propose that risk assessments be done.

15                   Well, there could be a number of different ways of doing  
16 that. Maybe they could develop some screening criteria. Maybe you  
17 could just check and say, "Well, if it's not in my PRA, probably making this  
18 change isn't going to make the risks go up."

19                   So I think in a lot of these cases, it's a matter of  
20 understanding what is the objective. What you heard here is that the  
21 industry and the staff and the Commission have a fairly consistent view of  
22 what is a good idea, that risk-informed regulation is good.

1                   The difficulties are at the detail stage of how do you  
2 implement it and how does it affect me. It's both the reviewer, "How does  
3 this affect me?" and it's the utility "How does this affect me?"

4                   And it's until we start to figure out what are those hard  
5 spots, how can we do this in a way that achieves the goals but isn't more  
6 burdensome than is necessary, until we get to that point, we don't  
7 actually get these things resolved.

8                   So I think on both sides, we need to first understand  
9 what the objectives are, have some shared understanding. When the  
10 industry comes to us and says they want to change something in the  
11 guidance document and we say it's not consistent with the way the rule is,  
12 we're not going to change it. I mean, that's the wrong story. Okay?

13                   So if they're looking for the staff to be more receptive to  
14 things, they need to understand what we're trying to achieve. We need to  
15 understand what they are trying to achieve and sort of work out how can  
16 those meet.

17                   I think it is possible because in almost every case,  
18 ultimately we come to some workable range, workable version of  
19 risk-informed regulation. It just seems to take too long to get there.

20                   COMMISSIONER MERRIFIELD: I think you put your  
21 finger on it. I mean, you talked earlier about communication and whether  
22 it's a workshop or other means, to sit down and flesh that out.

1                   When you have a circumstance where the Commission  
2 is yes, we want to do risk-informed regulation and both sides agree, "Yes,  
3 we really want to do this," but, nonetheless, it takes us all this time, it  
4 really causes for a fundamental reassessment. Do we have the right  
5 process in place to get us to the endpoint?

6                   It seems to me you have got to build in some way, a way  
7 of demonstrating, "Okay. Where are the areas where the staff can come  
8 to resolution?"

9                   MR. HOLAHAN: Yes.

10                  COMMISSIONER MERRIFIELD: "Where are the areas  
11 where they cannot come to resolution?"; having a process so that it is  
12 kicked up upstairs, wherever upstairs, to make a decision so that we can  
13 come to resolution, rather than continuing, "Well, we can't resolve it. So  
14 let's just keep talking about it" until we keep talking about it and five years  
15 go by.

16                  MR. HOLAHAN: Hopefully the dialogue will also  
17 contribute to less of the suspicion. It's clear that there is suspicion on  
18 both sides. All right? The industry thinks the staff just wants to do more,  
19 more, more. And the staff thinks the industry wants to save money and  
20 isn't really interested in safety.

1                   And so if you look at the IG survey, you'll see that as you  
2 go deeper into the organization, the level of support for risk-informed  
3 regulation diminishes.

4                   And so the management is strongly supportive, and the  
5 middle management is supportive. And then when you go down to the  
6 staff, well, they're more than 50 percent supportive, but it's not the 80-90  
7 percent that you saw higher. So these suspicions exist.

8                   COMMISSIONER MERRIFIELD: That's why you need  
9 both. You need good communications in the front end so that people  
10 understand the buyin. And at the end, you need the managers and the  
11 Commission to make the decisions.

12                  COMMISSIONER MERRIFIELD: Thank you, Mr.  
13 Chairman.

14                  CHAIRMAN DIAZ: Thank you.

15                  Commissioner Jaczko?

16                  COMMISSIONER JACZKO: Thank you.

17                  I'll follow up a little bit on what Commissioner Merrifield  
18 was saying, not just on the issue of communication, but I think one of the  
19 challenges that we have going forward with the risk-informed and  
20 performance-based and perhaps even if we get into a technology-neutral  
21 framework is transparency, and ensuring transparency.

1 Right now if you look at 50.48c versus more deterministic  
2 50.48, certainly the deterministic 50.48 is a little bit convoluted. It's clear  
3 in there what you need to do to have compliance.

4 50.48c, it's not quite so clear. There are references to  
5 more risk-informed performance-based modeling. There's references to  
6 NFP-805, all those kinds of things.

7 Another example that I think is pretty obvious to  
8 everyone is the change to the new MSPI performance indicator in the  
9 reactor oversight process and that there you have gone to something  
10 which is based on a very complicated algorithm and in terms of making  
11 determinations about the findings in that performance indicator.

12 So you have got an issue here of trying to ensure  
13 transparency and trying to ensure that people have access and  
14 understanding for the regulatory process.

15 So I'm wondering if maybe you could comment a little bit  
16 specifically on some of the issues like the performance indicators in the  
17 ROP, which has a transparency goal, and then just in a broader context in  
18 the regulations as we get into more performance-based or risk-informed  
19 kinds of regulations. How do we ensure that that is transparent and clear  
20 to people what the agency is really asking?

21 MR. HOLAHAN: I'd like to have Randy address the  
22 MSPI and how well-understood it is by various stakeholders.

1 MR. BLOUGH: You're right. There is a balance  
2 between effectiveness and transparency here and that with the MSPI, it's  
3 much harder to understand than previous performance indicators. But it's  
4 correcting problems with the previous one.

5 So we'll have an outreach issue to work through with  
6 internal and external stakeholders with that. Up until now, we have had a  
7 small cadre from the regional perspective, a small cadre of people  
8 working closely with headquarters offices in the MSPI. And they're very  
9 familiar with it. And they understand it, and they're bought into it.

10 The rest of the staff will be involved in inspecting the  
11 initial implementation. There is some training they will get in advance,  
12 have gotten or will get. We'll be working through that with case studies as  
13 we do the temporary instruction, which will inspect the additional data.

14 Likewise, externally we'll use our outreach mechanisms  
15 to the states, our annual assessment meetings with the public, and  
16 whatnot, to try to explain the MSPI. And at least you get a level of  
17 understanding of what it is designed to do and why we made the change.  
18 A lot of that outreach still lies before us.

19 MR. REYES: But I just think there has to be a  
20 recognition that as we go into the risk-informed, it is more complicated  
21 and deterministic. And, in fact, that's part of the changed management  
22 issue internally through the organization.

1                   And there is going to be a changed management issue  
2 with the public because when you throw in the MSPI equation to a  
3 member of the public, you are going to have a little bit of a bridge there to  
4 try to convey. They won't understand it. And you have to say, "Trust me.  
5 This is better." And so we are going to have to explain it.

6                   MR. LYONS: I think the answer, to maybe take you back  
7 to 50.48 and 50.48c, 50.48 does give you some very clear statements  
8 about what should be protected. But the interpretation of how those are  
9 going to be protected, there are varying interpretations. And that has  
10 really been the basis of the problems that we have had over the years  
11 implementing the fire protection rules.

12                   In 50.48c, we try to set the performance levels that we  
13 want and then, you know, from our standpoint review the program that  
14 they're having in their fire PRA, which is going to be really the only way  
15 that they are going to be able to address it, and then be able to address  
16 those complicated issues, such as circuit analysis through a way that  
17 focuses you in on the most risk-significant ones.

18                   And so, as Luis said, it is more complicated. And it  
19 maybe is not quite as transparent. But I think in the long run, it gets us to  
20 focusing our efforts and the industry's efforts on those things that are truly  
21 significant.

1                   COMMISSIONER JACZKO: And perhaps 50.48 wasn't  
2 the best example, but I think, you know, as I was saying, the issue still  
3 really comes down to we need to make sure that we are able to  
4 communicate and able to communicate successfully why we're making  
5 the decisions we're making and why in one case somebody is in  
6 compliance or not in compliance. And that gets much more challenging, I  
7 think., as Luis said, when you're dealing or talking about risk models and  
8 things like that that are not necessarily immediately accessible to the  
9 public. So I hope that that will continue to be something that is part of this  
10 effort to do these things.

11                   CHAIRMAN DIAZ: Commissioner Lyons?

12                   COMMISSIONER LYONS: I very much appreciate the  
13 discussion with this panel. And I particularly appreciate the aspect of the  
14 discussion, particularly with Gary, Luis, and the Commission, on different  
15 approaches trying to enhance the rulemaking process, more rapidly inject  
16 a greater emphasis on risk-informed approaches. So to me that has all  
17 been very, very useful.

18                   As I began with the industry panel, I noted the different  
19 perceptions from the industry panel's perspective and staff perspective on  
20 the performance and the advances that we have made in risk-informing. I  
21 said I would ask that same question here. So I think I should, even  
22 though I tend to think that your discussion has covered it very, very well.

1                   Are there other points along that line that you want to  
2                   make about the difference in the point of view between industry and staff  
3                   or do you tend to agree that we have covered it?

4                   MR. HOLAHAN: I'm tempted to let it lie.

5                   COMMISSIONER LYONS: I'm happy with that, but I  
6                   thought that I would ask it.

7                   MR. HOLAHAN: I think one of the things is useful. And  
8                   that's one thing the staff does. The industry is not really monolithic. I  
9                   mean, there are people with various views.

10                  I find it useful to talk to the PRA manager at various  
11                  plants -- I won't name it so they don't get in trouble -- and to see where,  
12                  frankly, NEI represents the industry as a whole and is a lobbyist. And  
13                  they're defending them against the NRC being perceived to be  
14                  over-regulating. And so you tend to get one view.

15                  There are a lot of people in the industry who are using  
16                  risk information every day who are very supportive of it, who are looking  
17                  for opportunities, who are innovative about it. And we try to listen to  
18                  them, too. So it's not all bad news.

19                  COMMISSIONER LYONS: Let's go to a different  
20                  direction entirely. I have been very, very interested since I joined the  
21                  Commission in trying to understand to what extent our codes, particularly  
22                  our more complex codes (inaudible) were well-validated.

1 I know what it means to validate a code with that  
2 provides a deterministic answer, if you will. I'm far less clear in my own  
3 mind about what it means to validate a PRA based code.

4 I was just curious if any of you could speak to the  
5 different challenges that you face in terms of validating a PRA code.

6 MR. HOLAHAN: I'm glad you asked Dr. Eltawila this  
7 question.

8 (Laughter.)

9 MR. REYES: Farouk will answer that.

10 MR. ELTAWILA: I will try that, and then maybe Mary can  
11 help me.

12 When it comes to -- for example, our SPAR model is  
13 being benchmarked against industry PRA. And so we are continuously  
14 updating these SPAR models. That's from the PRA point of view. And  
15 we are reviewing it and assessing it and try to continuously update it.

16 For the tools that are needed to, for example, calculate  
17 the success criteria and things like that, they are assessed in the same  
18 way, like we assess any code, like the thermal hydraulic code or the field  
19 codes or something like that. But it's mainly for the PRA is benchmarking  
20 against the actual PRA of the licensee walk down through the plant to  
21 ensure that the model that represents the actual configuration of the plant  
22 and so on.

1 So I wonder. I did not answer your question somehow.

2 MR. HOLAHAN: And I think that research also has the  
3 accident sequence precursor program, which can be used to benchmark  
4 the PRA models to identify which sequences are actually included in the  
5 models are the sequences that you would expect to show up once in a  
6 while actually reasonably consistent with those expectations. So that's  
7 helpful also.

8 MR. REYES: I think once you do the basic review for the  
9 PRA, if you look at what happens every day in the region and with the  
10 licensees, you end up checking against each other because every time  
11 there is an issue and we calculate what comes out of that process, you  
12 end up checking two individuals with two different PRA models against  
13 the same scenario.

14 And you do a cross-check. And that happens every day.  
15 Every day we do that out in the field. You have always a continuing  
16 validation of the model.

17 COMMISSIONER LYONS: But as you are describing it,  
18 it is a code-to-code comparison.

19 MR. REYES: Right.

20 COMMISSIONER LYONS: It's not a code-to-hard data  
21 comparison. And I guess that is what I tend to struggle with. I probably

1 shouldn't delay this meeting, but I would be interested offline in the future  
2 to better understand how validation works in the PRA model.

3 MR. REYES: There is validation.

4 CHAIRMAN DIAZ: There is the model validation.

5 MR. REYES: You know, it's a very good point that  
6 needs to come up because unless you have been involved, obviously you  
7 don't see those validation points against data.

8 PARTICIPANT: I won't go into detail. We'll do it more  
9 offline. But there is validation of the actual codes and software beyond  
10 just the thermal hydraulic codes that are used. They're not validated by  
11 code to code, but they're actually benchmarked against real data.

12 COMMISSIONER LYONS: Sure.

13 PARTICIPANT: And we can talk more about that offline.

14 COMMISSIONER LYONS: Yes, yes.

15 CHAIRMAN DIAZ: Like when we did the beginning of  
16 the 50.46, there is a significant amount of data that was actually  
17 compared with the codes we saw. So that is going on systematically.  
18 Every time we get data points, whether they're failures or whatever, you  
19 know, each event, it is put in a database. And one of the problems we  
20 had was putting databases that were international, for example, putting  
21 them together.

1                   It's a very good question that needs to get a good  
2 answer.

3                   COMMISSIONER LYONS: If I respond, it will take quite  
4 a while --

5                   CHAIRMAN DIAZ: All right. Well --

6                   COMMISSIONER LYONS: -- get into expert elucidation,  
7 which continues to bother me.

8                   CHAIRMAN DIAZ: Well, not being an expert, I get  
9 bothered by expert elucidations, too.

10                  I don't have any further questions. If my fellow  
11 Commissioners want to have some quick --

12                  COMMISSIONER McGAFFIGAN: Very quickly. Are our  
13 SPAR models proprietary?

14                  MR. ELTAWILA: They are not proprietary, but they are  
15 designated sensitive unclassified. So they are not publicly available.

16                  COMMISSIONER McGAFFIGAN: They are not publicly  
17 available? They're sensitive because of insights that a terrorist might get  
18 playing with the model?

19                  MR. ELTAWILA: That's correct. They're just to give you  
20 all the --

21                  COMMISSIONER McGAFFIGAN: It strikes me that at  
22 some point we may need to bring in some trusted folks, Dave Lochbaum

1 or whatever, and let him play with the SPAR models, knowing it's  
2 sensitive. We've got to find some way to -- and I think it's connected to  
3 the MSPI question that Commissioner Jaczko raised.

4 The second very brief thing that I would ask is, does the  
5 staff agree that the focus needs to be on initiating internal initiating events  
6 and fire for the next several years or -- Farouk's presentation talked about  
7 how close you think you are barring the small minority presumably of  
8 industry folks who are delaying the low-power shutdown and external  
9 events PRAs. Should we be trying to broaden to that front as well? I  
10 mean, are other resources saturated, as was suggested, for the next  
11 several years by trying to get fire and internal initiating events right?

12 MR. HOLAHAN: I would say we know fire is important  
13 from a number of points of view. It is important because it will enable  
14 50.48c. Probably more important, fire PRAs are important because fires  
15 are important.

16 COMMISSIONER McGAFFIGAN: Right.

17 MR. HOLAHAN: And I think what we'll see is that fires  
18 are dominant risk initiators and they need to be well-understood.

19 COMMISSIONER McGAFFIGAN: So is this a saturation  
20 issue, Gary?

21 MR. HOLAHAN: No.

1                   COMMISSIONER McGAFFIGAN: The first two saturate  
2 resources to such an extent that we can't make progress in the latter two.

3                   MR. HOLAHAN: I would like Farouk to -- personally I  
4 don't think so. We were following the Commission's direction on the  
5 phased approach to PRA quality. We think we can succeed on that.

6                   Within that framework, we understand that there are  
7 some that need more priority attention than others. And clearly level I  
8 internal events and fire have to be at the top of the list.

9                   But I don't think we're at saturation, and I don't think we  
10 ought to slow down on them or --

11                  CHAIRMAN DIAZ: If you have some more specific  
12 answer you can provide us to the Commission in writing on this particular  
13 issue?

14                  Commissioner Merrifield?

15                  COMMISSIONER MERRIFIELD: Mr. Chairman, I would  
16 only say I look forward to our next meeting, where the staff can tell us  
17 about more progress that they have made.

18                  CHAIRMAN DIAZ: Excellent.

19                  Commissioner Jaczko?

20                  COMMISSIONER JACZKO: I don't have any more  
21 comments.

1                   COMMISSIONER LYONS: I just have one question I  
2 wanted to ask Randy, if I could. I was just curious, Randy, if from your  
3 perspective you see that the SRAs have sufficient time to work with  
4 inspectors in the field to try to emphasize risk-informed approaches?

5                   MR. BLOUGH: I think so. I think we have been on a  
6 reasonable path with that and we're getting better. One thing we have  
7 seen is that in the SRA position, there has been progression through  
8 those positions.

9                   So, whereas, we start with two per region, we weren't  
10 able to keep two certified SRAs per region. The regions that have had --  
11 and it's healthy to have this movement. The regions that have  
12 experienced that have now gone to staffing of three SRAs.

13                   And we're expanding the amount of time, particularly with  
14 team inspections and also in their coaching of inspectors on individual  
15 inspections, to use risk insights better for picking the samples, to use now  
16 the risk-informed notebooks in the planning of an inspection. So you're  
17 focusing on the most important areas.

18                   MR. REYES: Yes. Let me just emphasize in my view  
19 the most contributing activity is that the senior reactor analyst in part of  
20 the preparation for the inspection -- we used to go to the inspections.  
21 And we read the FSAR, we read a few things. And we went and did the  
22 inspection.

1                   Now the risk analyst is a part, integral part, of the  
2 inspection preparation. I'm going to give you an example. The utilities do  
3 an outage. We get the outage activity. And the inspectors meet with the  
4 risk analyst.

5                   And it turns out that they are doing maintenance on both  
6 trains of safety-related breakers, same people, same procedures, same  
7 grease. Right away the risk analyst will highlight that to be one of the key  
8 activities to observe.

9                   So big insight up front in preparation for the inspection  
10 leveraging our resources to look at the risk-important activities, whether  
11 there is an outage or whether it is something else.

12                   COMMISSIONER LYONS: Thank you.

13                   CHAIRMAN DIAZ: Well, I think with that note, I think it  
14 highlights the underlying theme of this meeting is that risk-informed and  
15 performance-based regulation is part of the fabric of the NRC.

16                   It is not going to go away. I think it is for every one of us  
17 to make it better because, you know, I think each has contributed and can  
18 continue to contribute to the safety of nuclear power generation in this  
19 country. And for the NRC, it ensures that we can ensure adequate  
20 protection of our people.

21                   I think we can do more. I think that sometimes we are  
22 risk-averse ourselves and in many ways, you know, try to go to too many

1 levels. That provides a safe regulatory path. But if we really are  
2 risk-informed, we should at times take those small risks that will put us on  
3 the right path to be able to do the kind of things that we need to do.

4 And, with that, I want to thank my fellow Commissioners  
5 for an excellent meeting. I want to thank the staff for being well-prepared.

6 And we are adjourned.

7 (Whereupon, the foregoing matter was concluded.)

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