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**UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION**

**Title: MEETING ON NRC RESPONSE TO  
STAKEHOLDERS' CONCERNS**

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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION  
OFFICE OF THE SECRETARY

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MEETING ON NRC RESPONSE TO STAKEHOLDERS' CONCERNS

U.S. NRC  
Auditorium, II WF  
White Flint Building  
11555 Rockville Pike  
Rockville, Maryland

Thursday, December 16, 1999

COMMISSIONERS PRESENT:

- RICHARD A. MESERVE, Chairman
- GRETA J. DICUS, Commissioner
- NILS J. DIAZ, Commissioner
- EDWARD McGAFFIGAN, Commissioner
- JEFFREY S. MERRIFIELD, Commissioner

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## P R O C E E D I N G S

[9:05 a.m.]

2  
3 CHAIRMAN MESERVE: Good morning. Why don't we get  
4 started.

5 My name is Richard Meserve, and I have recently -  
6 within the last six weeks or so - been sworn in as a  
7 commissioner and as chairman. I suspect that most of the  
8 people here around this table know each other fairly well.  
9 That's why I thought I needed to introduce myself. I think  
10 I'm the one unknown person.

11 [Laughter.]

12 CHAIRMAN MESERVE: This is the fourth of meetings  
13 that we have had with stakeholders on reactor-related  
14 issues. I think the last one was held on May 4. I  
15 obviously, was unable to participate in the previous  
16 meetings, but it is my understanding from conversations with  
17 my fellow commissioners, that these have been  
18 extraordinarily helpful to the Commission in understanding  
19 the perspectives of stakeholders on all sides of the issues  
20 we confront, and very much welcome the opportunity to  
21 interact with everyone this morning.

22 Our format today is to deal with three particular  
23 subjects. First, to deal with the efforts to risk in form  
24 Part 50; second, to discuss the modifications of the reactor  
25 oversight process that we are contemplating in the pilot

1 program that's been underway in that area; and then,  
2 finally, to discuss the 2.206 petition process, which of  
3 course is the process by which people can bring issues to  
4 the Commission's attention.

5 What I would propose we do is we deal with each of  
6 those subjects, in that order individually, and in order to  
7 launch us on each of the subjects, the staff is going to  
8 provide a very short, capsuled summary of where the  
9 Commission, as a whole, stands on those issues to really  
10 provide a foundation for the discussion and make sure that  
11 everyone's on the same page.

12 I might, for the benefit of the audience, sort of  
13 walk around the table and introduce the people who are here.  
14 On my far left is Same Collins, who is the director of NRR  
15 here at the NRC. Next to him is Joe Colvin, who is the  
16 president and CEO of the Nuclear Energy Institute. Next to  
17 him is my colleague, Jeffrey Merrifield.

18 Next to him is Oliver Kingsley, Jr., who is the  
19 president and chief nuclear officer for ComEd. Then my  
20 colleague, Commissioner Diaz; and then next to Commissioner  
21 Diaz is a very good friend, John Ahearne, he's former  
22 Chairman of the Nuclear Regulatory Commissioner. He's been  
23 a director and I think still is a director of Sigma Xi, and  
24 as all of you know, was the project director on an  
25 important, recent report about the Nuclear Regulatory

1 Commission. It was prepared under the auspices of CSIS.

2 Next to John is John Ferguson, who is the vice  
3 president on the Council on Nuclear Codes and Standards of  
4 the ASME. Next to John is another John, which is John - I'm  
5 going to mispronounce your last name - McGaha, who is the  
6 executive vice president and chief operating officer for  
7 Energy.

8 On my right is Bill Travers, who is the executive  
9 director of operations. James Riccio, who is here with  
10 Public Citizens Critical Mass Energy Project, Ashok Thadani,  
11 who is the director of our Office of Research. My fellow  
12 commissioner and former Chairman Dicus is with us this  
13 morning.

14 Then we have James Setser, who is the chief of the  
15 Program Coordination Branch of the Department of Natural  
16 Resources in the state of Georgia. Paul Gunter, who is the  
17 director of the reactor watchdog project for Nuclear  
18 Information and Resource Services - I know it's NIRS, but  
19 I've got to think a minute to get the full name for the  
20 acronym.

21 Next to Paul is my colleague, Commissioner  
22 McGaffigan. Gary Leidich, who is an executive vice  
23 president with INPO, and then Luis Reyes, who is a regional  
24 administrator for Region II.

25 I welcome you all this morning, and very much

1 appreciate your agreement to participate. Before I turn  
2 this over to the staff to give us a snapshot of the issue of  
3 risk informing Part 50, let me see if any of my fellow  
4 commissioners would like to make a statement.

5 COMMISSIONER DICUS: If I could, Mr. Chairman,  
6 just a very, very brief statement.

7 Certainly, I want to join you in welcoming all of  
8 our panelists and our other stakeholders to this, the fourth  
9 very important meeting on stakeholder involvement and  
10 interchange of our ideas.

11 Our most recent stakeholder meeting was for our  
12 material stakeholders and not our nuclear power plant  
13 stakeholders; but again, it was very successful. We weren't  
14 sure about it. We weren't sure how to get into it, but we  
15 had some very candid and open discussions with our  
16 stakeholders and I think the outcome is very good.

17 The discussions helped us to shape regulatory  
18 reform and ultimately help ensure all of our successes; and  
19 I'm delighted that we'll be able to focus our discussions  
20 today on the three topic areas that the chairman mentioned,  
21 two of which are very specific to nuclear power plants, and  
22 the third, of course, transcends nuclear power plants, as  
23 well as materials licensees, and that's a 2.206 issue.

24 Woody Allen once said that "Eighty percent of  
25 success is showing up," and he's probably right. Now that

1 we are here, I am very pleased that we may focus on the more  
2 important 20 percent of concentrating on, not only showing  
3 up, but interchanging our ideas.

4 Now some - maybe most of you - know rather  
5 recently I had a run-in with a grape at a super market, and  
6 actually the grape won.

7 [Laughter.]

8 COMMISSIONER DICUS: But hopefully, as we proceed  
9 through these regulatory changes that we're dealing with,  
10 and as our conversations will say, there will be no sour  
11 grapes, and we'll all have two legs to stand on, and the  
12 chairman's probably pleased to know I just ended my opening  
13 comments.

14 Thank you.

15 [Laughter.]

16 COMMISSIONER DIAZ: I have no comments, Mr.  
17 Chairman.

18 COMMISSIONER MERRIFIELD: Mr. Chairman, thank you  
19 very much. I want to join both the chairman and  
20 Commissioner Dicus in making the compliments, not only to  
21 the participants on the panel who have given their time to  
22 come in and share their thoughts with us, there are others  
23 in the audience who have been equally active in their  
24 efforts to comment on the issues that have been drawn up by  
25 the chairman and I certainly look forward to their input

1 further on down the line.

2 I want to compliment the chairman, as well, for  
3 framing some issues that I think really put it into focus,  
4 areas we need to take a look at. As part of that for me, I  
5 think there are three take-away issues, for me, that I'm  
6 looking forward to trying to get some sense of today.

7 The first one is to get a better feel for whether  
8 our licensees, especially those who are not part of the  
9 pilot plants, are prepared for the full implementation of  
10 the new reactor oversight process coming forward in April.

11 The second one for me, given the significant  
12 resources in FTE and monetarily, that we're putting into  
13 risk informing Part 50, I'd like to get a better  
14 understanding and appreciation from industry interested in  
15 risk informing Part 50 and whether it's really worth this  
16 effort. It's a lot of money on our part, and are we really  
17 doing the right thing.

18 The final one is - and we are looking at 2.206 - I  
19 think we as an agency have made a sincere effort to improve  
20 our efforts to respond to stakeholder concerns. Obviously,  
21 there are others who feel we have a ways to go. I'd  
22 specifically like to know whether the revisions that we've  
23 made in Management Directive 8.11 has moved forward in the  
24 process? Is that an improvement? I think that's something  
25 that will be useful for me to know coming out of this.

1           With that I thank the participants and the  
2 chairman and look forward to a very productive meeting, as  
3 the other three meetings have been.

4           CHAIRMAN MESERVE: Why don't we get started.  
5 Ashok.

6           MR. THADANI: Thank you, Mr. Chairman, and good  
7 morning.

8           What I thought I would do is to quickly go through  
9 a little bit of background to try and context what some of  
10 the issues are.

11           By way of background, as you all know, the NRC  
12 regulations are built upon a state of accidents called the  
13 "design-based" accidents; and then the systems that are  
14 called upon to deal with those accidents have traditionally  
15 been called "safety-related" systems.

16           The traditional engineering approach to ensuring  
17 high reliability of the systems have redundancy, diversity,  
18 making sure there are multiple barriers for defense and  
19 depth consideration, imposing margins in recognition of  
20 uncertainties, and utilizing codes and standards to make  
21 sure that the systems are of high quality. On top of that,  
22 then, one applies what we believe in many cases to be  
23 conservative assumptions, analysis and techniques to assess  
24 the consequences.

25           This approach has actually worked very well over

1 the past 30 years, but we have learned a great deal from  
2 operating experience and other studies. Herein, risk  
3 analysis techniques offer a great opportunity to better  
4 understand the relative safety significance of many of our  
5 requirements, primarily because risk analysis techniques  
6 look at both people and hardware in an integral fashion.

7 We have gained a fair amount of experience over  
8 the years in the '80s and '90s. We have applied these  
9 techniques for our backward decisions. We have also learned  
10 a great deal from individual plant examinations, both for  
11 internal events as well as external events, the studies  
12 conducted by the industry.

13 With this as background, the Commission developed  
14 its policy statement in 1995, and there are some key points  
15 in the policy statement that I want to make sure I bring out  
16 here.

17 The statement has a partner that says, "The use of  
18 PRA technology should be increased in all regulatory matters  
19 to the extent supported by the state of the art and PRA,  
20 both in methods and data, and in a manner that complements  
21 the NRC's deterministic approach and supports the NRC's  
22 traditional defense and their philosophy."

23 As you, since the issuance of this policy, we've  
24 had a number of activities underway, ranging from using risk  
25 information in license amendments, oversight processes -

1 which we'll discuss later on today - to looking at events  
2 and their relative importance in using these techniques and  
3 making sure that the following agency actions are consistent  
4 with relative importance of the events; and of course, a  
5 major part of our effort is to take a look at Part 50 for  
6 regulations.

7           In that there are two key areas. Those are called  
8 the Option 2 and Option 3. The Option 2 is the earlier  
9 effort for us to take a look at special scope in terms of  
10 treating certain systems. As I said, design-based accident  
11 systems required are called "safety-related" systems.

12           We now know that some of the safety-related  
13 systems are perhaps not as important in terms of safety, and  
14 some of the so-called "non-safety-related" systems are  
15 actually important to safety.

16           Herein, the effort is to get better understanding  
17 of relative importance of these systems, and to make sure  
18 that the attention of the industry and the agency is  
19 consistent with that relative importance.

20           The key milestones we have that we expect to  
21 solicit comments on advanced notice of proposed rulemaking  
22 on this - we expect to propose a rule on this issue to the  
23 Commission in September of the year 2000; and complete pilot  
24 plant activities in July 2001; and implement this rule in  
25 2002.

1           The second part of the revision for Part 50 goes  
2 significantly beyond looking at relative importance, to a  
3 large extent, to a fundamental structure of the regulations.  
4 Herein - and that's called Option 3 - herein we're looking  
5 at the fundamental, technical requirements.

6           It's clear to us that we have to go beyond looking  
7 at the regulations. Oftentimes the regulations are fairly  
8 effective. It's the implementation documents that deserve a  
9 great deal of attention. So we'll be looking not just to  
10 the regulations, but the regulatory guides, standard review  
11 plans, branch technical positions and so on.

12           The intent here is to look for two things. First,  
13 are there unnecessary conservatisms, now that we know more  
14 about risk analysis techniques, and we do have the  
15 Commission's safety goal policy statement. We would also be  
16 looking to see if in fact there may be some gaps, that there  
17 may be areas where one could strengthen up.

18           The key milestones there are that we are, of  
19 course, part of these efforts. We have been having  
20 workshops and interacting with various stakeholders. But  
21 the key element here is that we intend to provide status  
22 information in March. Prior to that there will be a public  
23 workshop in February of 2000. Then the final recommendation  
24 to the Commission is due in December of 2000.

25           Now, as we go forward, while we have a fair amount

1 of experience, we do have to be mindful of some limitations  
2 that deserve attention. Now we have to make sure that we  
3 have addressed the issues of defense and depth, and margins,  
4 with a great deal of concern and understanding, both of risk  
5 analysis techniques, as well as our traditional approaches.

6 There are some areas where we know risk analysis  
7 techniques have weaknesses, and we have to make sure we keep  
8 that in mind as we move forward.

9 A critical element, as we go on, is making sure  
10 that the standard that's developed which measures the  
11 quality of these studies is in itself of high quality. If  
12 we're going to make some fundamental changes to our  
13 requirements, it is essential that the standard that these  
14 requirements are built on is credible.

15 I think some of the other concerns that  
16 stakeholders have had have been to make sure, as we move  
17 forward, that we articulate very clearly where we want to  
18 be, what are some of the safety criteria we would use, and  
19 how would we integrate the many risk-type activities that  
20 the agency has on-going?

21 Finally, the issue of training. As we go forward  
22 in the out-years, it is critical that both the industry and  
23 NRC have the right capability to be able to apply these  
24 techniques in an effective manner.

25 Mr. Chairman, that's sort of the background

1 information I thought might be helpful.

2 CHAIRMAN MESERVE: Thank you very much.

3 It's my intention - or our intention - this  
4 morning to have this really be very free form and in this  
5 general subject area to invite comment from various of the  
6 other participants. Obviously, we'd be very interested in  
7 your perspectives on the program that Ashok has laid out.

8 I know that John McGaha has put some thought into  
9 this and he has presented us with a paper in advance of  
10 this. Why don't I turn to him, first, for comments on the  
11 risk informing Part 50; and then whoever else would like to  
12 chip in there after, we'd be happy to hear you.

13 MR. MCGAHA: Thank you, Mr. Chairman.

14 As I indicate in the position paper that was  
15 proved - there are copies out on the front table - the  
16 industry and the NRC have both learned a lot from the  
17 insights and use of the PRA studies over the years that  
18 we've been using those studies.

19 The fact that technology advances and improved  
20 analytical techniques, along with the years of our industry  
21 experience, have allowed us to use risk evaluations in a  
22 time frame that actually allows - actually enhances our  
23 operational and safety-related decision-making process.

24 In fact, my opinion is that, if we were still in  
25 the business today of licensing new plants, there's no doubt

1 in my mind that we'd be using a risk-informed approach in  
2 that process, reaping significant enhancements, both in  
3 safety and from a cost standpoint.

4 Likewise, though, we can and have benefitted, to  
5 date, from the application of risk-informed tools in our  
6 current operating plants. There's a laundry list of  
7 examples - of these successes: The individual plant  
8 examinations, the maintenance rule, the pilots - some of the  
9 pilots we have done such as in the inspection and testing  
10 area. I have personal knowledge of one of those.

11 We did an in-service inspection pilot as part of  
12 an NEI program at our Arkansas Nuclear I plant. We  
13 recognized some benefit from that. The plant-to-plant,  
14 technical specification improvements that have been made  
15 over the years, using some risk-informed decisionmaking.

16 There's another example. I think the regulatory  
17 oversight process that we're getting ready to launch into is  
18 another example; and there's other ongoing rulemaking such  
19 as the 50.59 process, all examples of where we've had finite  
20 successes using the risk-informed approach.

21 Obviously, at least in my mind, the primary  
22 benefit is maintaining and improving safety, a secondary  
23 benefit; and very important is burden reduction and the cost  
24 benefits associated with it.

25 The obvious benefit of this, as the nuclear plants

1 go into the de-regulated marketplace and try to compete with  
2 gas, coal and other forms of energy, this could be  
3 significant from that standpoint.

4 But as with anything, every effort, every  
5 initiative that we've done in a finite environment has not  
6 been a success. We have run into obstacles. One plant  
7 tried to do a graded, quality assurance program, as an  
8 example. It hasn't come to fruition.

9 Some plants have gone after technical  
10 specification changes, and they've run into obstacles,  
11 differences of opinion, things that just kept those from  
12 being a success.

13 As with any new initiative, it takes time. It  
14 takes time to achieve the desired results. We are going to  
15 get some bumps and bruises along the way. But nevertheless,  
16 our experience to date gives us both the confidence and the  
17 motivation to further investigate application of the  
18 risk-informed improvements to our regulatory documents.

19 Now, as we proceed, we need to keep several  
20 objectives in mind. If I can quote just for a second part  
21 of a presentation that was made at a recent Region IV  
22 Engineering Managers meeting by several presenters from the  
23 staff. I think they were talking about SECY 99-256, which  
24 is one of the follow-up rulemaking plans for implementing  
25 SECY 98-300, which I believe is Option 2.

1 I think the objectives they listed, though, really  
2 capture the essence of what we should be striving for; and  
3 they listed three things. "One, establish an optional,  
4 regulatory approach that enables licensees to risk informed  
5 treatment requirements.

6 "Two, the regulatory framework that implements  
7 this alternative must maintain safety while reducing  
8 unnecessary burden, improving staff efficiency and  
9 effectiveness, and enhancing public confidence.

10 "Three, utilize the pilot plant experience to  
11 support the staff's development of regulatory framework and  
12 technical approach."

13 Now, I could take those same three objectives and  
14 overlay them on the whole initiative that we're trying to do  
15 here - the whole approach to risk-informed regulation, and I  
16 think it applies.

17 So, as I indicate in my decision paper, there are  
18 three things - three main messages I'd like to leave with  
19 you here today. I'll call them three concerns or cautions  
20 that we must keep in mind as we proceed.

21 The first is that we're dealing with an uncertain  
22 environment as we do this initiative. We need to be slow  
23 and precise as we proceed. Ground rules must be solidified  
24 and expected results ascertained before we launch into  
25 something where we expend a lot of resources and not knowing

1 exactly what we're going to get out of that effort.

2 If we proceed too fast, expending significant  
3 resources only to deliver a product that is questionable  
4 from a cost-benefit standpoint, the whole initiative in my  
5 mind could be stifled.

6 So in this regard, we need the NRC assessment,  
7 Option 3, and resolution of issues relative to the advanced  
8 notice of rulemaking as a preface to launching major  
9 resource intensive pilots. An expedient development of the  
10 NRC guidelines is necessary, but not so expedient that we  
11 fail to get the right kind of input, and therefore, the  
12 desired output.

13 The second thing is that the benefits need to be  
14 cost-beneficial, and pragmatic, not just safety enhancing.  
15 A minuscule improvement in safety may not be worthy of the  
16 burden experienced to get it. On the surface, just looking  
17 at it from 10,000 feet, the associated cost appear to be  
18 fairly high. As I said earlier, the benefits appear at  
19 first glance to be uncertain.

20 Now I anticipate this uncertainty aspect will be  
21 somewhat minimized by the SECY 98-300 Option 3 work, which  
22 will hopefully provide the focus and understanding that make  
23 the benefits clear to all.

24 For example, as you know - and I think was  
25 mentioned a minute ago - all PRAs are not built to the same

1 standard set of specifications. Some utilities have  
2 expended heavy resources to develop sophisticated PRAs and  
3 risk-analysis tools.

4 This difference in past investment will motivate  
5 some utilities, obviously, more to push forward, full speed  
6 ahead, and other utilities to be a little more selective and  
7 cautious about moving forward.

8 Finally, the third point is, it is very important  
9 - very important - for this to be a voluntary approach, as  
10 is currently laid out in the SECY document. A plant seeing  
11 no benefit in implementing risk-informed regulations, should  
12 not be forced to do so.

13 Some industry representatives feel, for example,  
14 that this draft, new SECY 96-246 appears to be moving away  
15 from this position, by requiring licensees to consider risk  
16 impact in non-risk amendment submittals. That's some  
17 people's opinion. If that's true, that's not the direction  
18 we feel we should be moving. We need to keep this program  
19 voluntary.

20 So, in summary, and my paper goes into a few other  
21 details -- and I'm not going to cover those here -- but in  
22 summary, industry is generally supportive of the agency's  
23 move toward risk-informed regulation and oversight.

24 However, a concerted effort is needed to ensure  
25 consistency in principles, and a realization of cost and

1 safety benefits as we move forward. Continued industry  
2 support is dependent on practical approaches that provide  
3 increased safety focus and cost-beneficial improvements.

4 This means that risk informing the right  
5 regulations - and I emphasize the word "right," is of the  
6 highest priority. Thank you.

7 CHAIRMAN MESERVE: Thank you very much.

8 Let me ask you a question about the third of the  
9 lessons that you have us draw? You indicated that the  
10 approach should be voluntary, and I understand the  
11 importance of that.

12 The question that I have is that from our side, we  
13 also have to do a risk-benefit calculation as to whether  
14 having undertaken what is a very major effort, there is a  
15 significant enough number of licensees who would be  
16 interested in participating to have it be worth the effort.

17 I'd be curious, from your perspective, as to  
18 whether you have any sense of the extent to which we're  
19 undertaking an activity that a significant number of  
20 licensees is likely to want to utilize?

21 MR. McGAHA: I haven't really taken a survey or  
22 anything of that nature, but the general feeling in the  
23 industry is that this is the right direction to head. But  
24 there are a lot of companies worried about progressing too  
25 far, too fast, without establishing the ground rules and the

1 approach, up front, so that we know what we're getting in  
2 to.

3 If we come up with a set of standards and a method  
4 for doing this that causes 50 percent of the utilities a  
5 tremendous amount of resource expenditures, versus the other  
6 50 percent who maybe happen to be at the other end of the  
7 spectrum, you're going to have 50 percent of the industry  
8 that's not going to be fairly receptive to this.

9 When I look at the pilot program - I mentioned the  
10 Arkansas Nuclear 1 pilot program - when we did that  
11 in-service inspection pilot, as we "Monday morning  
12 quarterback it" we feel that we did get good benefit out of  
13 that.

14 But if you'd just look at it from a pure business  
15 decision, return on investment, we may not have made the  
16 decision to do that pilot. But when you throw in the soft  
17 benefits, the reduction in man-REM exposure, the ability to  
18 be able to focus on some of the other issues rather than  
19 doing some of the inspections that did not have any safety  
20 significance. So there are a lot of secondary benefits.

21 When I add all that together, I think that was a  
22 real worthwhile cost. But as you move into some of these  
23 regulations, and I think Ashok mentioned it earlier, we've  
24 got to be careful. We need to go look at the right reg  
25 guides, the right documents, and make sure the standards of

1 how we're going to do this are well laid out up front.

2 I think that's - it's my understanding that's what  
3 the Option 3 study is supposed to do.

4 CHAIRMAN MESERVE: Let me throw this open to other  
5 comments.

6 Commissioner Dicus.

7 COMMISSIONER DICUS: Yes, thank you, Mr. Chairman.

8 Mr. McGaha, your uncertain environment, your first  
9 industry concern you say, "Before further resources are  
10 expended, a higher degree of regulatory predictability and  
11 benefit must be established," which is one of the things  
12 we're truly moving toward and trying to achieve. I think  
13 we've made progress.

14 I just wondered if you could elaborate a little  
15 bit more on what you think we could do differently, or where  
16 we need to go to improve where we are. Because I think  
17 that's a critically important point, for everybody, for all  
18 our stakeholders.

19 MR. McGAHA: I think, first of all, we need to  
20 communicate like crazy. Not that we weren't going to do  
21 that. We need to have lots of workshops, lots of industry  
22 involvement; and not get too far ahead of ourselves, and  
23 make sure that what we're doing is a pragmatic approach.

24 I mentioned our Arkansas plant a minute ago. They  
25 have sort of dis-volunteered themselves to continue to be a

1 pilot plant under this process. Not because they don't want  
2 to do it. They do want to do it. Their main reason is  
3 they're plate is so full next year with lots of things going  
4 on there - I won't get into that.

5 But when I went back to our other Entergy plants,  
6 and tried to solicit a volunteer, there was nobody stepping  
7 forward with their hand raised - at least they were pretty  
8 tenuous about it. When I dug into it, the reason is, they  
9 said, "You know, we're not sure were we're going with this.  
10 We don't want to go launch into a pilot to re-engineer the  
11 regulations of environmental qualifications and end up  
12 spending tremendous amounts of resources and end up not  
13 getting out of it real benefits."

14 COMMISSIONER DICUS: Okay. Mr. Chairman, if I  
15 could follow up.

16 Then, you talked about - and we all agree - we  
17 can't go rushing forward head-strong. This has to be a  
18 cadenced approach to where we're going. I think what would  
19 be helpful to the Commission and to the staff is if the  
20 industry and the stakeholders - or the stakeholders can give  
21 us some road maps on how we proceed carefully and  
22 cautiously, because I'm concerned and understanding the  
23 plighting with the quality assurance.

24 I know that didn't turn out like we wanted it to.  
25 It was a lesson learned in trying to go forward, but I think

1 it's extremely important. Because we want this to work, for  
2 a lot of reasons, that we do continue as you say, the  
3 communication.

4 MR. McGAHA: I think we're on the right track.

5 MR. COLVIN: Thank you, Mr. Chairman.

6 I was going to try to respond to Commissioner  
7 Dicus' comment. She's exactly on point and consistent with  
8 our thinking.

9 In fact, I think if you look at the SECY 99-256  
10 issues in the advanced notice of proposed rulemaking, as an  
11 example, that's due to come out, I think that the earlier  
12 that in fact that can be issued to the stakeholders, so the  
13 stakeholders can review it and analyze it.

14 If we set up a process by which the NRC staff  
15 conducted a series of public meetings with the various  
16 stakeholders and worked through the details of the  
17 implementation guidelines to move forward through that  
18 process, I think we would develop an approach and an  
19 understanding of what is actually going to be expected, what  
20 the parameters of these pilots would be.

21 I think if we think that the - the issue here is  
22 we really need to think out and do the preparation up front  
23 as to how we define these programs and processes so we can  
24 know then how to - what the resource needs for both the  
25 agency and the various pilots will be, and what kind of

1 expectations and time schedules we could then develop.

2

3           You know, we've been working on these issues,  
4 really, since the mid-'80s. I mean, we started talking  
5 about risk-informing regulations even in the early '80s -  
6 '82, '83 time frame - and it wasn't really until the  
7 issuance of the NRC maintenance rule in 1991 that leveraged  
8 this off into this new path, and I think we've made  
9 tremendous progress.

10           I think as we now go forward we need to capture  
11 these lessons learned and take a reasoned approach to  
12 defining these so we can have a higher chance for success  
13 and a greater opportunity to bring these changes around.

14           So I don't think we're -- in my mind, that it's a  
15 tremendous delay in any activities, it's more of an up-front  
16 look at what's expected so that all the parties will have a  
17 better appreciation of what's needed.

18           CHAIRMAN MESERVE: John Ahearne?

19           MR. AHEARNE: Just a couple of general comments.

20           To start with, I'm not really sure what the term  
21 "stakeholder" means anymore. But the National Academy came  
22 up with a different phrase, "interested and affected  
23 parties." I guess I'm certainly an interested party.

24           One issue I'd like to just comment on is one that  
25 we brought up in our CSIS report. In talking about risk

1 regulation, we mentioned that all the improvements necessary  
2 to move to a risk-informed approach will not come to pass  
3 unless there's a significant effort to upgrade the  
4 capability of both the NRC staff and the licensing staff to  
5 do PRAs.

6           Currently many of the PRAs are poorly done. It  
7 will take several years to bring the staffs to the necessary  
8 level if such an upgrade is emphasized. I recently had an  
9 opportunity to check whether that was still perhaps an  
10 appropriate comment.

11           There is a Society for Risk Analysis, which has  
12 many people who are the practitioners of doing this, and in  
13 checking with many of them they still carry this same  
14 message that the risk analysis that is necessary to do the  
15 kinds of efforts that the NRC has launched on is not easy.  
16 There's a concern that the people on both sides of the  
17 situation - both the industry and the staff - need a fair  
18 amount of upgrading to be able to do that.

19           A second point, it's not clear from a quick skim  
20 of the documents. I see that the NRC is still in the  
21 business of producing paper.

22           [Laughter.]

23           CHAIRMAN MESERVE: And lots of it.

24           MR. AHEARNE: So, I have to say, it's a quick skim  
25 of the documents. I think it is certainly appropriate. As

1 in 99-264, it mentions that the high priority items are for  
2 substantial potential for improving safety.

3 One difficulty, though, that that can carry with  
4 it is that it may miss the concept of - to have an improved  
5 regulatory efficiency. As many of you certainly know, there  
6 was a push recently in the past years in Congress to try to  
7 have the agency become smaller. One of the arguments was,  
8 "It's not efficient."

9 We in our study tried to concentrate on keeping  
10 the focus. Safety has to be the focus of the agency. But  
11 there's also the question of efficiency. The risk-informed  
12 approach in modifying regulations, as has already been  
13 mentioned both by Dick Meserve and the energy gentleman, may  
14 take a lot of resources. Is it worth it?

15 I'm a long-time risk advocate - risk analysis  
16 advocate - so I think it will be worth it. But it's going  
17 to take a lot of concentrated effort. I'm not sure if it  
18 would really be worth it, if the focus is solely on the  
19 current operating plants. That's not obvious to me.

20 I notice in the documents that the lowest priority  
21 would be for future plants. Now many of you may think,  
22 "There aren't going to be future plants." Internationally,  
23 there will be future plants. And the NRC is the world's  
24 leader on how you regulate.

25 Many of the countries look to the NRC to see how

1 should they regulate their nuclear plants. I'm engaged  
2 right now with an effort with the Russian government.  
3 They're trying to move their system into a regulatory  
4 framework that is better suited to dealing with their  
5 system, their plants. They're looking to the NRC on how you  
6 do it.

7           The Energy Department is now beginning to actually  
8 put money into trying to help develop what they call a  
9 "generation 4" set of reactors. They're have a big  
10 international meeting in January with 14 different country  
11 representatives coming to talk about this.

12           There is a real potential to make significant  
13 improvements in the way new designs are developed, if the  
14 regulatory framework is risked based. So I would just like  
15 to suggest that is something you ought to keep in mind as  
16 you go forward with the NRC's efforts, that you are going to  
17 have a major impact, internationally, on how regulation is  
18 developed, which could have a major impact, internationally,  
19 on how our reactors are designed.

20           CHAIRMAN MESERVE: Commissioner Diaz?

21           COMMISSIONER DIAZ: Yes, thank you, Mr. Chairman.

22           I just kind of sense that in the background there  
23 is an issue that sometimes doesn't come up to the forefront.  
24 That issue is the continued push and pull, not of boric  
25 acid, but continuous push and pull to be prescriptive or not

1 to be prescriptive.

2 Now, it is obvious that when the energy becomes  
3 very prescriptive, the industry doesn't like it and  
4 complains about it. When we try to be not prescriptive,  
5 then the industry feels uncertain. This is where risk  
6 information really comes into play.

7 A very good set of risk-informed regulations does  
8 not have to be prescriptive. It doesn't have to have that  
9 same degree of definition, nor does it have to be enforced  
10 by looking over whatever you do. Eventually, people are  
11 even talking of becoming performance-based, which I think is  
12 the next step. I think that something the commissioner said  
13 refers to one and then to the other.

14 But really, it's something that needs to be  
15 resolved. We are not going to be as prescriptive in a  
16 risk-informed approach as we were before. Some people in  
17 the industry like it; and some of them don't like it, and I  
18 think it needs to be stated in those terms, rather than, you  
19 know, what the principles are.

20 The second, you know, issue is, can you do a  
21 little bit? And I referred this to, "Can you be a little  
22 bit pregnant or not," and the bottom line is that most of  
23 the problems that have happened in the past are because of  
24 the very, you know, small task - very small improvements  
25 that were made, that were sunk in a sea that is not risk

1 informed. So you cannot really do what you intended to do.

2 So the big question is, do we want to be  
3 prescriptive or not? If we want to be risk informed, we're  
4 not going to be that prescriptive. There is going to have  
5 to be a series of improvements in how we understand the  
6 entire issue.

7 I agree with Dr. Ahearne that it requires a little  
8 higher level of understanding and functionality. Maybe that  
9 might be a pre-requisite. That might be needed before we  
10 can actually do everything else. But, you know, you can't  
11 have both.

12 You either have one or have the other, and you  
13 can't have both; and I think it should be a voluntary  
14 decision. But it is a decision that needs to be made, it's  
15 a dialogue that needs to be started.

16 Thank you.

17 MR. RICCIO: I appreciate Chairman Diaz' lead in.  
18 I think the only thing that's uncertain at this point is  
19 whether the industry is going to achieve the regulatory  
20 burden reduction that they're expecting. Obviously, I'm the  
21 voice of dissent up here, along with Mr. Gunter, in the use  
22 of PRAs to try to model reality.

23 Public citizens views this as just another in the  
24 de-regulatory effort that has seen, you know, as basically  
25 burden reduction over the last several years. They've

1 already seen redirection requirements, marginal-to-safety,  
2 cost-beneficial licensing actions, the use of notices of  
3 enforcement discretion to avoid shutdowns and to allow  
4 re-starts, and the new and improved technical specifications  
5 which wiped out 40 percent of conditions for operation. So  
6 we view this PRA effort as a continuation of what's already  
7 going on.

8           Unfortunately, it appears that this agency and  
9 this industry have reverted through a pre-Three-Mile Island  
10 mind set, where they don't believe an accident is going to  
11 occur. You know, NEI testified before the Senate that the  
12 reason we could do this risk reduction was because you had  
13 improved your safety.

14           Now, I think you've become better at manipulating  
15 your indicators, but we can argue that on into the evening.  
16 The fact that you haven't melted down a reactor in the last  
17 20 years is no reason to scrap the program that achieved  
18 that record.

19           NEI's assumption is based on the specious argument  
20 that, because you haven't had a reactor accident in the last  
21 20 years that you're doing fine. The ACRS, basically,  
22 debunked that several years ago, as Hal Lewis basically  
23 said, "The Soviets thought they had an adequate level of  
24 safety, too." That was prior to Chernobyl, but in  
25 retrospect that wasn't the case. We also liken it to the

1 Challenger explosion.

2           We have several other concerns. We don't believe  
3 you have the design basis to be able to start deregulating  
4 this industry. PRAs are premised upon the fact that each  
5 plant is maintained, constructed and designed in conformance  
6 with its operating license. Basically, this hasn't been the  
7 case.

8           The shutdowns at Millstone, Haddam Neck, Maine  
9 Yankee are all examples of that fallacy. The fact that the  
10 emergency core cooling system at Haddam Neck wouldn't have  
11 operated for its 28 years of operation, I think, is  
12 indicative of the problem that industry faces with  
13 probabilistic risk assessment.

14           There's also the problem that you're throwing  
15 around numbers that have really no basis in reality. You  
16 know, "one times ten to the negative four," "one in a ten  
17 thousand," "one in a hundred thousand," "one in a million."  
18 There was a slide before the ACRS that had the probability  
19 of one in ten million, and the fact is, you've melted five  
20 reactors here in the states, three test reactors, Fermi and  
21 Three-Mile Island, yet your PRAs don't reflect that reality.

22           So, if you broke it down, instead of taking these  
23 "pie-in-the-sky" numbers, the reality is, you have a core  
24 damage frequency of two - even excluding the test reactors -  
25 you have a core damage frequency of 2-in-2,500 reactor

1 years. Yet we toss around numbers of 1-in-10,000;  
2 1-in-a-million.

3 The final problem I have, although I'm sure more  
4 will arise as I get more into this, is that I've already  
5 seen how NRC intends to apply probabilistic risk assessment.  
6 I know that there are people in the ACRS and on this staff  
7 that thoroughly disagree with how the agency handled the  
8 Farley decision on the steam generators.

9 There were three analyses done that would allow  
10 Farley to basically avoid doing the steam generator tube  
11 inspection and operate to the end of the cycle.

12 The first one said - it was purely deterministic.  
13 It said, "inspect." The second was a mixture of PRA and  
14 deterministic. That said "inspect." The third said - was  
15 totally probabilistic and said, "Okay, operate."

16 NRC staff testified before the ACRS that their  
17 PRAs were not good enough to allow them to make these type  
18 of judgments, yet the NRC did just precisely that. Farley  
19 now is basically gambling. They're gambling you're not  
20 going to have a steam-generated tube rupture, you're  
21 gambling that rupture won't deplete the inventory and melt  
22 down the core.

23 Dana Powers from the ACRS stated that this is all  
24 "regulation by-religion" and basically said, you don't have  
25 a defensible basis for what you're doing. Yet, the NRC is

1 allowing Farley to basically forego steam-generated tube  
2 inspections and run to cycle.

3 It's a good test. We have, what? Another year,  
4 about, to go to see whether or not they melted down. I  
5 don't think you should be gambling with the public health  
6 and safety at this point; and I agree that your PRAs need to  
7 be more rigorous if you're going to be using them. I just  
8 disagree with how they've been applied so far.

9 CHAIRMAN MESERVE: If there were PRAs that were  
10 rigorous, would you agree it would be appropriate to go  
11 forward in a risk-informed approach?

12 MR. RICCIO: I think you need to make sure that  
13 your design base is in place; and unfortunately, I don't  
14 believe that 50.54(f) letter did the job.

15 I think the recent experience at Indian Point was  
16 another example of a design-basis problem. So you had - in  
17 the wake of the Millstone shutdowns and Haddam Neck and  
18 Maine Yankee shutdowns, the NRC issued the 50.54(f) letter  
19 which basically said, "Require the utilities to say, though  
20 shall have a program in place to deal with design-basis."

21 I'm sure Indian Point forwarded that letter along  
22 to y'all and said, "Yeah, we've got a program in place," but  
23 I believe your AIT exemplifies the fact that you had a  
24 design-basis problem there that wasn't ferreted out by the  
25 utility. I think as we continue to see more operational

1 transients, I think more problems to the design-basis will  
2 continue to be demonstrated down the road.

3 So, I believe risk insights are appropriate. I  
4 believe the agency has applied them well in the past in  
5 things like ATWS and station blackout. But, at this point,  
6 that seems like ancient history. I've seen nothing in the  
7 last five years that would tell me that the sword is going  
8 to be cut in both directions.

9 Mr. Chairman, your predecessor, Chairman Jackson,  
10 basically said "This risk-informed program is going to be a  
11 double-edged sword. It will cut in both directions. If we  
12 find things that are significant that aren't being  
13 addressed, we'll address them."

14 Unfortunately, all I'm seeing is it cutting in the  
15 direction of reducing a regulatory burden, a burden that I  
16 eventually have to pay. So I'm wondering why we're so  
17 concerned with reducing the burden, and we pay your  
18 electricity bills. That's where it's coming from.

19 I understand your competitiveness; and I  
20 understand too that - I don't doubt for a minute that this  
21 industry is going to have trouble competing in a  
22 de-regulated electricity marketplace. I'm not sure it can  
23 survive, but I know it can't survive another meltdown.

24 Unfortunately, I think, if we continue in this  
25 direction, we're going to have another.

1           COMMISSIONER DICUS:  If I could follow just  
2 briefly on the chairman's question and your comment.

3           If you felt that we did have the type of design  
4 basis information that we need, together with the PRAs that  
5 are realistic, would you have a comfort level there to go to  
6 the risk-informed where we are, or is there something else?

7           MR. RICCIO:  I think we're so far from that point.  
8 Yes, you know, at some point - and it doesn't really matter  
9 if I like it or not, you're headed in that direction.  I see  
10 it.

11           COMMISSIONER DICUS:  We want to be sure we're  
12 going appropriately.

13           MR. RICCIO:  I think you've got the cart before  
14 the horse right now.  You know, Commissioner - sorry, former  
15 Commissioner Ahearne, has pointed out your PRAs are rigorous  
16 enough to be doing what you're doing.

17           I've pointed out in one of my reports that your  
18 design basis isn't up to snuff; and actually, if you don't  
19 want to believe my report, go back and read the AEOD's  
20 report on undiscovered safety system failures, basically, we  
21 come to the same conclusions.

22           So, I think we have a long way to go before you  
23 can actually be applying these risk or PRA standards to this  
24 industry.

25           CHAIRMAN MESERVE:  Okay.  Paul Gunter and then Joe

1 Colvin, then Ed McGaffigan.

2 MR. GUNTER: Thank you. Mr. Chairman, I'd like to  
3 address your question, as well as Commissioner Diaz'  
4 question with regard to robust PRAs. I'd like to put it in  
5 the context of something I think would be understandable to  
6 all of us, is that, I don't think it's an all or nothing  
7 venture as Commissioner Diaz has expressed.

8 I think that would be - it would be a little like  
9 moving into a risk-informed traffic regulation. I don't  
10 think that any of us would share a confidence out on the  
11 road, if in fact we didn't have strong prescriptive  
12 regulations in effect that are being effectively policed,  
13 enforced, and violators are being taken into court.

14 The public confidence level, right now, in the  
15 Nuclear Regulatory Commission's ability to be the cop on the  
16 beat, and to be the enforcer, and to affect meaningful  
17 enforcement in violations. That's what's at a low right  
18 now.

19 So, in fact, our view of the introduction of  
20 risk-informed regulation really appears more in the context  
21 of a trend towards more self-regulation by the industry. I  
22 think that's what we have to - that's a major hurdle that we  
23 have to get over in terms of addressing any shift; and  
24 frankly, I think that we have no shift until there is a  
25 demonstrated step-up in enforcement activity.

1           As one of my colleagues put it, there are a lot of  
2 lumps under the carpets still where, you know, the industry  
3 in its move to a risk-informed climate will have to make a  
4 lot of assumptions for – and take credit for things that all  
5 of us know are not there.

6           Jim mentioned the design-basis issue and the  
7 outstanding RAIs on compliance. But there are a whole host  
8 of issues, not only in terms of design oversight, but  
9 age-related degradation.

10           For example, there's a big uncertainty where  
11 industry's taking a lot of credit right now for some very  
12 gray areas that we don't really know. As a matter of fact,  
13 we'd like to see stronger enforcement from the Nuclear  
14 Regulatory Commission in policing some of the data gathering  
15 in regard to just trying to track age-related degradation  
16 growth rates, or embrittlement rates.

17           But, there is a lot of ground that has to be  
18 covered before we can move to this risk-informed climate.  
19 But, frankly, what we see is an effort that's being  
20 economically driven. That's precisely the wrong reason at  
21 the wrong time for an aging industry.

22           CHAIRMAN MESERVE: Joe?

23           MR. COLVIN: Thank you, Mr. Chairman.

24           I wanted to go back to the issue – we were talking  
25 about a PRA for a minute. I probably have some comments on

1 some other points that were made, but I'll save those until  
2 later. I want to go back to the point that we're talking  
3 about.

4 I think we need to keep in mind that we have  
5 risk-informed the maintenance rule. We have published - the  
6 Commission has published Appendix J. We have set out a new  
7 reactor oversight process that's being piloted, set up a  
8 significance determination process to look at the risk from  
9 those issues; and we've done that without using all these  
10 enhanced PRAs, we've done it using risk insights; and we've  
11 done it using the best available technology and  
12 understanding.

13 I think as we go forth - and I agree with  
14 everything that John Ahearne says - I always agree with  
15 everything that John Ahearne says.

16 [Laughter.]

17 MR. COLVIN: But --

18 MR. AHEARNE: I'll have to re-think that.

19 [Laughter.]

20 MR. COLVIN: I think there is a real important  
21 distinction between risk-informed - at least in my thinking  
22 - than in risk-based; and if we're really going to go and  
23 make some of the transitions that we likely need to make,  
24 we're going to have to put a lot of effort into PRA and PSA  
25 technology.

1           So, I think one of the things, as we go forth in  
2 this process of deciding what we ought to look at from  
3 risk-informing, we ought to make a decision as to what tools  
4 are necessary to make that transition. I think in some  
5 cases, it may be that you need a very - more rigorous PRA  
6 from all the plants that are going to participate.

7           We may find that's not always the case. I think  
8 there's a balance that we have to look at; and perhaps as we  
9 go forward, we'll be able to keep that in perspective.

10           CHAIRMAN MESERVE: Commissioner McGaha.

11           MR. MCGAHA: Partly in response to Mr. Riccio, I  
12 can assure you that we do believe that accidents can still  
13 occur. Mr. Colvin just mentioned the 5065(a)(4) rulemaking,  
14 which has to do with configuration control during - I think  
15 our main concern was a large amount of additional on-line  
16 maintenance that's occurring and the need for configuration  
17 control. That rule is going to go into effect once we  
18 finish the reg guide.

19           It is a success story, as Mr. Colvin said, in that  
20 we were able to get a reg guide that I think does the trick,  
21 and will provide an enforcement tool that Mr. Gunter seems  
22 interested in. Should somebody put themselves in a very  
23 dangerous configuration, for whatever reason - we don't  
24 think that's going to happen. We do think that the data on  
25 the industry, that they're generally performing better, is

1 accurate. If it isn't, we will have that long conversation  
2 some day.

3 Another example - and this goes back to Mr.  
4 McGaha's comments. He raised concerns about SECY 99-246.  
5 That is the paper that says it will cut both ways. That is  
6 the paper that - and we had an experience with Callaway its  
7 proposed use of new technology for Emma Tome  
8 Electro-sleeving technology where the staff saw the  
9 potential for an accident outside of the design basis in the  
10 severe accident regime that had to be understood before that  
11 amendment could be granted.

12 It's a tentative amendment for a couple years,  
13 mostly having to do with our ability to inspect, after the  
14 fact, whether the tube repair has been made. Whether we can  
15 see cracked growth behind the repair. But it was very  
16 carefully - as I'm sure Mr. - I forget his name - from  
17 Callaway would tell you, overly looked at. But I think it's  
18 part of our program at the moment.

19 If we get risk insights, safe from working with  
20 South Texas. One of the guys has invested a vast amount of  
21 money. We get risk insights there and they turn out to be  
22 relevant somewhere else, to the degree that it's a safety  
23 issue, we should apply them.

24 Now, that shouldn't happen too often. As you  
25 said, Mr. McGaha, that the deterministic framework has

1 served us well for many years, it probably doesn't have too  
2 many gaps in it, but it has some. When South Texas did its  
3 - was involved in some of the PRA programs, they discovered  
4 that there was safety equipment that shouldn't be safety  
5 equipment; but they found a bunch of stuff that the old  
6 design-basis deterministic framework said was trivial that  
7 wasn't, that was making contributions.

8 So they said let's upgrade our inspection in  
9 looking at these system, structures and components, while we  
10 downgrade the others. It was cost beneficial because there  
11 were far more that were being downgraded than the few that  
12 would be upgraded. But there is a quality PRA, and we - I  
13 think we end up with more safety.

14 The other comment I would make to Mr. McGaha is  
15 that I too want to avoid the lowest common denominator. I  
16 do - for those folks who really do have quality PRAs, I  
17 don't want them to be held back by everybody else who is  
18 going to be a while getting there.

19 So I think it's fair for us to invest, even if  
20 it's - I think it's fair and just for us to invest in those  
21 places who are able to meet us halfway today, or more than  
22 halfway today. If they see cost benefit, then maybe the  
23 others will come along.

24 I do not regard this as a universal - this will  
25 never be universal. The folks that were going to close

1 their plants down in five or ten years because they don't  
2 see license renewal as an option for them, they're not going  
3 to make big investments.

4 But for plants that are going through license  
5 renewal, I'll make a bet, if we do it right, there will be a  
6 lot more South Texas's and Arkansas Nuclear 1's than there  
7 will be folks who choose not to make the transition.

8 CHAIRMAN MESERVE: Anyone, who hasn't had a chance  
9 - yes, John Ferguson.

10 MR. FERGUSON: Yes, the discussions are very  
11 interesting, and of course, the ASME is working on a  
12 standard to provide the criteria for the PRAs, to give them  
13 a much firmer bases. We're working through that. We expect  
14 that to be done by about the end of 2000.

15 But, again, we won't finish until it's right.  
16 That's one of the things at the ASME. We will take our time  
17 to make sure that we get it - so that it does the job for  
18 everybody.

19 One of the things I mentioned is that we've been  
20 working on ISI and IST. Some people have mentioned it here.  
21 It has helped the ASME when we worked on this to do some  
22 studies, first, to see that the concept works. Of course,  
23 we did that in 1985.

24 That did help us; and then the pilot programs  
25 helped us as well. Then, of course, with the in-service

1 inspections and in-service testing, we went out and created  
2 some code cases so people could try them. The feedback that  
3 we get from our membership is that the sword does cut both  
4 ways. I mean, you can't do that type of thinking without  
5 actually doing some increasing in requirements.

6 I mean, if you think outside the box, and you  
7 think that in a larger sense you clearly do have some  
8 increases, but you have significant decreases. For  
9 instance, in one of the wells that we were inspecting very  
10 frequently, 25 percent of the BJ Wells We determined that  
11 there really was no benefit to that, and the PRA analysis  
12 and the results told us that.

13 That's the thing that we did learn with the PRA  
14 analysis. You need to look at the PRA insight, and then you  
15 need to look at what your experts tell you and the people  
16 operating on the equipment, so you get the insights of both,  
17 a blended review of how the equipment is performing.

18 So, when we looked at it in terms of ISI and IST,  
19 which was our first two major efforts. We did the studies,  
20 first. We looked at the concept, then we did the pilot  
21 plant programs and tried out the concept, then we wrote the  
22 code cases for them to go out to the industry and try. That  
23 has worked very well for us to go through a logical sequence  
24 of working our way through the program.

25 On the PRA standard, as I mentioned earlier,

1 that's not business as usual for us. The consensus process  
2 is business as usual for us, and we use that very well.  
3 But, again, we had to bring in different types of expertise  
4 to make sure, as Commissioner Diaz said, we have the  
5 practitioners - and we've done that.

6 But we have - and the consensus process is being  
7 put to the test to come back with the standard that looks at  
8 everybody's views, the ones that want to use existing PRAs  
9 and the other end of the spectrum that says there should be  
10 many "shalls" in the PRAs.

11 What we're doing is developing different levels of  
12 the PRAs so that you can determine what level you need to  
13 use for what credibility in terms of your programs.

14 Thank you.

15 MR. SETSER: I'm not going to presume to have the  
16 depth of expertise and the knowledge of the specifics of the  
17 regulatory profession that NRC has to exercise in doing what  
18 it does. Let me share with you something that is a  
19 perspective from a broader viewpoint.

20 What we're experiencing in the nuclear regulatory  
21 profession is really no different than what many other  
22 regulatory agencies and other professions are experiencing  
23 today. As a result of a worldwide movement to more  
24 effective affect results, lower costs and an increased level  
25 of confidence in people that government is meeting its

1 needs.

2           Several driving forces are moving us toward  
3 risk-based decisionmaking, risk communication, and  
4 performance that relates to results. So, what's going on  
5 here is really no different, from a process standpoint, than  
6 what is really going on either within individual, large  
7 industries, within large federation or frameworks of  
8 individuals or industries, and the fact that it's hit at the  
9 government level, and at the regulatory level is more of a  
10 bitter pill for us to swallow.

11           Because, I've served as senior policy advisor to  
12 five governors in Georgia. That's sort of easy to do  
13 because every time a new governor comes in, the same issues  
14 come up and so I already know the answers.

15           [Laughter.]

16           MR. SETSER: But, one of these times when I retire  
17 I'm going to write a book called "The 27 Reasons Why You  
18 Can't Do Something," and everyone has a view point as to why  
19 you can't do that.

20           But, the way the world is moving, we're moving  
21 toward risk-based decisionmaking and results based on  
22 performance. I don't think there's anyway we're going to  
23 get away from that, whether we participate, like it or don't  
24 like it, it's going to go on with or without us. That's the  
25 way things are moving.

1           Now, having said that, it's a very complex  
2 process. It involves cultural change; and cultural change  
3 among us old scientists and engineers is one of the hardest  
4 things in the world to achieve, because we don't go down  
5 easy.

6           This cultural change movement, particularly in a  
7 regulatory program, as it's occurring in the environmental  
8 field that I represent is a - sort of a five-to-fifteen year  
9 process. Let me point out some specific concerns.

10           Number one, if you move too far too fast and you  
11 allow expectations to be developed within the regulatory  
12 community that you're not already established to fulfill, it  
13 leads to a chaotic situation and you're always running to  
14 catch up, and you're always behind. It's a very difficult  
15 process. Costs go up. Support goes down and a lot of other  
16 factors come into play that stalls it and drags it out for a  
17 long period of time.

18           The second thing is, the public confidence issue  
19 brings into bear a lot more than good science. We have to  
20 make our decisions based on good science, but that's not the  
21 only standard and the only parameter for what we have to  
22 achieve.

23           Because the issue is, how you're communicating  
24 risk to the public, and whether or not they're going to  
25 accept it, and whether or not they support it. So all that

1 we do when we move forward with this cultural change is to  
2 look at what the impact is going to be on public confidence.

3 So, I submit to you that there's a lot of work to  
4 be done, and a lot of major challenges. There are a lot of  
5 things that you don't know, because you're moving from an  
6 area where you know what has to be done, you know how to do  
7 it, you know what size the playing field is, and you know  
8 what being in any position on the field is going to cost,  
9 and you're moving into an area where you don't know how big  
10 the field is, you don't quite know how to do it, and you're  
11 not really sure you want to be there.

12 But that's the nature of cultural change. If you  
13 accept the fact you're going to have to be there, then we  
14 have to work together in a win-win situation to marry the  
15 viewpoints together, to put in place the very detailed, the  
16 very complex issues that we have to handle, and solutions to  
17 those issues.

18 It's not going to be easy, and some of us are  
19 going to be fishing full time before we're through and see  
20 these issues resolved.

21 So, I'm not uncomfortable with moving toward this,  
22 but I also know that the industry that I've talked to, that  
23 we represent, would like to see some definitive language as  
24 to where we're going. That's part of the comfort zone. But  
25 that doesn't mean they'll support it. It just means there's

1 a lot of work to do, and there's a lot of involvement that  
2 has to take place.

3 So, I'm sorry I've taken so much time, but I  
4 wanted to lend that particular perspective to it.

5 CHAIRMAN MESERVE: That's very helpful.

6 Commissioner Merrifield?

7 COMMISSIONER MERRIFIELD: As we move forward on -  
8 if we move forward on the advanced notice for proposed  
9 rulemaking relative to Part 50, I think it's very important  
10 for all the interested parties to be involved in the  
11 foundation of that so we know how to move forward.

12 There are a couple of charges I think that are  
13 important. One, for industry I think, is to really get a  
14 sense of, is there a significant interest in getting  
15 involved in this. If we spend significant staff resources  
16 and down the line there is only a relatively small number of  
17 plants that really utilize this tool, I don't think that  
18 will be successful. So, I think, having some understanding  
19 of where industry is coming from on this I think would be  
20 helpful.

21 From other stakeholders - and Jim Riccio outlined  
22 a number of concerns that he has about going into this, so I  
23 think - you talked about PRA and how they, you know, you  
24 don't believe the current PRAs are robust enough, of how we  
25 have issues associated with the design basis. You believe

1 you have not been sufficiently answered at this point.

2 I think for your involvement, outlining the tools  
3 necessary that you believe are needed for us to make that  
4 successful, if we were to move forward, or to outline where  
5 you think the gaps are in that, I think, would be very  
6 helpful to focus on those areas - if you decide to go that  
7 way.

8 The final comment I want to make - and again this  
9 goes to Mr. Riccio. I agree with former Chairman Jackson on  
10 the issue of it being a double-edged sword. I think - you  
11 know, I'm not aware of any concerted effort on our part to  
12 blunt one edge of that sword and only use the other side.  
13 We don't need to get into those issues, perhaps, today  
14 because it's not relative to the general direction that the  
15 chairman wants the meeting to go; but I think it would be  
16 useful for a dialogue with our staff to see that.

17 I think there may be some disagreement with our  
18 folks that we are taking that approach. Certainly, I think  
19 we need to follow up with you on that to make some  
20 clarification.

21 Thank you.

22 CHAIRMAN MESERVE: Mr. Kingsley?

23 MR. KINGSLEY: If I could just say a word here. I  
24 clearly support the gentleman from the state of Georgia,  
25 that I think that this is necessity. We fully support it,

1 for Commonwealth Edison to move into more of a risk-based  
2 regulation. But we see a very strong need for clear  
3 definition. We do not have that; and there are some five or  
4 six key areas.

5 I also agree with some of our conscious here, I'll  
6 say, that there are certain fundamentals - and I'm going to  
7 speak about that when I talk about the new oversight process  
8 that has to be in place, also. So I don't disagree with  
9 some of that. But we need good, clear definition.

10 Then, with this road map, we can determine from a  
11 cost-benefit basis of, can we spend enough money? Are we  
12 going to get the right outcome? But that is still very  
13 unclear, as Mr. McGaha said. But we are committed to make  
14 this work.

15 I think it's going to require a lot of  
16 communication, a lot of dialogue, and a good clear road map.

17 Thank you.

18 CHAIRMAN MESERVE: Mr. McGaha?

19 MR. McGAHA: I just have one last comment. I think  
20 the last four people said it in one form or another: The  
21 uncertainty that I alluded to earlier was not really  
22 prescriptive versus non-prescriptive type of uncertainty.  
23 It's uncertainty about, what is our road map? What are the  
24 rules? What are the standards that we're all going to live  
25 by? Is this going to be a risk-informed approach with real

1 rigorous PRA, or is this going to be another approach?

2 And, we need to be selective and smart about what  
3 targets we're going after. If we don't do that, it's going  
4 to be had to get the industry totally on board, unless they  
5 can see the clear path; and I think if we can do that, I  
6 think that would address your comment, Commissioner  
7 Merrifield.

8 CHAIRMAN MESERVE: John Ahearne.

9 MR. AHEARNE: This is a comment because I didn't  
10 want to disappoint Commissioner Merrifield.

11 What you're talking about is a program that's very  
12 difficult, complex, will take several - many years. These  
13 are characteristics of our research program. You  
14 understand.

15 MR. KINGSLEY: Oh, I understand.

16 [Laughter.]

17 MR. AHEARNE: The NRC's research program is  
18 disappearing. Jim Riccio said that he thought that perhaps  
19 it was a edict growing that accidents couldn't happen.  
20 There certainly seems to be an attitude growing, and perhaps  
21 it's in the Congress more than in the Commission, that you  
22 don't need research - and you really do.

23 COMMISSIONER MERRIFIELD: Mr. Chairman, I'm sorry,  
24 I need to --

25 [Laughter.]

1           COMMISSIONER MERRIFIELD: Just so it's clear,  
2 because as a former chairman, I've had some discussion about  
3 this issue, and I've made some comments about research,  
4 recently, that have been misinterpreted.

5           I am, as I think are all five members of this  
6 Commission, a strong supporter of research; and there are  
7 indeed - no, let me finish - and there are indeed some  
8 outside of this Commission, who are not as robust supporters  
9 of the efforts that we have here at this agency.

10           I don't think at this point our research efforts  
11 are disappearing, I don't think there's anyone on this  
12 Commission that's strongly urging that we have a significant  
13 decrease in the amount of research that we have.

14           What I have said on many occasions is that, we as  
15 an agency need to clearly articulate why we are doing  
16 research, and why it is important, and demonstrate to  
17 Congress that the money we ask for is deserved. If we can  
18 articulate that, we will get what we ask for.

19           CHAIRMAN MESERVE: We are starting now to move a  
20 little bit off our topic.

21           [Laughter.]

22           CHAIRMAN MESERVE: Let me suggest - we have two  
23 other areas that we need to cover. This discussion we've  
24 had this morning is clearly a part of a much longer dialogue  
25 that we're going to have to have everyone at this table and

1 with many others, that this is a very challenging enterprise  
2 that we have started on.

3 What I would like to suggest is that we take a  
4 very short break, everyone stretch their legs, come back in  
5 five minutes and we will then turn to the oversight program.

6 Thank you.

7 [Break.]

8 CHAIRMAN MESERVE: We're now going to turn to the  
9 second of the three items that we hope to discuss this  
10 morning; and that is the discussion on the revised oversight  
11 program.

12 Bill Travers is going to give us a capsuled  
13 summary of the Commission's efforts in that area.

14 MR. TRAVERS: Thank you, Mr. Chairman.

15 I may have the easiest job, given the extent of  
16 the discourse that we've all had, and many of us have had,  
17 on the oversight program. But, let me tell you a little bit  
18 about where we've been, where we are today; and where we see  
19 our work in the oversight process development going.

20 Certainly, of the many regulatory initiatives that  
21 are underway at the NRC, none have had a greater visibility  
22 or greater priority than have our efforts to develop a  
23 revised reactor oversight process. And the reactor  
24 oversight process includes the NRC assessment of power  
25 reactors, our performance, our inspection program,

1 enforcement program and reporting requirements.

2 We've actually been working for several years to  
3 improve our existing program, such as the systematic  
4 assessment of licensee performance, and the senior  
5 management meeting process. Although these existing  
6 programs have been important contributors to our regulatory  
7 mission over the years, there has been a recognition, and  
8 there had been a recognition - both from within and without  
9 the agency - that they were not always focused on the most  
10 safety-significant issues, that they were subjective, and  
11 that they often resulted in NRC actions that were neither  
12 scrutable, nor predictable.

13 The fact that these types of concerns were  
14 expressed from a broad range of stakeholders, including  
15 licensees and public interest groups, really resonated  
16 within the agency, and provided an impetus for much of our  
17 activity to develop a revised process.

18 Early in 1999, in response to Commission  
19 direction, the staff proposed a revision to the reactor  
20 oversight process. The objectives of the revised oversight  
21 process were to develop a new process that was more  
22 objective, predictable, scrutable and risk-informed.

23 In this regard, the features of the new process  
24 that we've been talking about for the last year or so,  
25 include a risk-informed baseline inspection, which would be

1 conducted at all sites; a set of quantitative plant  
2 performance indicators; and an assessment of performance  
3 based on both the performance indicators and the inspection  
4 program; a methodology, including safety performance  
5 thresholds to establish staff actions to address declines in  
6 licensee performance; and an integrated enforcement approach  
7 focused on risk-significant issues.

8 Certainly a hallmark of our proposal and all our  
9 efforts to date has been the cooperative approach that we've  
10 been using to include external and even internal  
11 stakeholders here. I think it's fair to say that the extent  
12 of external stakeholder support and participation has been  
13 unprecedented, and external stakeholders have certainly made  
14 significant contributions all along the way.

15 Following Commission approval and beginning in  
16 June of 1999, the new oversight process was recently tested  
17 at 13 plants through a pilot program. The pilot program  
18 formally ended on November 30 of this year, and we are  
19 developing a lessons learned report.

20 Again, we're using a number of strategies to  
21 ensure that we have full participation by all of our  
22 external stakeholders. Most notably, the pilot plant  
23 evaluation panel was established, consisting of  
24 representatives from the state of Illinois, the Nuclear  
25 Energy Institute, the Union of Concerned Scientists, Nuclear

1 Utilities and the NRC staff.

2 The panel has met periodically and evaluated the  
3 findings from the pilot program, and has provided feedback  
4 to the staff on the efficacy of the revised, oversight  
5 process.

6 In fact, as I understand it, there is a draft,  
7 final report and a final report is expected to be sent to  
8 Sam Collins within the next week or so.

9 In addition to the work of the panel, I should  
10 also note that INPO has been involved in helping to devise  
11 standards that define an effective, corrective action  
12 program; and certainly the importance of an effective,  
13 corrective action program is emphasized within the new  
14 program.

15 Generally, though, the feedback that the staff has  
16 received from its stakeholders has been positive. As would  
17 be expected in any pilot program, there have been issues and  
18 a few of those include questions about establishing the  
19 appropriate thresholds.

20 For example, for performance indicators, including  
21 the security performance indicator, the RCS leakage  
22 performance indicator, questions about the timing of the  
23 submittal of PI data and the treatment by the agency of  
24 instances where the data might not be either complete or  
25 accurate.

1           There have been questions about capturing and how  
2 we might capture and report qualitative insights in our  
3 inspection programs - and this has been on both sides, both  
4 from external stakeholders and the NRC staff. So we're  
5 evaluating that issue and others, as well; including, for  
6 example, areas of the significance determination process  
7 that needs to be further developed, such as, significance  
8 determination process and how it would be applied to shut  
9 down and the containment performance are as well.

10           Some of these issues, in fact, may require  
11 resolution prior to initial implementation of the oversight  
12 process expected, if the Commission agrees, in April of  
13 2000.

14           To address these, the staff has scheduled a public  
15 workshop for the week of January 10, 2000 and we expect to  
16 do a lot of work to identify which issues, prior to our  
17 submission of a Commission paper, which issues we think need  
18 to be resolved, prior to possible full implementation, and  
19 which can await further resolution, or further consideration  
20 in an implementation phase.

21           Our current schedule is to provide the Commission,  
22 by mid-February, with a proposal, with a Commission paper  
23 that addresses a recommendation for moving ahead with what  
24 we have been lately calling "initial, full implementation"  
25 across the industry of a new program. If the Commission

1 approves, initial implementation could begin on or about  
2 April 2000.

3 An initial implementation phase of about one year,  
4 we believe, would allow industry-wide experience to be  
5 assessed and forwarded to the Commission, such that within  
6 that year we might consider some additional recommended  
7 changes in the program, with the benefit of the greater  
8 experience.

9 One thing I haven't mentioned at length has been  
10 our recognition of the need to involve NRC stakeholders in  
11 this work. It's absolutely critical in the development of a  
12 new program the scope of this one, that we not only include  
13 internal stakeholders in the development and trial of a  
14 program of this sort, but we fully integrate them into the  
15 assessment of them. We believe we're doing it.

16 It's the sort of communication we've been talking  
17 about over the years - over the last year and a half or so.  
18 We view it as absolutely critical. Perhaps the most recent  
19 indicator of what we're doing involves a questionnaire  
20 that's been sent to all of the participants who have -  
21 internal participants who have participated in the pilot  
22 program thus far, so we can be sure to get the benefit of  
23 the experience of the inspectors and regional managers and  
24 NRC headquarters' people who have participated thus far.

25 It is clearly a challenge, one that we recognize

1 as a continuing one, one we expect to meet; and we think  
2 we're in a good position that we currently have for  
3 providing the Commission with a recommendation by  
4 mid-February. It's been very much a collective effort that  
5 spanned a lot of organizations that are here today, and we  
6 certainly appreciate the efforts that have been put forward.  
7 I think it's a good model for the way this sort of  
8 wide-sweeping program with such broad implications really  
9 needs to be developed.

10 So, I want to express appreciation to all of those  
11 who participated in it.

12 CHAIRMAN MESERVE: Thank you, Bill.

13 This is obviously a work very much in progress.  
14 Let me turn now to Mr. Kingsley, who has had plants that  
15 were involved in the pilot program.

16 I wonder if he'd be prepared to share his views  
17 with us?

18 MR. KINGSLEY: Certainly.

19 Thank you very much, Chairman Meserve. I'd first  
20 like to start off and give a quick assessment, then follow  
21 that with some remarks on how I see this process working.  
22 Some of that EDO has already touched upon, but let me add to  
23 that.

24 First of all, an assessment. Overall, I believe  
25 that the pilot program has been effective in achieving its

1 goals. We've learned a lot - and I'll talk about that in a  
2 few minutes. I am confident that this new oversight  
3 process, if effectively implemented - if effectively  
4 implemented - will achieve the Commission's goals of  
5 improved reactor safety dealing with objective performance  
6 indicators.

7           The new process does provide more objective  
8 evidence, no question about it. It's tied to absolute  
9 measures of safety performance. The SDP, safety  
10 significance determination process is an excellent tool, if  
11 used properly. We've seen the results of that at our ComEd  
12 plants.

13           It does provide a clearer picture of performance  
14 indicators of industry performance and plant performance.  
15 It does not provide a total picture, and it does provide  
16 stakeholders with real-time information with some aspects of  
17 plant performance.

18           Now let me shift into what I call "essentials" for  
19 this new oversight process to work, effectively; and I lead  
20 off with something that I firmly believe in, that all  
21 required standards, programs, processes - whether they be  
22 designed basis, et cetera.

23           Any of the essential rules that we have built up  
24 over the years, which have proven themselves, required  
25 training, et cetera - and I could talk hours about that -

1 must be in place. The licensees must clearly understand  
2 where their facilities are with respect to these standards,  
3 programs, processes, et cetera.

4 I call this a fundamental base that has to be in  
5 place. It's the licensee's responsibility to ensure that  
6 base is fully in place.

7 The second element is building from that base.  
8 You have to have a corrective action program, self  
9 assessment and oversight process. I say, again, it builds  
10 off of that base.

11 This new process would not have worked at the  
12 ComEd facilities two years ago. It would not have worked.  
13 We are now at a level of significant improvement that we  
14 have been able to make in our nuclear program that I believe  
15 it will work, but we had significant gaps in a number of  
16 essential fundamentals that were not in place. So, a good  
17 corrective action program has to have these fundamentals to  
18 build upon.

19 A third essential element is that there has to be  
20 careful evaluation of the performance indicator data.  
21 What's this data telling us? That licensees must not manage  
22 through these performance indicators, alone. We cannot take  
23 - if everything is green, and I've got every ComEd plant  
24 mapped out here. We cannot manage just to these performance  
25 indicators, but we have to look at what's behind them,

1 what's driving them.

2 As an example, we've had a diesel generator that  
3 for the third time on our Byron Plant, as of last night, did  
4 not come up to speed properly. I don't know what that will  
5 do with the indicator, but there's certainly a problem with  
6 having that diesel operate properly; so then we have to act  
7 on that, but no matter what the indicator is, we're on an  
8 LCO in a shut down with that.

9 We have to do a point-by-point analysis and  
10 actually fix the problem; and you have to have this mind set  
11 that goes throughout the facility in order to operate  
12 properly.

13 The last item that I say must be in place, is that  
14 we must have proper response to NRC inspections - proper  
15 response; and this is both the base inspections that the  
16 residents provide and any special inspections, whether they  
17 be pre-planned or in response to an event, or in response to  
18 performance indicator data.

19 We have to listen to what some of the insights  
20 are. I found this extremely healthy over the years, to  
21 listen. What's the NRC saying?

22 We've had, for example, a very effective NRC  
23 inspection that was done on our property concerning  
24 configuration control and proper plant alignments, and there  
25 were some very keen insights, which were very helpful to us

1 at making further improvement. Because we have had  
2 difficulty establishing proper configuration control on some  
3 of our essential systems.

4 We have not had any safety issues, but that's been  
5 a continuing issue that we have worked very hard to make  
6 improvement. We have improved, but we're not there yet.

7 Coupled with these four elements, there has to be  
8 going forward senior management by both the utility and the  
9 NRC to make this process work. There has to be a clear  
10 understanding by our employees and the Nuclear Regulatory  
11 Commission employees about this process, how it's going to  
12 work, a change management that I heard Mr. Travers speak  
13 about. It's got to be focused upon.

14 We've got to focus on buy-in. There's still not  
15 total buy-in on the utility side. There's still not total  
16 buy-in by the NRC inspectors. I have talked to a number of  
17 NRC inspectors and there is genuine concern about issues.  
18 Whereas, there had been inspections in the past, that we  
19 back off out of that. Then, for some reason we have some  
20 event or find something. We dig deeper and there are more  
21 issues there.

22 So we have to do a great deal of work to  
23 institutionalize this and make it work; and it's going to  
24 take some time. It's going to take a very active process  
25 and one that we do not just let languish.

1           We got a - I think - bad start on the maintenance  
2 rule when we put it in. So we cannot let that happen again.  
3 We've come too far in this process. We need frequent,  
4 candid, two-way dialogue at the plant and senior management  
5 level - frequent dialogue. How is it working? I cannot say  
6 that any more clearly.

7           This pilot program has taught us a great deal. I  
8 won't go into all of the items, but improved performance  
9 indicator reporting, we've had issues at Quad cities with  
10 this, as all of you probably know. Some of them report now,  
11 resolve issues later, as a better approach.

12           We found issues with rigor. We found issues with  
13 training of data stewards. We have just completed a reactor  
14 nuclear oversight process on just the performance  
15 indicators; and we've found, and we've been started shortly  
16 after Quad Cities on our other four stations, about  
17 gathering data, ensuring we can report. We've been  
18 reporting up through our nuclear board committee what these  
19 indicators are, already presenting them.

20           We've had a detailed presentation on what they  
21 are. As we speak, we have problems on performance  
22 indicators, getting the right data, ensuring the right rigor  
23 at our other four stations. So we've got work to do. We've  
24 got work to do there.

25           We have also found that this process is served to

1 validate, sharpen, some of our assessment process and our  
2 oversight process. Because for every inspection we have  
3 required that our line management certify that we're ready  
4 for an inspection; and then that our oversight organization  
5 come in and validate that we're ready. We've gotten a great  
6 deal out of that, and we've found some significant tweaking  
7 that we need to do in both the self assessment and in our  
8 oversight process.

9 But generally our self-assessment, oversight  
10 process has pretty much fell in line with NRC inspection  
11 results. Some very good examples, we had a performance  
12 indicator in security that turned white out at Quad Cities.  
13 We acted upon that, and our action was very similar to what  
14 the NRC inspection told us, and we did need to make  
15 improvements.

16 So there's a very good tangible example of having  
17 a performance indicator, having an inspection, having  
18 self-assessment, and having something good come out of it  
19 that actually improved protection of a facility.

20 We need to act upon what this pilot program has  
21 taught us - the lessons learned, but we need to resolve what  
22 items we are going to act on, and which ones we're going to  
23 push down the road - and we need to do that promptly.

24 There are some open items. Mr. Travers spoke  
25 about that. There are some open issues with enforcement

1 policy, guidance on that; there's a genuine concern on the  
2 utilities part. If they really go out - and I'm talking  
3 once we go live here, and they try and they get every piece  
4 of data and there's no intent that they'll come under  
5 enforcement action with that. So we need to resolve that  
6 issue.

7 I think we can definitely move past that. We  
8 certainly understand that NRC needs good, accurate  
9 information to act upon, too. So it's a two-sided coin  
10 here, too. We can't have our cake and eat it, too. So it  
11 has to be - the onus is back on us to report accurately; and  
12 there's more work to do.

13 Now we do have some work in the safety  
14 significance determination process. We have equity here.  
15 There are a few items that still have to be resolved. We  
16 need to continue to work on a change process. I think we're  
17 into our fourth or fifth revision on some of the guidance on  
18 some of the performance indicators. I believe I'm correct  
19 about that.

20 Maybe there will be a revision D and there will be  
21 a final version put out on that that will actually start out  
22 as Rev 1. So, these are a few things that need to be  
23 changed in the short term.

24 There needs to be - and I talked earlier about a  
25 routine means to assess where are we. Where are we? Sit

1 down. Good open dialogue.

2 In summary here, I'm extremely encouraged. We  
3 have put a great deal of time into this. I think we can  
4 take another step forward. We do have to take the lessons  
5 learned out of the pilot program.

6 When I say "lessons learned," I'm talking the  
7 active involvement we've had with the regional  
8 administrators, with the EDO in working this out, and then  
9 act upon the needed change. We intend on our five stations  
10 to be ready April 20, 2000.

11 Thank you very much.

12 CHAIRMAN MESERVE: Mr. Kingsley, were there any  
13 risk significant issues that were exposed in your  
14 participation in the pilot program that you think you would  
15 not have encountered as early, if you'd gone under the  
16 traditional approach?

17 MR. KINGSLEY: I haven't seen any at my level. We  
18 have used this SDP very effectively on quantifying some  
19 long-standing ComEd issues at Quad Cities, problems with our  
20 RCIC systems, problems with HPCI.

21 We're currently dealing with some issues on some  
22 motor-operated valves. So, we haven't seen anything jump  
23 out at providing something where we needed more attention.  
24 So I worry a little bit about some of that, that we come in  
25 and have the SDP process; and you say, "Well, it's not quite

1 that important," and we do not build in this fundamental  
2 base that I talked about earlier.

3 So, I won't push the other way. We have resolved  
4 a number of kind of long-standing design-basis issues; and I  
5 certainly agree that we need an accurate design-basis,  
6 aggregate configuration control process in place, too.

7 We've had our tech engineer inspections. We have  
8 special engineering inspections. We had a large number of  
9 issues which had to be dealt with prior to re-start on our  
10 Quad Cities units in late May, early June 1998; but I know  
11 of nothing that's just jumped out that we weren't effective  
12 in handling.

13 CHAIRMAN MESERVE: Other comments?

14 Gary Leidich?

15 MR. LEIDICH: Yes, thank you very much, Mr.  
16 Chairman.

17 Just a couple of general comments on the oversight  
18 process, and to some extent, these also apply to the  
19 risk-informed regulation.

20 We're very encouraged by the direction, and I  
21 think as I've listened for the last couple hours, we're  
22 almost all saying we're directionally correct on many of  
23 these issues. The oversight process is currently,  
24 directionally correct.

25 As you know, INPO focuses on operational and

1 safety excellence. What we've seen as the primary enabler  
2 of all these kinds of changes in the regulatory process is  
3 the industry's performance. We've gone through a tremendous  
4 learning curve on performance indicators for INPO. In fact,  
5 that learning curve is continuing more outside the country -  
6 outside the United States.

7 But in looking at those performance indicators  
8 through the third quarter of '99, industry performance  
9 continues to improve. We measure operational aspects,  
10 safety aspects, and no matter how you slice and dice, after  
11 years of looking at those indicators, the industry  
12 performance really supports the kind of changes that are  
13 being made here.

14 Two other points, perhaps more detailed - and Bill  
15 Travers mentioned it. INPO is working on a self-evaluation  
16 and corrective action, principles document, which in fact  
17 will be published within the next week or so.

18 We have a tremendous amount of experience with the  
19 industry on self-evaluation and corrective action programs.  
20 It's been integral to our plan evaluation process all along.  
21 What we're doing is taking that experience, and the best  
22 practices that are represented in the industry, recognizing  
23 that can be an integral part of a successful implementation  
24 of the oversight process, publishing those best practices so  
25 those can be used by the utilities and the rest of the

1 industry as we move forward in recognizing the value of the  
2 self-evaluation corrective action.

3 The final point is on performance indicators.  
4 We're in a learning curve -- I think Oliver mentioned it  
5 well -- performance indicator implementation.

6 Rest assured that in the performance indicators  
7 there were bugs. There are still some minor bugs. But the  
8 overall essence of the issue is that the industry is  
9 improving its performance from an oversight perspective,  
10 utilizing those performance indicators, will be key to your  
11 success.

12 So, as we said over the last couple hours, take  
13 your time, work our way through the program. Get the bugs  
14 out. Get it right. It's pace and quality. It's not  
15 direction; and that will have the biggest impact on our  
16 favorable outcome for the industry. So, we're very  
17 supportive of that.

18 CHAIRMAN MESERVE: Commissioner Dicus.

19 COMMISSIONER DICUS: Thank you.

20 I really want to echo just what you said and  
21 comment a little on Mr. Kingsley's comments on what the  
22 essentials are for going forward. I think in the comments I  
23 made at the INPO, I talked a little bit about the need for  
24 communication, and we need to be very cadence and very  
25 careful as we go forward.

1           It won't necessarily be a "non-bumpy" road, but in  
2 fact, we may find issues that we need to deal with and we  
3 need to be open-minded to deal with those issues and  
4 continue the communication.

5           The comment I really wanted to make - you listed  
6 these essentials for effectively implementing program to  
7 achieve where we want to go. I don't disagree with any of  
8 them, as a matter of fact. I think what I would ask or  
9 where my concern is.

10           Anyone can - INPO, NEI, the stakeholders can jump  
11 in and make comments about this - but do we have, does the  
12 industry have, does the NRC have the processes in place,  
13 programs in place, the wherewithal in place, to effectively  
14 evaluate these essentials so that when we are ready to  
15 really implement this program - whether it's in April of  
16 2000 or later in the summer - that we an effectively  
17 evaluate whether we have plans that are ready or not?

18           I don't mean to put you on the spot, but I think  
19 it's an important element in going forward. Can we make  
20 this evaluation? Prepare to do that, or do we need to work  
21 on that?

22           MR. KINGSLEY: Commissioner Dicus, let me take a  
23 shot at it, from just a comment perspective.

24           We have done a great deal of work in assessing  
25 where we are. We've done it in all engineering areas, which

1 we tie back to all of our regulations. There are a number  
2 of other essential regulations that are outside of this, but  
3 we tend to break it down by the engineer, operations and  
4 maintenance material conditions, and the support categories.

5 I think we at ComEd have a good, clear picture of  
6 where we are with respect to these fundamentals and basics.  
7 I can also speak to my - where I formally worked, and I have  
8 not - at the TVA, we had to do a similar situation there in  
9 making these improvements. So I can tell you that we know  
10 where we are. We do not have all our gaps fully closed, but  
11 I did not put in these remarks that we intend to have our  
12 site vice presidents and our corporate support - functional  
13 heads, such as, radiation protection, chemistry, engineering  
14 - sign up that they've got these employees.

15 We're going to have a - I call them "Come to Jesus  
16 meetings," where we sit down and talk about what's got to be  
17 in, you know, these fundamentals and basics, because I take  
18 this very seriously of how we operate the plants. So, I can  
19 tell you that we know where we are; and we essentially know  
20 what the gaps are.

21 Now, I did not talk about human performance,  
22 having the right environment. Those are also cross-cutting  
23 issues. They have to be in place as mind set. But all  
24 that, coupled correctly, will result in good, safe  
25 operation. I think it might be appropriate that someone

1 like Joe Colvin or Jim McGaha speak to where they think the  
2 industry is on this, too. Gary Leidich has a good  
3 assessment of that, also.

4 MR. LEIDICH: Mr. Chairman.

5 CHAIRMAN MESERVE: Yeah, I guess - I'm sorry. Mr.  
6 Diaz' hand first - and I think Mr. Riccio also had his hand  
7 up. So, one, two, three, four.

8 MR. DIAZ: Just a quick comment. I really believe  
9 that Mr. Kingsley said something that's extremely important  
10 among the other things he said; and that was that licensees  
11 must not manage to PIs only. The fact licensees must not  
12 manage to their reactor oversight program. There is a clear  
13 and distinct difference.

14 This is a reactor oversight. This is a regulatory  
15 tool that licensees must attend to and must manage as a  
16 tool, but is not a management tool for the plant. That's a  
17 very clear difference, and I think it's an important  
18 difference.

19 CHAIRMAN MESERVE: Mr. Riccio.

20 MR. RICCIO: First of all I want to be very  
21 laudatory of the panel that did the power evaluation panel.  
22 It was very open. Mr. Gillespie brought in a lot of  
23 differing viewpoints, and I think that was very good.

24 The oversight process is in the pilot phase. In  
25 some ways it's very premature to be talking about that -

1 about it here. In the last meeting that I attended, we  
2 hadn't even had the full data from - or actually, the  
3 regions hadn't even been able to verify all the data that  
4 was being used. I assume that's been done by now. It's  
5 been about two or three weeks.

6           However, it's worthwhile reviewing why we're even  
7 in a new oversight process. Since the tenure of the former  
8 chairman, Ivan Sellin, the NRC has made very good efforts to  
9 make the oversight process more transparent. Much to the  
10 chagrin of the industry and to the former senior managers,  
11 that process became so transparent that we were able to  
12 determine that they weren't doing their jobs.

13           The regulatory failure that precipitated the  
14 Millstone debacle wasn't caused by a blind spot in the  
15 oversight process. It was caused by allowing the senior  
16 managers far too much discretion.

17           As the GAO ably pointed out, NRC was slow in  
18 placing plants on the "watch list" that was used to trigger  
19 more regulatory attention, and basically, they failed to  
20 take aggressive enforcement action once they actually found  
21 things.

22           The oversight process wasn't the problem. NRC had  
23 the information necessary to make the correct assessments on  
24 the problem plants, it's just that the senior managers  
25 failed to do so.

1           We have been involved in the oversight process for  
2 a long time doing what were known as "nuclear lemon  
3 reports." We were able to figure out that Millstone was in  
4 trouble. We were using NRC's data. It was completely lost  
5 as to why the senior managers could not, using the same data  
6 we were using, arrive at that conclusion. It seemed they  
7 either lacked the will or the integrity to act upon the data  
8 they had in hand.

9           Fortunately, those senior managers are no longer  
10 working for the NRC. They're now pulling paychecks from the  
11 industry that they worked so hard to protect while  
12 supposedly protecting the public health and safety.

13           Unfortunately, in the new process, the  
14 transparency that we took years to achieve has been somewhat  
15 lost; and even when we were in the room with all these  
16 people that were, you know, died in the wool on performance  
17 assessments and, you know, performance indicators; there was  
18 disagreement as to what things actually constituted.

19           I recommended then at some point the commissioners  
20 are going to have to explain to the public, you know, for  
21 instance the significance of the determination process.  
22 It's not going to be an easy thing to get across.

23           Unfortunately, at this point we haven't had any  
24 data - the public hasn't had any data they can trust since  
25 the third quarter of '98 when, in its inestimable wisdom,

1 the NRC scattered AEOD to the winds.

2           Since that time, we've had to rely upon the  
3 discretion of the senior managers - discretion which in the  
4 past has been abused. Now the new process is to incorporate  
5 risk insights into data collection and the assessment  
6 process, and that's totally inappropriate.

7           You shouldn't be allowing for discretion at the  
8 data collection level. A scram should be a scram. A safety  
9 system failure should be a safety system failure. The NRC  
10 has allowed the industry to split hairs over the difference  
11 between functionality and operability, specifically on the  
12 safety system failure side.

13           So, now we're going to track safety system  
14 functional failures. You shouldn't attempt to use some  
15 ex-post facto justification based upon risk insights that  
16 may or may not be true.

17           We're already seeing industry attempts to  
18 manipulate these indicators; and I appreciate Mr. Kingsley's  
19 candor in addressing what's been going on at Quad Cities.  
20 Approximately ten safety system function failures were not  
21 reported out there, basically; and it came down to then  
22 splitting hairs over, whether it was a functional failure or  
23 whether it was operability.

24           Before NEI or ComEd, you know, would say, "This is  
25 a learning curve," I'd like to read some of the things that

1 the NRC managers had to say. "We had some situations where  
2 determining that something constituted a functional failure  
3 would have affected a bonus being given at the site."

4 That's a serious problem.

5 We're only in the pilot program and already  
6 they're figuring, "Hey, if this is a functional failure,  
7 we're not going to get our bonus."

8 At the implementation level - again, I'm quoting  
9 NRC staff, "At the implementation level we have found many  
10 ways in which the performance indicators can be miscounted,  
11 misrepresented, or influenced. So much which, based on my  
12 discussions at the plant over the period, I'm not sure the  
13 plant or utility management was even aware of the  
14 interpretations that some of their staff were making."

15 I appreciate Mr. Kingsley's dedication to get  
16 involved and make sure that there's some sort of agreement  
17 as to what they're actually counting out at Quad Cities.  
18 Another thing, and unfortunately, it comes out of, again,  
19 Com Edison, prior to Mr. Kingsley's arrival. The NRC was  
20 talking about having an economic performance indicator,  
21 because of the very problems they saw going on at ComEd,  
22 where utility resources are being shifted back and forth --  
23 and this is prior to competition.

24 I would suggest that once competition actually  
25 kicks in, if it ever really does, the impact of competition

1 on a utility's desire to shift around its resources is going  
2 to be great.

3 Now, the NRC spent an exorbitant sum of money to  
4 go out and hire Arthur Andersen to look at the assessment  
5 process a while ago. I think it was at least three or four  
6 years ago. Unfortunately, since they ignored their  
7 recommendations, Arthur Andersen recommended that  
8 subjectivity should be taken out of the assessment process  
9 and other performance indicators. As I discussed with the  
10 safety system functional failures, we'd actually placed  
11 subjectivity into the process.

12 They also recommended that there be an economic  
13 performance indicator because, quote, "The threat exists  
14 that nuclear utilities in their desire to cut costs and  
15 increase competitiveness will be forced to impair their  
16 operational safety and increase risk."

17 Now three years later, that recommendation has  
18 gone absolutely nowhere. I haven't heard a discussion about  
19 an economic indicator from NRC in a very long time. In  
20 fact, the information that we had used, that used to be  
21 provided by NRC as an economic indicator, is no longer going  
22 to be made available, which were the O&M costs. Granted,  
23 that was a backward looking indicator, but still it was at  
24 least an economic indicator.

25 So at this point, we're basically left with an

1 oversight process that may result in the same abuses that  
2 scuttled the previous program. The only good thing that can  
3 be said is that at least the senior managers aren't going to  
4 have to abuse their discretion. They're allowing the  
5 industry to manipulate the data so they can just go ahead  
6 from there.

7 I realize we're in the implementation phase, and  
8 hopefully, some of these problems will be addressed and  
9 corrected. The public confidence in this agency has been  
10 thoroughly undermined by the past abuses in this process.

11 The new process does precious little to  
12 rehabilitate NRC's tarnished image; and while I appreciate  
13 we're in a learning curve, I think the choice of indicators  
14 already has basically made some real problems in your  
15 ability to truly assess what's going on.

16 CHAIRMAN MESERVE: Commissioner McGaffigan.

17 COMMISSIONER MCGAFFIGAN: Aren't there others ahead  
18 of me?

19 CHAIRMAN MESERVE: Well, you seemed to want to  
20 respond to this, then we'll come back.

21 COMMISSIONER MCGAFFIGAN: I seem to be the  
22 designated respondent here.

23 First of all, I appreciate the comments and the  
24 sincerity in which I'm sure they're given. We have not -  
25 AEOD, the fellow sitting to you right, is still going to

1 produce accident sequence precursor data. That's going to  
2 be done on an annual basis. AEOD hasn't been sold to the  
3 winds. It has been - we've rationalized our structure in  
4 light of budget reductions and whatever; but the functions -  
5 the important functions, that we thought, needed to be  
6 preserved in AEOD are being preserved; and I'll let Ashok  
7 speak for himself in a second, if he wants to.

8           The second item, I believe we did listen to Arthur  
9 Andersen. You know, I believe there is a tremendous amount  
10 of transparency in the new process. I agree that in the old  
11 days there were de facto "watch list" plants. I mean,  
12 because you could look at the hours we were inspecting and  
13 you could look at the indicators, and you could say, "Why is  
14 this plant with the same number of hours - inspection hours  
15 - on, and this one not?" But we fixed that.

16           I mean, part of the whole rationale for this  
17 program is to try to get rid of the subjectivity. Will we  
18 succeed? I mean, David Lockwell's in the audience or was  
19 earlier. He always says, "The devil's in the details and in  
20 the implementation." But part of this - the whole thrust of  
21 this is to continue and augment the transparency that you, I  
22 think, correctly acknowledged started in Mr. Sellin's era.

23           Finally, with regard to economic indicators, the  
24 reason we're not - I'll tell you why we're not doing  
25 economic indicators, at least as far as this commissioner's

1 concerned, we don't have a clue what that indicator is.  
2 There are numerous plants that spend very little money and  
3 generate enormous amounts of power, and INPO-1 and the rural  
4 Salt-1, and by any indication, they're very, very safe.  
5 Virginia Power's plant comes to mind.

6 Then you had the old ComEd, as Mr. Kingsley will  
7 tell you. They were spending money hand over fist. I mean,  
8 you know, for an economic indicator, they're sure as hell  
9 spending a lot of money to very little effect.

10 So, we couldn't figure out, given the data - you  
11 know, you had this virtuous quadrant where people were safe  
12 and people were low cost; and then you had this bad quadrant  
13 where people were un - not unsafe, but having - you're not  
14 going to get me into that.

15 [Laughter.]

16 COMMISSIONER MCGAFFIGAN: But having difficulties.  
17 You know, being shut down, having low INPO ratings, having  
18 INPO's board going talking to their board, and yet they were  
19 spending money hand over fist. So, where's the economic  
20 indicator.

21 Arthur Andersen helpfully put that in as a sort of  
22 by-the-by in one of their reports, but we didn't have a clue  
23 how to do it. So, if you have an economic indicator that  
24 can rationalize all of that, let us know and we'll consider  
25 it.

1 MR. RICCIO: There's going to be a problem with  
2 economic indicators, as you well know, because they tend to  
3 reflect the competitive advantage or disadvantage of the  
4 utilities. We're already seeing a diminution of economic  
5 data being made available to the public, and precisely  
6 because of the advent of competition. The absence of O&M  
7 data is just an example.

8 COMMISSIONER MCGAFFIGAN: I think it's another  
9 agency of government that produces a lot of that O&M data,  
10 and I do believe that some of the utilities are objecting to  
11 their publishing it, but that's not us.

12 MR. RICCIO: The one thing I do bemoan about AEOD -  
13 and I do feel it's sort of scattered to the winds - is that  
14 you had these performance indicator reports, which were very  
15 valuable; and we're now having to rely upon industry data.

16 If INPO would be happy to share their data with us  
17 -- which I think we spent ten years in court trying to get  
18 it -- we'd appreciate that.

19 COMMISSIONER MCGAFFIGAN: I'll duck out here.

20 [Laughter.]

21 CHAIRMAN MESERVE: If I could, I'd like to come  
22 back to the question that Commissioner Dicus had asked,  
23 which is the question that Mr. Kingsley had identified  
24 certain essentials that were the foundation for effective  
25 operations. The question was whether the oversight process

1 would be sufficient to get at those essentials; and Mr.  
2 Kingsley had an opportunity to respond to that question from  
3 the perspective of ComEd.

4 I wonder if Gary Leidich or Mr. McGaha would give  
5 us their view on that?

6 MR. LEIDICH: Thank you, Mr. Chairman. I was  
7 wondering which of the 20 issues on the table I was going to  
8 respond to.

9 [Laughter.]

10 MR. LEIDICH: So, I'll focus on this one.

11 Let me just globally say that INPO very much  
12 believes that the industry is really ready to move forward  
13 on this process. It's arguably an aging industry,  
14 particularly, if you look at us in the mirror; but the  
15 reality is, it's a very mature industry. It's a very  
16 high-performing industry, both safety wise, and from an  
17 operational perspective; and it's clearly our job to ensure  
18 that.

19 Like it or not, we are in a learning curve; and  
20 the point is to communicate the issues around that learning  
21 curve, input it and get where it is. For the past 20 years  
22 without a learning curve that's still going on by the way.

23 So, communicate the issues around the learning  
24 curve to make sure there is open, good integrity to solve  
25 those issues, one at a time, whatever they are. That's what

1 we need to be about.

2 So I would leave this with that overview, that  
3 having that communication, identification of the issues.  
4 The industry's really ready to move forward to implement the  
5 program.

6 CHAIRMAN MESERVE: Mr. McGaha.

7 MR. MCGAHA: Speaking for our Entergy plants, I  
8 think we do have the basic elemental things in place. In  
9 fact we, on a continuous basis, are working on those things.  
10 This new oversight approach, I think, is good. It's putting  
11 increased emphasis on a lot of the areas that were - that  
12 are essential; and you know when I think about it, for  
13 example, we were already working on improvements in human  
14 performance, new methods, new methodologies.

15 In fact, if you look at the cross-cutting areas,  
16 there's a direct correlation to the INPO document on  
17 professionalism that ties right into the cross-cutting area  
18 of safety conscious work environment. There's a human  
19 performance document that the industry - in fact, I was on  
20 the committee that helped put that together, that directly  
21 parallels, ties into the human performance cross-cutting  
22 area.

23 Now this new guideline document that's coming out  
24 from INPO, taking advantage of all the good practices across  
25 the industry, is a direct correlation between that and the

1 corrective action cross-cutting area.

2 So, we're going to look at that from the  
3 10,000-foot perspective. I think we do have the elemental  
4 things in place. I know at our company we have a  
5 point-by-point detailed plan for how we're going to rule  
6 this out to make sure that we've got good alignment.

7 Now we are going to need the benefits of the  
8 lessons learned, and some of these open issues that we  
9 probably will be checking and adjusting on as time goes on.  
10 So there will be, I think as somebody said, an  
11 implementation phase where we'll have a few bumps in the  
12 road.

13 But, as far as I'm concerned, we're ready.

14 CHAIRMAN MESERVE: Other comments?

15 Mr. Colvin?

16 MR. COLVIN: Thank you, Mr. Chairman. I wanted to  
17 follow up on your teeing up for this question, also.

18 I think in answer to the question that  
19 Commissioner Dicus asked, I think we need to take a step  
20 back and try to parse these issues in several ways. One, I  
21 think if we look at the mission of the agency, to provide  
22 adequate protection of the public health and safety; and the  
23 agency sets through regulation a series of regulations that,  
24 in fact, has done that.

25 On top of that, we have then to add margin by

1 increasing and adding other regulations that provide an  
2 adequate margin of safety based upon their cost-beneficial  
3 element. Is the amount of safety gained worth the cost of  
4 implementation?

5 In fact, if you take a look at the major rules the  
6 Commission has issued - and I don't have them all in my mind  
7 - but the maintenance rule, fitness for duty, station  
8 blackout - all the regulations that have been issued in the  
9 past, probably 10 or 15 years, have really been issued based  
10 upon adding an additional margin of safety.

11 So, when we start looking at the - at whether the  
12 essential elements are in place, I think from the standpoint  
13 of protection of the public health and safety, they are in  
14 place. I think from a standpoint of looking at when you  
15 implement these programs, are they complete or is there  
16 still work to be done, I think there still is always work to  
17 be done in those areas. I think as Mr. Kingsley has  
18 articulated, that's an ongoing issue.

19 I think the second point that relates to this is  
20 we're talking about an oversight program that has a set of  
21 performance indicators and a baseline inspection program as  
22 part - and I say only part - of the NRC's oversight for  
23 reactor safety. In that area, the performance indicators  
24 probably only capture 20, 30, 40 percent of the risk - of  
25 the plant risk.

1           So, you've got to make that up by the baseline  
2 inspections and the other foundations - the essential  
3 elements that Mr. Kingsley talked about. So, I think we're  
4 at the right point in time; and we're trying to balance  
5 that.

6           The third point I wanted to make is on the  
7 performance indicators. The challenge in developing any  
8 indicator is to provide validity to have it measure what you  
9 really want to measure and have it not be manipulatable by  
10 anyone. I would submit that's a tremendously difficult  
11 challenge, and we have - that's Mr. Leidich's comments.

12           We learn this through a lot of work, through the  
13 INPO program. We're learning it in the involvement with the  
14 pilot plants and the NRC staff team today on how to, in  
15 fact, improve that.

16           So I think the bottom line answer is, I think we  
17 are there. It's a tremendously effective program, and I  
18 think it provides the NRS, the stakeholders and the public  
19 the transparency and a realistic look at the real margin of  
20 safety in these facilities.

21           Thank you.

22           CHAIRMAN MESERVE: Before we move on to the final  
23 topic of today's 2.206 issue, let me inquire if there's  
24 anybody who has not yet had an opportunity to speak on the  
25 oversight process that has a point that's so pressing that

1 he needs to make it?

2 Mr. Gunter?

3 MR. GUNTER: One of the concerns that we have with  
4 this is that it's our perception that the whole initiation  
5 here comes from an industry lobby effort to reduce NRC  
6 inspection force by 50 percent. I think it's our perception  
7 of what we have on the table right now is a compromise  
8 proposal.

9 In that light, it's to no one's interest to  
10 inhibit or tie one hand of the inspectors behind their back.  
11 Some of these - I think what we're going to be watchful for  
12 are activities that can actually reduce or cloud inspection  
13 activities at each of these plants.

14 I think one aspect is the color coding of the  
15 whole plant performance spectrum. The issue here is that it  
16 may be that the industry has far more tools at its hand to  
17 introduce more gray areas in between each of these color  
18 codings than the inspectors can keep up on, and I think that  
19 in turn has had an impact on enforcement activity.

20 COMMISSIONER DIAZ: Mr. Chairman, I'm sorry, I have  
21 to interject on that.

22 The initiative on the oversight process did not  
23 start in industry. This is an initiative that was started  
24 at the Commission level once we saw what was happening in  
25 many, many activities.

1           We started with an issues called "IRAP," which was  
2 not good enough, but the initiative came because the  
3 Commission wanted to perform its functions of ensuring  
4 public health and safety. That eventually resulted in a  
5 significant involvement of the industry and other  
6 stakeholders.

7           Thank you.

8           COMMISSIONER MERRIFIELD: Mr. Chairman, I also  
9 would weigh in. I know we had a meeting probably six months  
10 ago where the Commission had a review at that point where we  
11 were in this effort. Questions were raised at that point,  
12 was this a concerted effort to try to reduce our inspection  
13 hours.

14           As the former chairman and I both chipped in at  
15 that point, from our perspective, if this is a risk-informed  
16 effort, our inspection hours may go down, our inspection  
17 hours may go up; but we needed to evaluate this effort based  
18 on the facts in front of us, not with a specific goal in  
19 mind of reducing the number of hours. I think that's the  
20 discipline. I think that was enforced in a disciplined  
21 manner in the staff in terms of the way they've viewed this.

22           The other thing I would say is I want to agree  
23 with a comment made by Commissioner Diaz earlier. What is  
24 our expectation of this program? I think, in looking back  
25 educationally and experience, I sort of review this as a

1 level of minimum competency, a baseline; and that we are not  
2 to manage ourselves associated with that baseline level.  
3 It's high school, and they have competencies. You don't  
4 teach to the level of competency, you teach to the level  
5 that's going to get you merit scholars.

6 I think we certainly - and I think in respect to  
7 the comments made by Oliver Kingsley, I think the  
8 expectation is, people aren't going to manage their plants  
9 merely as a result of our baseline performance indicators,  
10 but to do the things necessary to get the excellence brought  
11 out among all the plants.

12 MR. RICCIO: If I could add just a quick suggestion  
13 that would enhance public confidence in the process?

14 There's already a perception - you guys called it  
15 "a near death experience." We've been calling it a  
16 "non-hostile takeover of NRC by NEI" because of the threat  
17 made - leveled at the agency by the Senate Oversight  
18 Committee.

19 You have a new reg that explains the oversight  
20 process. The oversight process has changed as it's worked  
21 through the FACA Committee. Unfortunately, what NRC or FACA  
22 was going to march out as their explanation of the new  
23 process, was it's going to be an NEI document.

24 We made that recommendation in the pilot  
25 evaluation panel, but that is a really bad idea. It's just

1 going to lend to the perception that this agency is being  
2 taken over by NEI.

3 When you're ready with the new program, once  
4 you've worked through the pilot, make sure it's an NRC  
5 document that you bring out to explain to the public. You  
6 have the new reg, I understand that. But it has since  
7 changed; and you're going to march out 9902 revision (d) as  
8 the explanation of the pilot to the public, and that's just  
9 totally inappropriate.

10 CHAIRMAN MESERVE: Thank you.

11 This like the issue of risk informing Part 50 is  
12 one that is a matter which will have to be, and will be  
13 continuing dialogue. This is also very much a work in  
14 progress.

15 Let me suggest, therefore, that we now turn to the  
16 final item that we had identified for this meeting, which is  
17 to discuss the 2.206 process. Sam Collins was going to  
18 provide us with a snapshot of where we are on that issue.

19 MR. COLLINS: Yes, good morning.

20 I'd like to try to frame this non-controversial  
21 topic --

22 [Laughter.]

23 MR. COLLINS: - if I can, with a little bit of  
24 background to explain the intent of the 2.206 process and  
25 some of the on-going actions, as well as those continuing

1 initiatives that we have to address what we believe are very  
2 valid stakeholder concerns.

3 It was mentioned earlier by John McGaha - John  
4 went through in his discussion what amounts to be the four  
5 outcome measures of the Office of the Nuclear Reactor  
6 Regulation: Maintaining safety, increasing public  
7 confidence, reducing unnecessary burden, and making NRC  
8 activities and decisions more effective, efficient and  
9 realistic.

10 The 2.206 process touches squarely on two of  
11 those: maintaining safety, the issues that are brought  
12 forward to us, are typically framed as a safety concern; and  
13 public confidence, and the way not only how the process  
14 works, when does it work, how long, depths of the NRC review  
15 - all of those areas have a tendency to influence public  
16 confidence.

17 The process itself is in fact framed in the Code  
18 of Federal Regulations. It's implemented by a management  
19 directive. It is not a process that is unique to the Office  
20 of Nuclear Reactor Regulation, although we have a tendency  
21 to focus on power reactor 2.206 discussions, and that's the  
22 topic today. It also applies to the materials arena that's  
23 used by the Office of Materials and Safety.

24 Any member of the public may raise a potential  
25 health and safety issue in a petition, ask the NRC to take

1 specific action regarding a licensed, operating facility or  
2 a licensee. This is one of many processes that involves the  
3 public. What are those? Public meetings, correspondence -  
4 we get a lot of correspondence that we answer from our  
5 stakeholders. We're having stakeholder meetings, as we  
6 mentioned, in many of these processes that have been  
7 discussed today.

8 Jim mentioned the FACA Committee, which is fairly  
9 unique, but it was a stakeholder committee that was formed  
10 for the purposes of working with the oversight process.  
11 It's a unique tool, but I think it's one that's very  
12 effective. Allegations, not only to the regions, but to the  
13 program office of safety concerns with our licensees, are  
14 ways that our stakeholders are involved in our processes and  
15 how we respond.

16 There's some confusion, I believe, on the purpose  
17 of the 2.206. We had a meeting yesterday with stakeholders.  
18 I think we worked through many issues in that regard, maybe  
19 Jim will speak to some of those today.

20 The final product of the 2.206 is a director's  
21 decision that issued by the office that's been asked to  
22 review this specific concern. The issues that are still on  
23 our plate today, we believe, and we're discussing the  
24 solution to many issues in the past, but the issues that are  
25 on our plate today is an appeal process.

1           This process that's framed very tightly in 10 CFR  
2 have room in the process, as is described, to provide for an  
3 appeal; or a "reclama," if you will, once the agency makes a  
4 decision. So, that can be understood by our stakeholder,  
5 typically, the individual who brought the petition forward,  
6 and the opportunity is there for discussion and finalization  
7 of information before the final director's decision is made.

8           I think some methodologies of that were discussed  
9 yesterday. That's very different from an appeal to the  
10 Commission or a third-party appeal.

11           Our time on this is an issue. We've been working  
12 on that for a period of time. We formed a petition to the  
13 review board. It typically meets within a week of the  
14 petition being received. We have an initial response that  
15 goes out which indicates, are we going to take immediate  
16 action? If so, why? If not, why not? That decision is  
17 reached at the review panel level in concert with the  
18 program office and our office of general counsel.

19           That decision is assigned out, usually as soon as  
20 possible. Sometimes, as soon as possible means we need to  
21 get the information from our licensees to determine the  
22 extent of the condition, what the licensee's actions are.  
23 And a final decision - the goal is within 120 days.

24           What have we done in the past? We have conducted  
25 a limited stakeholder survey in January of 1999. This issue

1 raised up on our internal initiatives program improvement  
2 arena. We have budgeted through John Zwolinski's team in  
3 the office of NRR, an improvement initiative.

4 We had the results of a survey and staff  
5 experience has led to many process changes. We've revised  
6 the management directive 8.11, which was issued July 1,  
7 1999. Some of those changes - we offered the petitioners  
8 the opportunity to make a presentation in front of the  
9 review board, replaced the informal public hearing process  
10 for their public meetings, so there are not so many  
11 constraints and bounds on that.

12 We increased contact with the petitioner managers.  
13 Again, the process is in place. We've added petitioners to  
14 the service list, applied 120 schedule, rigidly. We have a  
15 report to go to the executive director, monthly, on the  
16 progress in that regard.

17 In a go forward direction, we now have management  
18 directive 8.11 published in the Federal Register since  
19 October '99, seeking stakeholder and public comments for  
20 suggested changes to the 2.206 process. I mentioned the  
21 meeting we had yesterday with the UCS task group.

22 We had a public meeting to discuss comments to the  
23 Federal Register notice scheduled for February 10, 2000. We  
24 have a Commission paper outlining the proposed, additional  
25 changes that we propose in 2000, and will issue the final

1 management directive in August of 2000.

2 So, we are - it's a work in progress. I think we  
3 have responded to many of the stakeholders' concerns. There  
4 are still some tough issues, and we look forward to  
5 continuing to work with the stakeholders, particularly  
6 through the comment period to finalize this process and move  
7 forward, but I have a feeling there's always going to be  
8 some manner of changes in efficiencies as our process  
9 improves.

10 CHAIRMAN MESERVE: Thank you.

11 I believe Mr. Riccio has been involved in this  
12 task force. Perhaps he'd like to comment on this issue.

13 MR. RICCIO: The first thing I have to do is amend  
14 my comments.

15 I've been dealing with the 2.206 process for going  
16 on a decade now. I had no reason to believe that  
17 yesterday's meeting was going to be even more productive  
18 than the previous nine years' worth of meetings I've been  
19 attending - although, it actually was. There were a lot of  
20 individuals in that room that were concerned about making  
21 the process work, and that was definitely heartening.

22 Unfortunately, we still haven't had one petition  
23 accepted. As far as I'm concerned, the 2.206 petition  
24 process is only good for one thing, generating enough media  
25 attention to embarrass the agency or this industry into

1 doing the right thing; and you need look no further than to  
2 shut down a Cook to see this exemplified.

3 Now, Dave's sitting out there in the audience  
4 somewhere. He filed a petition on Cook that requested  
5 action be taken prior to restart. The NRC, was prepared to  
6 allow the reactor to restart despite the filing of that  
7 petition; and it wasn't until Dave got on the telephone and  
8 started generating enough media attention, several calls to  
9 the people on the Hill - things of that sort - that NRC  
10 finally changed its position less than 24 hours prior to  
11 restart.

12 As a process, up until this point, it's been an  
13 abysmal failure. It's basically a device that allows the  
14 NRC to shove aside the public's legitimate concerns into a  
15 regulatory cul-de-sac, where they're left to twist in the  
16 wind until rendered moot.

17 Now with that being said, and like some of the  
18 things we discussed yesterday, why the heck do we use this  
19 process? It's the only game in town. As David said, "It's  
20 a bumpy road leading to a dead end, but it's the only avenue  
21 we have." And we will continue to use the process, and  
22 hopefully we can make some improvements to it.

23 We have had - I am heartened by some of the  
24 changes in 8.11. I think your ability to engage the public  
25 has enhanced the process. That being said, I'd like to see

1 you accept at least one petition.

2 I think you'd have a hard time at this point  
3 telling AEP that there wasn't something safety significant  
4 out at Cook. You were within 24 hours of allowing that  
5 reactor to restart before Dave got on the telephone. I know  
6 I'm using a specific example to argue out the whole process,  
7 but we can go back in time.

8 I understand, too, that the agency feels - and  
9 rightfully it has - in many instances taken action we have  
10 requested, yet not accepted the petition. I don't know  
11 whether that's just an engineering type of perspective, or  
12 that somehow the agency just can't bring itself to admit  
13 that someone outside the agency or the industry might have  
14 something significant to add; but, if you're going to do  
15 what the public is asking anyway, why not just accept the  
16 petition?

17 We've seen a lot of the petitions kind of twist in  
18 the wind for a very long time, and eventually are rendered  
19 moot, by either, you know, the NRC taking some action, which  
20 you know, is laudatory; or by it being basically rendered  
21 moot by the reactor restarting, or more recently, with the  
22 reactor shutting down permanently and never coming back on  
23 line.

24 I guess I'm heartened again by the contacts we had  
25 yesterday, and I hope we can continue in that vein. They're

1 much more productive than the five or six or eight previous  
2 attempts to rehabilitate the process.

3 Just so the industry doesn't get too concerned,  
4 Ellen was in there, too. So, she had her say as to where we  
5 were going with this process. It wasn't just our task force  
6 with Dave and I.

7 CHAIRMAN MESERVE: Mr. McGaha.

8 MR. MCGAHA: I do believe, and Sam can correct me  
9 or Carl, I believe at times we have accepted in part the  
10 petition, or affirmed in part and a lot of them are drafted  
11 that way. I think our drafting has improved in recent  
12 months.

13 I personally am interested in the appeals process.  
14 I talked to some to Mr. Lochbaum about this, and how that's  
15 going to work out in the coming months, and what questions  
16 you're getting.

17 I don't know whether anybody noticed it at the  
18 time, but we did something a little bit out of the normal on  
19 Mr. Lochbaum's petition with regard to failed fuel at River  
20 Bend, in that we denied it; and absolutely correctly. But  
21 he asked us all to look at it.

22 The letter that I think he finally got from SECY  
23 or the chairman affirmed, not just the usual, you know,  
24 "there is no appeal process in 2.206," but it also had a  
25 sentence in it to the effect that the Commission basically

1 stood by the analysis that Mr. Collins had played out on how  
2 we approached failed fuel.

3 So, I think we can occasionally do that. I may be  
4 adding to the Commission work load, but I think we can  
5 occasionally take a look at some of this stuff; and the  
6 appeal can even be at the Commission, although, my other  
7 commissioners may not - we just need to have an open mind  
8 about how all this works.

9 I also think we should commit to - you know, we're  
10 having this public process. When this paper does come to  
11 the Commission, this is probably one we need to have a  
12 Commission briefing on and let everybody have their say as  
13 to whether the revised package, which could include rule  
14 changes to 2.206, as you all have requested, whether it's  
15 adequate or not. We could have a focused Commission  
16 briefing on this subject by next May or June or whenever it  
17 fits Sam's schedule, as far as I'm concerned.

18 CHAIRMAN MESERVE: Mr. Ahearne?

19 MR. AHEARNE: Two comments. The first, if you go  
20 out into the general public anywhere near reactors, they  
21 understand - they know what a reactor is; and a lot of them  
22 have heard about spent fuel, spent fuel pools,  
23 transportation. Almost nobody knows what 2.206 is.

24 That's knowledge in a very small set of the  
25 public. This does not mean it's unimportant. It was

1 striking, I think, in this CSIS study, we ended up with 13  
2 issues. This is a consensus report. It had a lot of  
3 industry involvement. One of those 13 issues was the 2.206  
4 process.

5 The description in the report basically says, it  
6 may have a good intent, but it's broken and it doesn't work.  
7 The reasons it doesn't work are laid out fairly succinctly  
8 in our report, and I think there were a number of  
9 recommendations that might go towards trying to make it  
10 work.

11 Now one point that came up frequently in our  
12 discussions putting the report together, at which there was  
13 not disagreement by the industry people, was that the NRC  
14 treats the 2.206 petitioner vastly different than they treat  
15 the industry when the industry comes in with a similar  
16 request, or when a question is going to be asked. A phrase  
17 that is over-worked and tired is, but nevertheless it has an  
18 accurate imagery is, "it would be nice to have a level  
19 playing field."

20 CHAIRMAN MESERVE: Mr. Gunter.

21 MR. GUNTER: Obviously, part of the concern here is  
22 effective engagement of the issue with the agency. NEARS  
23 filed a 2.206 petition back in July of 1992, on the  
24 Thermalag fire barriers. Actually, NRC took very quick  
25 action to dismiss that petition.

1           However, the issues that were engaged by the  
2 petition still haunt this industry and the agency. Only  
3 recently did we see a fine levied against the vendor, at a  
4 fraction of the original levy. But we've seen a host of  
5 information notices. Actually, one of the information  
6 notices that was filed four years after our petition was  
7 submitted, actually confirmed one of our concerns about  
8 Thermalag and seismicity, and the fact that this stuff could  
9 fall off and shear electrical cables. That was dismissed in  
10 the original petition, though.

11           Still today, you know, we have plants that have  
12 substantial amounts of Thermalag installed and are basically  
13 working around the issue through compensatory measures,  
14 which we don't believe are appropriate.

15           So, we would be very interested in seeing the  
16 appeal process, how that could be engaged, and I think that  
17 would - if you give the public a tool that works, a tool  
18 that's effective, I think you would see it being implemented  
19 more. Perhaps that's the concern here.

20           CHAIRMAN MESERVE: Mr. Collins.

21           MR. COLLINS: Just a point of clarification. Thank  
22 you.

23           We are issuing partial granting of the request,  
24 Jim. If you haven't seen a recent petition response, you  
25 might not have hit upon it; but within the past six-to-eight

1 months, as a result of a variant interpretation looking at,  
2 what does the word "deny" really mean. If, in fact, we are  
3 granting some of those actions, do we need to use that  
4 phraseology, which is a stakeholder issue, it's a public  
5 confidence issue. That's all it is. Should we move forward  
6 and rephrase the petitions such that recognize that actions  
7 are in fact being taken.

8           So, I think we're moving down that road; and  
9 that's the result of stakeholder input. So that process  
10 worked.

11           Thermalag, each plant in fact has a plant-specific  
12 order in that regard; and that plant-specific order details  
13 very specifically the actions that are necessary to be taken  
14 to mitigate effects of Thermalag and it has a date certain  
15 of when those actions will be complete. All licensees are  
16 required to adhere to those plant-specific orders.

17           I understand the issue, Paul. It's just a  
18 clarification of the status of Thermalag.

19           MR. GUNTER: Can I respond, though?

20           CHAIRMAN MESERVE: Please.

21           MR. GUNTER: But, it's my understanding that even  
22 though it's date certain, schedules slip.

23           MR. COLLINS: It can be a request - excuse me,  
24 responding.

25           It can be a request for schedule changes due to

1 shifts and outage, for example. In many of these plants,  
2 work has to be done during an outage. Plant outage  
3 schedules slips, then these schedules slips. But each of  
4 those have to be reviewed and granted by the staff.

5 CHAIRMAN MESERVE: Other comments on the 2.206  
6 issue?

7 COMMISSIONER MERRIFIELD: Mr. Chairman.

8 CHAIRMAN MESERVE: Yes.

9 Yeah, I just want to say, you know and Sam has  
10 just mentioned the issue of partial granting of a petition.  
11 That was one of the issues, when I first came on board a  
12 little over a year ago, at this point, having encountered my  
13 first 2.206 petition.

14 I was briefed by the staff on various issues, and  
15 my reaction was, gee, we've gotten this petition. We've  
16 taken action, really, in response to that petition, but  
17 we're denying it. I think we have made the right change at  
18 this point to provide for partial granting.

19 Because I think - you know, there's got to be a  
20 satisfaction in the process. If an industry participant, or  
21 a stakeholder brings in these concerns and they are  
22 justified, I think we should recognize that. I think that's  
23 only fair; and I think we're going in the right direction on  
24 that.

25 Hopefully, we can go into this in more detail in

1 the coming months when we get more comments on the 8.11  
2 revision. I'm heartened by some of the initial comments of  
3 Mr. Riccio that this seems to be going more in the right  
4 direction, which I think is good.

5 I would second Commissioner McGaffigan. I would  
6 be more than happy to have another meeting at the right  
7 point in the June or that period - May/June time period, to  
8 review that and hear specific comments from stakeholders,  
9 including Mr. Riccio and Mr. Gunter and others to get some  
10 impact and some response out of that. I would second  
11 Commissioner McGaffigan's motion in that regard.

12 CHAIRMAN MESERVE: Are there any other comments?  
13 If not - please?

14 MR. SETSER: I'll just make a short comment.

15 I got some sensitivity to this issue after having  
16 been a regulator for 28 years. There are any number of  
17 people waiting in line to tell me why they don't like what I  
18 do, or to suggest a different way I could do business; and  
19 that's all well and good - and that's not going to change.  
20 It's going to get more diverse and more intent.

21 But, let me offer this perception. In 1976, I met  
22 with NRC and representatives of some 26 states here in  
23 Bethesda. They set a benchmark for how things were at the  
24 time. When I look back and compare over the years where  
25 we've come from since that time, there has been tremendous

1 quarters of magnitude improvement in the process.

2 But there's still a way to go. There's always  
3 room for continuous improvement, and that's what's going to  
4 be. Because there are always going to be driving forces  
5 that move us toward that. But, you know, I would suggest  
6 that if you want to take on another federal agency and see  
7 how they do business, I could sure tell you one to look at.

8 [Laughter.]

9 MR. SETSER: The NRC probably ranks up considerably  
10 orders of magnitude greater in the way they do business than  
11 the other one.

12 CHAIRMAN MESERVE: Who are you referring to?

13 [Laughter.]

14 MR. AHEARNE: I bet we can guess.

15 [Laughter.]

16 MR. SETSER: I'll let you draw straws, and there's  
17 only one straw.

18 [Laughter.]

19 MR. SETSER: There will be always issues, and we  
20 will need to improve the process. I'm for anything that  
21 reduces the amount of paperwork that comes across my desk,  
22 because I usually see the paperwork for all the complaints,  
23 all the petitions, and all the things that come up in  
24 Atlanta, in that area; and I know that it usually takes me  
25 four trash cans to fill up sometimes.

1 CHAIRMAN MESERVE: Recycle next time.

2 [Laughter.]

3 MR. SETSER: I just wanted to indicate, there are a  
4 lot of good things going on. While there are a lot of  
5 improvements to be made, I think we're all going in the  
6 right direction to try to get there.

7 CHAIRMAN MESERVE: Good. Thank you very much.

8 I think with that comment, we get better to clear  
9 this meeting at an end.

10 [Laughter.]

11 CHAIRMAN MESERVE: This has been extraordinarily  
12 helpful. I very much appreciate the participation of the  
13 various people around the table, and the insights that they  
14 have provided us.

15 We are going to continue this whole process and  
16 all of the areas we've discussed this morning. We're not at  
17 the end of the road with any of them. This has been helpful  
18 to start us off on the right path, and will keep us there.

19 So, thank you very much.

20 [Whereupon, at 11:53 a.m., the meeting was  
21 concluded.]

22

23

24

25

CERTIFICATE

This is to certify that the attached description of a meeting of the U.S. Nuclear Regulatory Commission entitled:

TITLE OF MEETING: MEETING ON NRC RESPONSE TO  
STAKEHOLDERS' CONCERNS

PLACE OF MEETING: Rockville, Maryland

DATE OF MEETING: Thursday, December 16, 1999

was held as herein appears, is a true and accurate record of the meeting, and that this is the original transcript thereof taken stenographically by me, thereafter reduced to typewriting by me or under the direction of the court reporting company

Transcriber: Paulette Brown

Reporter: Jon Hundley



# **ASME Risk-Informed Technology Developments For Nuclear Power Plants**

**John H. Ferguson**

**Vice President, Nuclear Codes and  
Standards**

**ASME International**

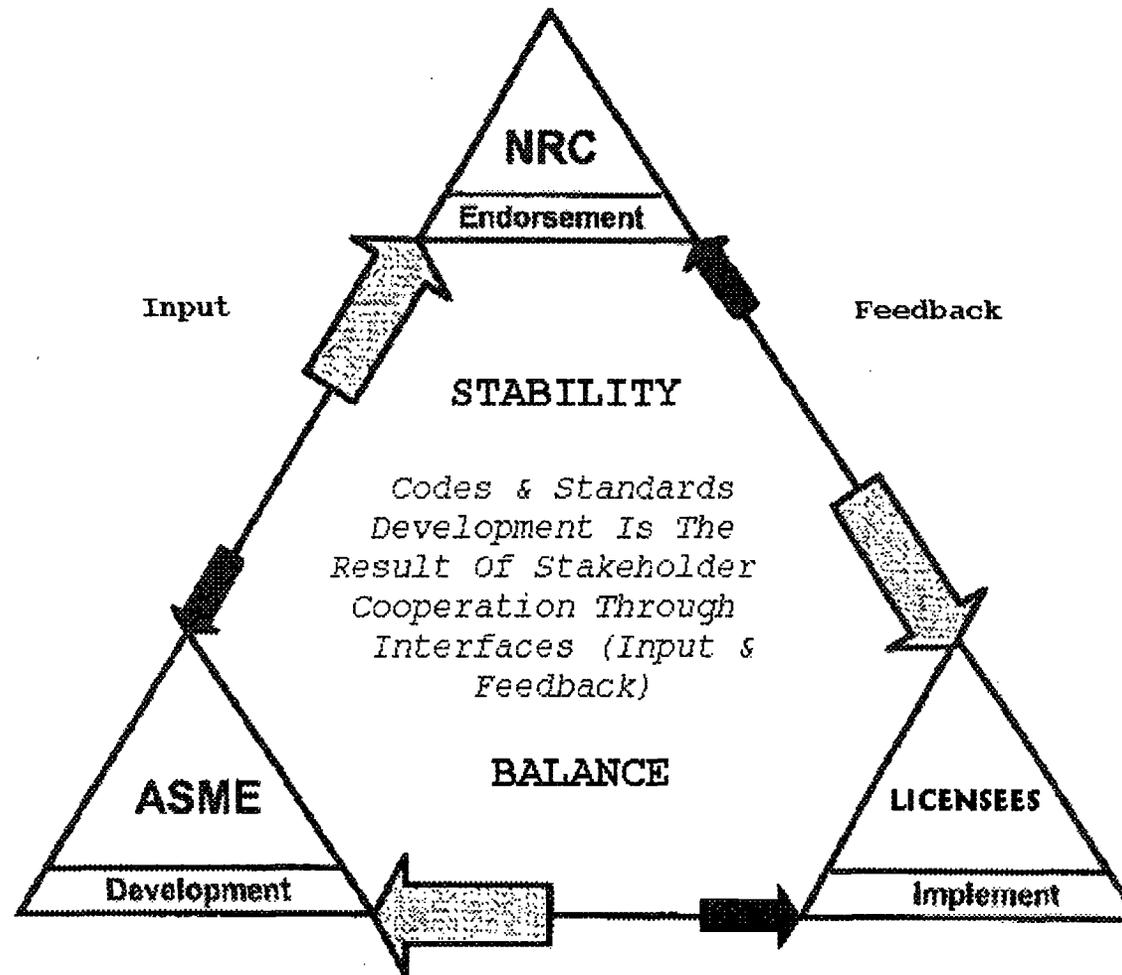
**U.S.Nuclear Regulatory Commission  
Rockville MD**

**December 16, 1999**

## **Background on ASME Risk-Informed Technology Developments**

- Starting in 1986, ASME initiated the concepts and led collaborative technology development efforts on risk-informed inservice inspection (ISI) and inservice testing (IST)
- Pilot plant studies showed significant safety, radiation exposure, and administrative benefits
- ASME Code Cases developed to facilitate early use of risk-informed ISI and IST technology
- Information from ASME initiatives were used by NRC in developing Reg Guide 1.174 and as direct technical support in developing Reg Guides 1.175 (IST) and 1.178 (ISI)
- Development of risk-informed ISI and IST underway at several nuclear power plants

# Process to Develop ASME Nuclear Codes and Standards



# Current Risk-Informed Technology Efforts In ASME Nuclear Codes & Standards Programs

- Initial research on risk-informed component design completed to support ASME Section III requirements
- Efforts initiated by ASME Committees to incorporate risk insights into standards for qualification of mechanical equipment
- Exploring approaches to bring risk insights into nuclear air and gas treatment codes and standards
- New committee on nuclear risk management formed - work underway on a PRA Standard

## ASME PRA Standard

- This standard defines requirements for PRAs used to
  - support risk-informed decisions
  - provide methods for adapting these requirements for specific applications
- The standard is being developed in cooperation with ANS and IEEE
- Public draft issued for comment in February 1999 which received 46 sets of comments from individuals and organizations worldwide
- Final draft of standard being developed
- Due to be issued in 2000

## Need for Cooperation

- Address impact on ASME Codes and Standards requirements after reclassifying SSCs into risk-informed safety classes (RISCs)
- ASME brings significant experience to define requirements for special treatment, reliability assurance, and functional assurance relative to the new RISCs
- ASME wants to continue to be proactive and cooperate with all cognizant stakeholders

## Summary

- ASME has led and continues active efforts to incorporate risk-informed technology into nuclear codes and standards
- ASME Nuclear Codes and Standards risk-informed technology directive correlates well with NRC initiative to risk-inform 10 CFR Part 50
- ASME's research and consensus codes and standards process allows for stakeholder participation that includes growing participation by international representatives

**Written Statement for  
NRC Stakeholder Meeting  
December 16, 1999**

**Statement by**

**Gary R. Leidich  
Executive Vice President  
Institute of Nuclear Power Operations**

This statement will address the following areas:

- overall industry progress for 1999
- INPO's self-evaluation and corrective action document
- data collection for performance indicators

INPO continues to be encouraged with the overall progress the NRC is making on risk informing the regulatory process. INPO also recognizes that this great improvement in regulation is possible because of the strong safety and operational performance of the U.S. nuclear units.

At the last stakeholder meeting in May, INPO reported on industry success in further improving plant safety and reliability. Since then, this improvement effort has stayed on track. As a result, 1999 will likely be a year in which the industry continues to make significant progress.

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9 DEC 99 4:31

The World Association of Nuclear Operators performance indicators for U.S. nuclear plants is an important sign of this progress. The third quarter results for the performance indicators are impressive.

First, unit capability factor. This indicator is the percentage of maximum energy generation that a plant is capable of supplying, limited only by factors within control of plant management. The third quarter 1999 industry median of 88.4 percent continues a trend for improvement and exceeds the year 2000 goal of 87 percent.

Next, unplanned capability loss factor. This indicator reflects events such as unplanned shutdowns or outage extensions. The third quarter 1999 industry median of 2.9 percent is a marked improvement from the level reported at the May meeting. As of the third quarter, this measure is on track to meet the year 2000 goal.

The number of significant events also continues to decrease. This isn't a WANO performance indicator but it is an important sign of industry progress. Data shows a decrease in the number of significant events from 2.38 per nuclear unit per year in 1985, to .04 in 1998, to .03 so far this year. This reduction reflects a substantial overall improvement in safety throughout the nuclear industry.

Another encouraging sign for our industry is the fact that only one plant in the United States remains in extended shutdown. In fact, almost all U.S. nuclear plants performed extremely well during this past summer's peak season, providing reliable sources of electricity when it was needed most. Improved plant performance is also

reducing operating costs, making nuclear production more competitive than ever in the marketplace.

These 1999 achievements depict an industry that is committed to a future of ongoing improvement and continued good performance. To support this, INPO looks for ways to continually add value to its programs and activities so they are more responsive to member utility needs. One example of this is a steadfast focus on self-evaluation and corrective action.

Over the last two decades, INPO has observed that **effective self-assessments and corrective actions, along with a high level of materiel condition, are the primary keys to successful plant operation.** The nuclear industry has made substantial progress in developing and implementing effective self-assessment and corrective action programs, as evidenced by INPO's ongoing examination of these two areas during plant evaluations.

In response to increasing industry interest in these areas, INPO recently facilitated an effort to define a self-assessment and corrective action principles document. The new document, *Principles for Effective Self-Assessment and Corrective Action Programs*, is scheduled to be published by the end of 1999.

Implementation of *Principles for Effective Self-Assessment and Corrective Action Programs* is intended to promote behaviors throughout an organization that support objective self-assessment and effective problem identification, evaluation, tracking, correction and trending.

INPO member utilities will use this document to improve the quality of their self-assessment and corrective action activities. Additionally, INPO plans to begin using the document in the plant evaluation process in mid-2000.

Finally, great care must be exercised in managing the data collection for performance indicators for the revised oversight process. Our experience over the past several years with developing and implementing the WANO performance indicators supports some industry concepts to establish a pilot period to resolve data and definition issues and to understand an achievable schedule for submitting data.

In addition, in working with the industry, NEI and the NRC, INPO is exploring the possibility of an industrywide consolidated performance data reporting system. This system would include the performance indicators for oversight, existing WANO performance indicators and equipment reliability data within the Equipment Performance and Information Exchange system.

INPO, representing the industry, stands ready to support the continued improvement in the regulatory process. Our efforts to establish principles for self-assessment and corrective action, and an industrywide consolidated data reporting system are good examples of INPO's role in supporting and furthering industry progress.

## RISK-INFORMED TECHNOLOGY DEVELOPMENTS WITHIN THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS FOR NUCLEAR POWER PLANTS

### PURPOSE

The purpose of this paper is to provide information on the risk-informed technology developments within the American Society of Mechanical Engineers (ASME) for nuclear power plants. This paper provides background on ASME efforts and processes, a description of successful initiatives in Inservice Inspection (ISI) and Inservice Testing (IST), current developments, and future anticipation of needed cooperation between all the Stakeholders in risk-informing 10 CFR 50.

### BACKGROUND

ASME recognized the need for risk-informed methods in the formulation of policies, codes, standards and guides in the later 1980s by organizing multi-disciplinary research task forces on risk-informed ISI and inservice testing IST. These research groups, financially supported by both domestic and international organizations from Industry and government, including the U.S. Nuclear Regulatory Commission (NRC), worked to determine appropriate risk-informed methods for developing inspection and testing guidelines for several applications. Initial pilot plant applications were used to demonstrate the proposed methods. A series of ASME publications [1-6] presents this work which includes both nuclear and industrial applications.

From this work, the ASME was able to demonstrate that risk-informed methods offered the potential to technically enhance existing ISI and IST programs by relating inspection and test requirements to the failure modes of a component and its associated risk rather than on a prescriptive set of general requirements that had been developed using traditional engineering judgment with some implicit risk considerations. Risk-informed strategies could be structured to enhance exams and tests for high safety significant components and to reduce unnecessary requirements for low safety significant components. The ASME determined that these enhancements could be performed using an existing plant's Probabilistic Risk Assessment (PRA) when they were blended with appropriate expert judgement and operational experience. Implementation of these methods would offer the ability for Industry and the regulator to better focus and allocate limited resources to the high safety significant components thereby enhancing overall plant safety. ISI and IST programs would also now be better correlated with PRA results and insights for each nuclear plant.

Given these promising results, the ASME worked with the NRC, individual utilities, and key industry groups during the past several years to implement risk-informed ISI and IST approaches into appropriate ASME Codes and Standards, NRC Regulatory Guides, and Industry documents.

A diagrammatic outline of the process for development, endorsement, and implementation of ASME Codes and Standards appears in Figure 1. Codes and Standards development is the result of Stakeholder cooperation through interfaces for providing input and feedback among the cognizant organizations. In addition to NRC and Licensee cooperation, ASME also seeks the cooperation of manufacturers, constructors, designers, laboratories, material suppliers, and general interest parties to provide stability and balance. In essence, ASME Codes and Standards Committees are composed of volunteers from each of these identified parties working together to develop consensus Codes and Standards to address the needs of all Stakeholders; including Industry, government, other regulatory bodies, and the public. Only Codes and Standards developed through this process can meet national consensus standards requirements and the quality expectations of the ASME.

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## RISK-INFORMED ISI &amp; IST

ASME, in its consensus Codes and Standards process, provides three formal methods, (in addition to regularly scheduled Editions), for technical information affecting Codes and Standards, to reach the public: Addenda, Interpretations, and Code Cases. Code Cases are issued for voluntary use to clarify the intent of existing requirements or to provide, when the need is urgent, rules for a new technology such as the risk-informed application processes now being used for ISI and IST.

The ASME Board on Nuclear Codes and Standards (BNCS) has chosen Code Cases to incorporate risk-informed research results for ISI and IST. In the case of ISI, three Code Cases [7-9] have been approved through the efforts of Section XI of the ASME Boiler and Pressure Vessel Code. In the IST area, the ASME Operation and Maintenance Committee has also developed a series of Code Cases [10-14]. Currently, the BNCS is looking at other methods for other Codes and Standards that may be approved in the future. These Cases will eventually be incorporated in later Editions or Addenda of their parent Codes and Standards or in new Codes and Standards. The results of research programs, Industry developments and pilot plant applications on risk-informed technology have formed the technical bases for initiating these Code changes.

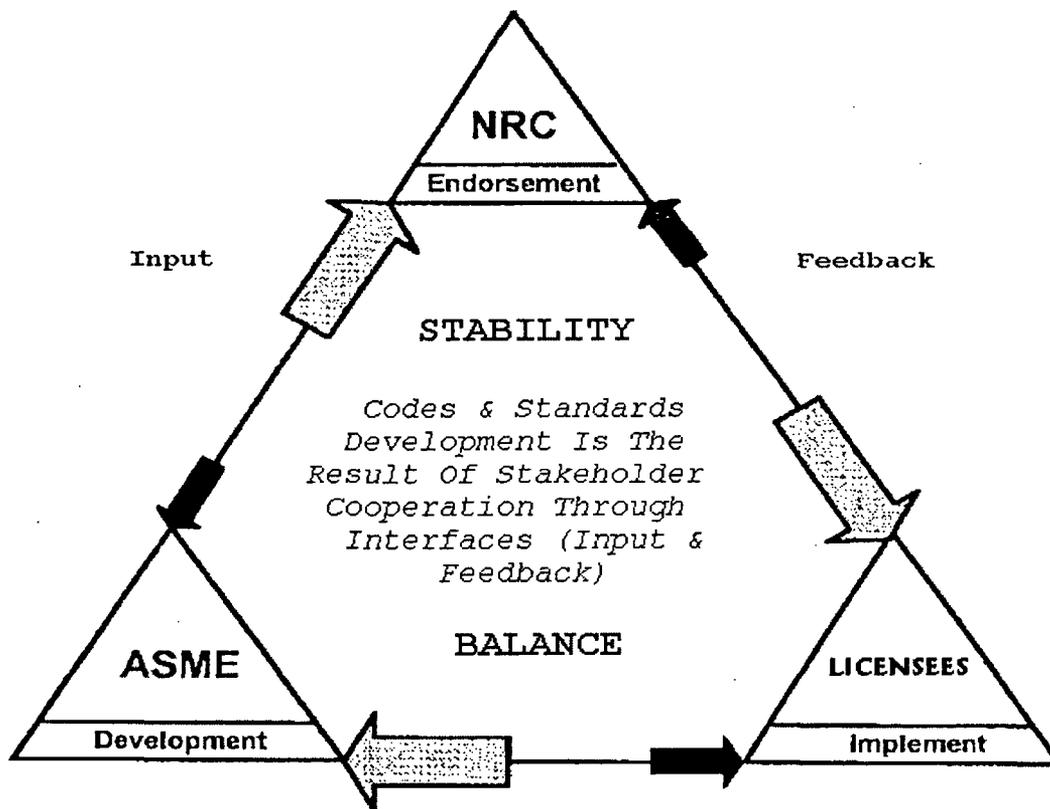


Fig. 1 Process to Develop ASME Nuclear Codes and Standards

As these Code Cases are incorporated into later Editions and Addenda of their applicable Codes, it is incumbent on the NRC to reach a decision on the acceptability of these revisions. As shown in Figure 1, the endorsement of ASME Codes and Standards is the sole responsibility of the NRC in conjunction with implementation of these new requirements by Licensees.

The pilot plants for ISI and IST began to receive NRC approval in 1998. The remainder of the Industry is now beginning to develop plant-specific programs or to budget resources to initiate work on at least one of these applications in 2000. To support this major initiative, the NRC has developed Regulatory Guides 1.175[15] and 1.178[16] for plant-specific, risk-informed decisionmaking for IST and ISI, respectively. The above ASME information and results were utilized by NRC in the development of these guidance documents, and these ASME applications provided useful examples during the development of NRC Regulatory Guide 1.174 [17].

These significant technology, standards, and regulatory developments provide a solid foundation to broaden the use of risk-informed technology in achieving further benefits in plant and personnel safety and in better utilizing stakeholder resources.

## CURRENT DEVELOPMENTS

As Code Cases were being developed for risk-informed ISI and IST, the ASME BNCS realized a much broader need for risk-informed technology throughout other committees. Following review of methodologies, results, implementation of policy issues, and organizational relationships, the Chair of BNCS requested all committees reporting to BNCS to consider the use of risk-informed technology for the modification of existing Codes and Standards under their purview. The committees reporting to BNCS include:

- Boiler & Pressure Vessel (BPV) Subcommittee on Nuclear Power (Section III-Division 1 and Division 3) - Division 3 Containment Systems for Spent Fuel and High-Level Waste Transport Packagings
- BPV Joint ACI-ASME Committee on Concrete Components for Nuclear Service (Section III-Division 2)
- BPV Subcommittee on Nuclear Inservice Inspection (Section XI)
- Committee on Cranes for Nuclear Facilities (CNF)
- Committee on Nuclear Air and Gas Treatment (CONAGT)
- Committee on Nuclear Quality Assurance (NQA)
- Committee on Nuclear Risk Management (CNRM)
- Committee on Operation and Maintenance of Nuclear Power Plants (O&M)
- Committee on Qualification of Mechanical Equipment Used in Nuclear Power Plants (QME)

In response to this request, several of the BNCS committees have met with cognizant individuals who have developed the risk-informed ISI and IST applications to assist in determining where risk-informed technology may offer benefits in other consensus Code writing efforts. Three key developments are already underway and are summarized here.

### ◆ Probabilistic Risk Assessment Standard

The scope and adequacy of PRAs was recognized by ASME as an important element encompassing all these risk-informed Codes and Standards applications. In the summer of 1997 the ASME BNCS recommended development of a consensus standard for the use of PRA in the nuclear industry. After approval of this recommendation by the ASME Council on Codes and Standards an ASME Project Team and a new Standards Committee, the Committee on Nuclear Risk Management (CNRM), was formed in early 1998 to execute the development of a PRA Standard that would provide a foundation for all existing and future risk-informed applications for nuclear power plants.

The CNRM and the Project Team charged with drafting the Standard has received strong support from NRC and Industry and maintains liaison with the American Nuclear Society (ANS) and Institute of Electrical and Electronic Engineers (IEEE) nuclear standards developing groups. A draft of the PRA Standard [18] was issued for broad public review and comment in February 1999. Forty-six sets of comments from individuals and organizations, including international reviewers, were received. Some, notably from Industry, provided strong support for a major revision to reflect the ongoing Peer Review PRA Certification process. Significant and supportive comments were received from NRC staff and the Advisory Committee on Reactor Safety (ACRS). The Project Team is now developing a revised draft responding to these comments. ASME plans to complete and issue the Standard in 2000.

#### ◆ Qualification of Mechanical Equipment

As an extension of the risk-informed IST efforts, discussions have been held with the ASME Committee on the Qualification of Mechanical Equipment (QME) to determine how risk-informed methods may enhance their Code requirements. It has been determined that the use of probabilistic and statistical methods would be helpful in determining appropriate qualification requirements and criteria for components that are replaced in existing plants and for the installation of mechanical equipment in new reactors. Current criteria, using traditional methods, utilize a single factor of safety that does not appropriately account for all uncertainties, and are viewed by Stakeholders as possibly resulting in unnecessary burden in the qualification of equipment. Risk-informed technology offers the ability to evaluate present requirements and to suggest more appropriate safety margins for the various loading and environmental conditions of concern. Partial safety factors are used to deal with various uncertainty sources. Initial work is expected to start in 2000, including the relationship of this work to risk-informed Graded Quality Assurance initiatives.

#### ◆ Risk-Informed Design

A first phase of work is being completed within ASME for application to risk-informed design. This initial project is investigating the use of risk-informed methods to address design rules for nuclear plant piping systems, particularly in how safety factors affect overall piping reliability. Considering reliability-based methods already utilized by civil and offshore structural engineers in steel and concrete design and construction codes, the ASME is evaluating the use of Load and Resistance Factor Design (LRFD) methods in how these approaches would benefit ASME design rules such as those contained in the BPV Code Section III. These approaches have been shown in the civil engineering community to result in more efficient designs for manufacturing and construction while maintaining or enhancing adequate levels of safety. Further work in this area is also planned for 2000.

### NEED FOR COOPERATION

The proposed initiative to risk-inform 10 CFR Part 50 is consistent with the policy and efforts already underway within ASME. However, this initiative will impact existing ASME Codes and Standards and provides need for new requirements for nuclear Systems, Structures, and Components (SSCs) reclassified as Risk-Informed Safety Class 2 (RISC-2) and Risk-Informed Safety Class 3

(RISC-3). From an initial review of NRC documents on the initiative, changes to the following rules could possibly impact ASME Nuclear Codes and Standards:

10 CFR Part 50.54(a)(3)  
10 CFR Part 50.55a  
4, 37, 40, 42, 43, 45, and 46  
10 CFR Part 50 Appendix B  
10 CFR Part 50 Appendix J  
and 10 CFR 100 Appendix A

ASME recognizes that this major initiative presents new challenges and questions well beyond those faced in the development of risk-informed ISI and IST applications. The use of a risk-informed, performance-based framework across all nuclear SSCs has the potential to impact bases in areas such as design, operation and maintenance, and quality assurance. Other organizations and requirements would also be impacted since ASME references other documents, such as ANS documents and NRC Regulatory Guides, to classify SSCs. ASME also recognizes the need to blend risk-informed and deterministic insights in the categorization and treatment of requirements for SSCs. However, how these insights are used in applications such as risk-informed design and risk-informed quality assurance pose new challenges in balancing design, inspection, and testing to assure adequate safety and reliability. ASME's involvement in developing risk-informed Part 50 requirements would appear to be appropriate and consistent with its development of other risk-informed applications.

After the risk-informed criteria has been agreed upon to reclassify SSCs, using the NRC Staff's proposed risk-informed classification system, determination of what requirements need to be applied to RISC-2 SSCs, and what requirements need to be applied to RISC-3 SSCs to assure they remain functional, appears to be an area where ASME Codes and Standards can make significant contributions. Element 5(a) of section III of the Advanced Notice of Proposed Rulemaking (ANPR), included in SECY-99-256 [19], regarding the proposed new appendix appears to indicate that each plant would determine these functional requirements. Section IV(D) of the ANPR notes that the NRC intends to develop regulatory controls for RISC-3 SSCs to ensure they would be maintained functional. ASME's involvement in determining these requirements would appear to be appropriate and consistent with its role in developing Industry standards. Some current ASME Code requirements applicable to existing classification systems are "special treatment" actions included to comply with NRC deterministic requirements (i.e., quality assurance) while other requirements (e.g., design rules and repair/replacement rules) assure the function of the SSC. ASME's experience with passive pressure boundary functional assurance in the boiler and pressure vessel industry (non-nuclear) give ASME clear insights into what is necessary to maintain function without special treatment requirements such as quality assurance.

ASME wants to be proactive and cooperate with all cognizant Stakeholders in determining the impact of these proposed developments. In order to address new challenges and questions related to risk-informed 10 CFR Part 50 initiatives, ASME with other Stakeholders will need to continue to be proactively working together to identify where changes in our Codes and Standards are appropriate.

## CONCLUSION

All of the above developments demonstrate that ASME has taken a leadership role on a number of initiatives and is already clearly committed to the use of risk-informed technology in its research and Codes & Standards work. The ASME believes that it has accomplished its initiatives to date by:

- Maintaining or Improving Safety
- Reducing Burden
- Reducing Worker Radiation Exposure

In addition, some of the identified efforts in risk-informing Part 50 clearly fit with ASME's traditional role of determining appropriate requirements to assure reclassified SSCs remain functional. The initiative proposed by the NRC to risk-inform 10 CFR Part 50 is consistent with the policy and initiatives already underway within ASME. The ASME views that the implementation of this technology in future initiatives offers the opportunity to achieve significant additional improvements in safety, worker radiation exposure reductions, and burden reduction benefits for all nuclear power plant Stakeholders.

## ACRONYMS

ANS	American Nuclear Society
ANPR	Advanced Notice of Proposed Rulemaking
ASME	The American Society of Mechanical Engineers
BNCS	Board on Nuclear Codes and Standards
BPV	Boiler and Pressure Vessel
CFR	U.S. Code of Federal Regulations
CNF	Committee on Cranes for Nuclear Facilities
CNRM	Committee on Nuclear Risk Management
CONAGT	Committee on Nuclear Air and Gas Treatment
CRTD	ASME Center For Research and Technology Development
ISI	Inservice Inspection
IST	Inservice Testing
LRFD	Load and Resistance Factor Design
NRC	U.S. Nuclear Regulatory Commission
NQA	Nuclear Quality Assurance
O&M	Operation and Maintenance
PRA	Probabilistic Risk Assessment
QME	Qualification of Mechanical Equipment
RISC	Risk-Informed Safety Class
SSCs	Systems, Structures, Components

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## **RISK-INFORMED PART 50**

John McGaha  
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### **Introduction and Background**

Industry and NRC confidence in the insights from PRA studies has steadily progressed since the issuance of recommendations in the Kemeny and Rogovin reports on the Three Mile Island accident that recommended the use of PRA to identify potential plant vulnerabilities. Advances in technology and the enhancements in analytical techniques now enable risk evaluations to be performed in a time frame that enhances operational and regulatory decisions. Such improvements are compatible with the needs of a competitive generating market. The primary benefit of applying risk insights has been in the improved safety focus. With the need to be more cost competitive, licensees must maintain safety focus as well as maximize the cost benefits of a risk-informed approach

Since 1988 there have been several specific PRA projects that have demonstrated the benefits of risk-informed regulation.

- Plant specific responses to NRC Generic letter 88-20, *Individual Plant Examinations*
- Issuance and implementation of 10 CFR 50.65, *Requirements for monitoring the effectiveness of maintenance at nuclear power plants.*
- NRC endorsement of improved methodologies to focus on inspections and tests that have safety significance through risk-informed inservice inspection and testing programs.
- NRC endorsement of changes to technical specification allowed outage times.
- Introduction of an improved, risk-informed NRC licensee assessment, enforcement and oversight process, which is being developed through a nine-plant pilot project with a scheduled industry-wide implementation date of April 2000.

These experiences suggest there is sufficient confidence to further investigate the use of generic risk-informed improvements to the NRC regulatory process. Such changes are expected to increase focus on safety-significant matters while improving regulatory efficiency and effectiveness resulting in reduced burden.

### **Industry Concerns**

#### **1. Uncertain Environment**

Before further resources are expended, a higher degree of regulatory predictability and benefit must be established. The ground rules must be solidified and expected results identified before proceeding. This can be achieved through expedient NRC assessment and resolution of the ANPR comments and through developing a NRC-endorsed guideline.

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## 2. Cost Benefit

The final approach must be pragmatic and practical and provide a tangible cost/benefit. In addition, a risk-informed approach for improving NRC technical and operational requirements (similar to Option 3 of SECY-98-300) must be expedited to provide a better industry appreciation for the potential benefit of proceeding with risk-informed regulation. Currently, costs appear to be high with uncertain benefits.

## 3. Voluntary Implementation

As discussed in SECY-98-300, any risk-informed approach must also be voluntary. Plants that see no benefit implementing risk-informed regulations should not be forced. However, SECY-99-246 appears to be moving away from this position by requiring licensees to consider risk impact in non-risk amendment submittals.

### **Industry's General Approach**

The industry believes that implementing a risk-informed approach for improving the safety-focus of the NRC regulatory process is a multi-part project.

4. Define the scope of structures, systems and components (SSCs) that are encompassed by an improved safety-focus (risk-informed) approach, and implement rulemaking proceedings to change the SSC scope for operational and administrative regulations (Option 2 to SECY 98-300);
5. Identify, assess, and amend the specific NRC technical and operational requirements, including the associated guidance documents, to reflect risk-insights, new technologies, new or improved analytical techniques, and operating experiences (Option 3 to SECY 98-300);
6. Change administrative regulatory requirements to be consistent with an improved risk-informed regulatory framework.

A parallel-phased approach is needed to:

- Simplify and ease the administrative process associated with a large and complex rulemaking petitions;
- Ease the industry and NRC resource burden of adopting and implementing amended regulations;
- Provide an opportunity to assess the safety and regulatory benefits on a periodic basis; and
- Allow public input and the lessons learned from the pilot plants to be incorporated in the final rule.

### **Implementing "Option 2," Risk-Informed SSC Regulatory Scope**

Industry is working with the NRC staff to further develop an approach for risk-informing NRC special treatment requirements based on SECY 99-256, *Rulemaking Plan for Risk-Informing Special Treatment Requirements*.

The industry supports the introduction of a new appendix to 10 CFR Part 50, Appendix T, that would list the elements of a risk-informed methodology for categorizing SSCs. Yet, we believe that it would be more beneficial to develop implementation guidelines for NRC review and endorsement that are consistent with the new regulation rather than include the implementation details in the new Appendix T. Advances in technology and the continual refinement in analytical and engineering analyses could easily result in the development of more efficient and improved methods of categorizing SSCs based on risk-insights. Prescribing detailed implementation procedures in the new Appendix T could preclude or significantly discourage future improvements.

The industry is developing a draft guideline for implementing Option 2 and will be interacting with the NRC staff to reach an understanding on the implementation details.

### **Improving NRC Technical Requirements through a Risk-Informed Approach**

In a predictable and stable regulatory process, it is important that the scope of regulatory oversight, the SSC scope of the regulations, and the technical requirements have the same basis. Improvements to technical and operational requirements are more complex, yet need to be completed in a time frame that provides minimal inconsistency in the NRC regulatory basis.

The industry generally agrees with the overall NRC approach for implementing Option 3, as described in the NRC workshop in September 1999: identify the options, assess the options, and implement the options to a schedule and priority based on the benefits (safety and economic).

From the industry preliminary reviews, there appear to be only a few instances where significant changes to regulations would be needed. The major area to focus industry and NRC attention is regulatory guidance documents. We recognize that this is a significant effort, yet is necessary to ensure regulatory consistency. The list of potential Option 3 regulations identified by the NRC staff is similar to those identified by the industry.

### **PRA Standards**

We acknowledge the need for some standardization in relation to PRAs. Yet, it is equally important to ensure that industry standards are practical and will be readily adopted by a good proportion of plants. The industry has already implemented a peer review process to categorize PRAs and to ensure an appropriate level of completeness and accuracy commensurate with the intended licensee specific PRA application(s). The important aspect is not the nomenclature of the standard, but that the standard is appropriate for the circumstances, is endorsed by the NRC, and can be readily adopted by licensees.

### **Conclusion**

The industry is supportive of the agency's move towards risk-informed regulation and oversight. However, a concerted effort is needed to ensure consistency in principles and realization of cost & safety benefits as we move forward. Continued industry support is

contingent upon practical, pragmatic approaches that provide cost/beneficial improvements to the regulatory process.



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Joan Claybrook, President

Statement of James P. Riccio  
Staff Attorney  
Public Citizen's Critical Mass Energy Project  
Before  
The U.S. Nuclear Regulatory Commission's Stakeholder Meeting

December 16, 1999

Good Morning, my name is James Riccio. I am the staff attorney for Public Citizen's Critical Mass Energy Project. It is a pleasure to once again present our views to the Nuclear Deregulatory Commission. We are here this morning to address three issues:

1. Risk-informing Part 50,
2. Revised Reactor Oversight Pilot Program, and
3. The 2.206 Petition process

Risk-informing Part 50: Deregulating Nuclear Safety Standards

Public Citizen views NRC's efforts to "risk inform" the nuclear safety regulations contained in 10 CFR part 50 as yet another in a series of attempts by the agency and industry to deregulate safety standards based not upon safety but upon cost. We have already witnessed the NRC's Reduction of Requirements Marginal to Safety, Cost Beneficial Licensing Actions, the use of Notices of Enforcement Discretion to avoid shutdowns and allow restarts and the "New and Improved" Technical Specifications that reduced the limiting conditions of operation by 40%.

Unfortunately, it appears that the NRC and the nuclear industry have reverted to a pre Three Mile Island mind-set where they do not believe that another meltdown will occur. The Nuclear Energy Institute testified before the senate oversight committee that this deregulation of 10 CFR Part 50 safety standards was possible because of the improved safety record of the nuclear industry. I do not believe that the nuclear industry has actually improved the safety of the reactors it operates, I believe that they and the NRC have become more adept at manipulating their performance indicators. But we could debate that issue on into the evening.

The fact that the U.S. nuclear industry has not melted down a reactor in the last 20 years is not a sufficient reason for deregulating those requirements that helped achieve that record. The NEI's assumption is based upon the specious argument that operating

Ralph Nader, Founder

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without a meltdown for a finite period of time means that safety is adequate. Hal Lewis, a former member of the Advisory Committee on Reactor Safeguards, recognized this fallacy when the ACRS took up the original license renewal rule. Mr. Lewis stated that:

"the general argument that the fact that one has operated safely for a finite period of time proves that the safety level is adequate is just not statistically right, because there isn't that much history in the industry. And it's a trap. Because other agencies, for example, people have used the argument that they had 24 successful Shuttle flights, to show the level of safety was adequate. And in retrospect, after one disaster, it turned out not to be. The Soviets, after Chernobyl, suddenly discovered that the level of safety they had before Chernobyl was not adequate. But the day before Chernobyl they would have said it was adequate on the basis of operating history.

So it is a general trap, a psychological trap, to believe that because something has not happened, you are doing just fine."

(Advisory Committee on Reactor Safeguards, Subcommittee on Regulatory Policies and Practices: License Renewal, ACRS-T-1789, March 26, 1990, pp. 153, 154.)

We have several other concerns with the use of probabilistic risk assessment in the regulation of nuclear reactors.

PRA's are premised upon the supposition that the nuclear reactor has been designed, constructed, operated and maintained in compliance with its design basis. This supposition is not based in fact. The shutdown of the Millstone reactors and the subsequent closure of Haddam Neck and Maine Yankee are evidence of this fallacy. Maine Yankee had cable separation problems that dated back to original licensing. Haddam Neck was finally closed when it was revealed that its ECCS would not have performed its function for the 28 years that it operated. These examples are documented in my report *Amnesty Irrational*, a copy of which is available on my web site at [www.citizen.org](http://www.citizen.org).

However, if you prefer not to accept the conclusions of my report because of my anti-nuclear credentials, I suggest you read the Office of Analysis and Evaluation of Operational Data (AEOD) report on undetected failures in safety systems. In a review of 33 events from the Accident Sequence Precursor database from 1991 through 1993, the AEOD found that "failures existed in systems important to safety and in some cases, remained undiscovered for long periods of time, 4 failures for a period of 1 to 10 years and another 4 for more than 10 years and up to 18 years. Although information is not definitive, additional four events may have gone undiscovered since initial start up while two others existed since a plant modification."

Another problem with NRC's use of PRA is that the assessments do not adequately reflect reality. The NRC and the NEI have been tossing around figures for core damage frequency of 1 in 10,000, 1 in 100,000 or 1 in a million. A slide used at the

ACRS hearing on this issue had a core damage frequency of  $1 \times 10^{-7}$  or 1 in 10 million. I wish nuclear reactors were that safe. Unfortunately, nuclear reactors are a lot more dangerous than the NRC and the nuclear industry would have the public believe.

The reality is that a nuclear accident can occur at a U.S. nuclear power plant that would have off site releases of radiation comparable to that of Chernobyl. In testimony before Congress in 1986, NRC Commissioner James Asselstine testified that:

While we hope that their occurrence is unlikely, there are accident sequences for U.S. plants that can lead to rupture or bypassing of containment in U.S. reactors which would result in the off-site release of fission products comparable or worse than the releases estimated by the NRC staff to have taken place during the Chernobyl accident.

That is why the Commission told Congress recently that it could not rule out a commercial nuclear power plant accident in the United States resulting in tens of billions of dollars of property losses and injuries to the public.

In 1990, the NRC was again asked the probability of a severe core melt accident at a U.S. nuclear reactor. However, the NRC refused to provide the National Academy of Science's National Research Council with the number they were seeking. In the NRC's response to the National Research Council, the agency stated that it "would strongly encourage your committee not to use any number based on assuming an average severe core damage frequency...." Rather, the NRC suggested that the National Research Council state that "there is reasonable evidence that the ensemble of operating U.S. nuclear power plants meet NRC Safety Goals and that there is reasonable assurance that the health and safety of the public are adequately protected."

Unfortunately, the Nuclear Regulatory Commission seems to be in denial of the fact that meltdowns have occurred at U.S. nuclear reactors and that this probability makes the nuclear industry anything but "safe." The NRC's latest probabilistic risk assessments don't even account for the meltdown at Three Mile Island or the earlier meltdowns at Fermi-1 and other test reactors. The U.S. Nuclear reactors that have experienced partial core melt accidents include:

EBR-1 (Experimental Breeder Reactor)	11/29/55	Idaho Falls, ID
WTR (Westinghouse Testing Reactor)	04/03/60	Waltz Mill, PA
SL-1 (Stationary Low Power Reactor)	01/03/61	Idaho Falls, ID
Fermi-1	10/05/66	Lagoona Beach, MI
Three Mile Island	03/28/79	Harrisburg, PA

Even if you exclude the core melt accidents at the test reactors, the fact is that the U.S. commercial nuclear industry has a core damage frequency of 2 in less than 2500 reactor years.

My final concern with NRC's deregulation of nuclear safety standards is that I've already witnessed how NRC intends to use risk assessment. They are not being used to improve safety; they are being used to improve the economics of this failed technology. I know that individuals in this agency had grave misgivings about how risk assessment was used to avoid steam generator tube inspections at the Farley reactors in Alabama. Three analyses were conducted: one deterministic that said inspect the tubes, one a combination of deterministic and probabilistic which also said inspect the tubes and a final purely probabilistic analyses that finally gave the utility the answer they wanted. Don't inspect the steam generator tubes and operate for another cycle. The NRC staff told the ACRS that you can't "with a risk assessment, tell you if it's a third of the year you're fine and if it's half a year you're not fine. Risk assessments are just not that good." They also said that "you're getting yourself susceptible to much more frequent transients." Dr. Powers of the ACRS stated that "(t)his is all regulation by religion," and concluded that NRC did not have "a defensible basis" for the Farley decision.

The Southern Company and the NRC are gambling. They are betting that Farley can operate for another fuel cycle without a steam generator tube rupture. They are gambling that if a steam generator tube rupture does occur that no more than ten tubes will rupture. They are betting that operators will respond appropriately so that the coolant inventory is not lost causing a meltdown of the core. The NRC and the nuclear industry are gambling with the public health and safety.

If Farley is an example of how the NRC intends to implement "risk informed" regulation, then the nuclear industry is going to melt down another reactor. I believe that the NRC and NEI attempts to "risk inform" 10 CFR part 50 are short sighted and will place the public at greater risk. While I have grave doubts as to this industry's ability to survive in a competitive electricity marketplace, I am certain that this industry can not survive a meltdown of another U.S. nuclear reactor. Unfortunately, if the NRC and NEI are successful in deregulating nuclear safety standards based upon risk assessments then more meltdowns are likely to occur.

#### The Revised Reactor Oversight Pilot Program

The new reactor oversight program is still in its pilot phase. At the last meeting I attended, the regions had not even finished verifying the data submitted by the pilot plants. So in some regards this discussion is premature.

However, it is worthwhile reviewing why we even have a new oversight process. Since the tenure of former Chairman Ivan Selin, the NRC made an effort to make the reactor assessment process more transparent. Much to the chagrin of the industry and NRC senior management, the process became so transparent that the public and the media could determine that the senior managers were not doing their jobs.

The regulatory failure, which precipitated the Millstone debacle, was not caused by any blind spot in the oversight process. As the U.S. General Accounting Office has so ably pointed out, "NRC was slow in placing plants on the Watch List, which is used to

trigger more regulatory attention at an early stage so that plant performance conditions can be improved.” The GAO also noted that “NRC has not taken aggressive enforcement action to force the licensees to fix their long-standing safety problems on a timely basis. As a result, the plant’s condition has worsened, making safety margins smaller.” (U.S. General Accounting Office, Nuclear Regulation: Preventing Problem Plants Requires More Effective NRC Action, GAO/RCED-97-145, May 1997, pp. 2 & 3.)

The oversight process was not the problem! The NRC has had the information necessary to make the correct assessments of problem plants. The senior managers merely have refused to do so.

In Public Citizen’s last version of Nuclear Lemons, we determined using NRC’s own performance indicators that Millstone was among the worst reactors in the nation. If Public Citizen’s Critical Mass Energy Project can figure out the reactors that warrant increased regulatory attention, why can’t NRC’s senior managers? We were using the same data! Unfortunately, NRC senior managers either lacked the will or the integrity to act upon the data they had in hand. Fortunately those senior managers are no longer working at the NRC; they are now pulling paychecks from the industry they worked so hard to protect while supposedly protecting the public health and safety.

Unfortunately, the transparency of the oversight process, which took years to achieve, has been thoroughly lost in the new assessment process. The public has not had any data it can trust since the third quarter of 1998 when NRC, in its inestimable wisdom, scattered AEOD to the winds. Since then we have had to rely upon the discretion of NRC’s senior managers, discretion which in the past has been thoroughly abused.

The new process has attempted to incorporate risk insights into data collection and the assessment process. This is totally inappropriate. You should not be allowing for discretion at the data collection level. A scram should be a scram; a safety system failure should be a safety system failure. The NRC has allowed the industry to split hairs over the difference between functionality and operability by adding a caveat to the performance indicator. Rather than track safety system failures, the new program will track safety system functional failures. You should not attempt to excuse these away by applying some ex-post facto justification based upon risk insights that may or may not be accurate.

We are already seeing industry attempts to manipulate the new indicators. Unfortunately, I believe this was at Mr. Kingsley’s Quad Cities reactors. In discussions before the Pilot Plant Evaluation Panel, NRC staff stated that inspections had found 10 Safety System Functional Failures that were not reported and that most of them had to do with whether it was a “functional” failure or not. Now before NEI or ComEd, begin making excuses about not understanding the new program, let me just add that the NRC also stated that

“we also has some situations where determining that something constituted a functional failure would have effected a bonus being given to the site....

At the implementation level we have found many ways in which performance indicators can be miscounted, misrepresented or influenced, some of which, based on my discussions with the plant over this period, I'm not sure that plant and utility management were even aware of interpretations that some of their staff were making"

(U.S. Nuclear Regulatory Commission, Pilot Program Evaluation Panel Meeting Proceedings, November 17, 1999, p. 28.)

The NRC spent an exorbitant sum of money to hire Arthur Andersen to look at the assessment process and has since ignored their recommendations. Arthur Andersen recommended more objective performance indicators. The NRC has added more subjectivity by splitting hairs over functionality verses operability. Arthur Andersen recommended an economic indicator because, "the threat exists that nuclear utilities, in their desire to cut costs and increase competitiveness, will be forced to impair their operational safety and increase risk." (Arthur Anderson, Study of NRC Senior Management Process, December 30, 1996, p. 23.) Three years after that recommendation was made NRC still has no such indicator and in fact no longer makes operation and maintenance (O&M) costs available to the public.

So, basically we're now left with a reactor oversight process that will likely result in the same abuses that scuttled the previous process. The only good thing that can be said for the new process is that at least it doesn't rely upon the senior managers to abuse their discretion. Instead, it allows the industry to manipulate the data before it even gets to NRC senior managers. The NRC senior managers will have their opportunity to manipulate inspection findings through the significance determination process. Unfortunately, the significance determination process looks like little more than excuse generator, allowing NRC to down play inspection findings.

Public confidence in this agency has been thoroughly undermined by the past abuses of the reactor oversight process. This new process does precious little to rehabilitate the NRC's tarnished image as a rogue agency more concerned with its own survival than fulfilling its statutory obligation to protect the public health and safety.

### 2.206 Petition Process

I have been participating in meetings with the NRC on ways to improve the 2.206 Process for nearly a decade. Less than 24 hours ago, I again met with NRC staff to discuss 2.206. As far as I can tell the only real purpose for that meeting was so that the NRC could walk into this meeting and say we had a meeting.

As far as I am concerned, the 2.206 petition process is only good for one thing: generating media attention in order to embarrass this agency into taking action. You need look no further than the shutdown at Cook to see this point exemplified. The NRC was prepared to allow the reactor to restart despite a petition filed by the Union of Concerned Scientists. It wasn't until Dave Lochbaum got on the telephone and started to generate

some media attention that the NRC changed its position less than 24 hours prior to the scheduled restart at Cook.

As a process, the 2.206 petition is an abysmal failure. The NRC doesn't even have regulations on the books that would allow it to take the action requested by the petitioner. It is basically a device that allows the NRC to shunt aside the public's legitimate concerns into a regulatory cul-de-sac, where the issue is left until it is rendered moot.

I will continue to use the process not because it works but because it is the only avenue the public has been afforded.

I appreciate the opportunity to present Public Citizen's views on these important nuclear safety issues.