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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

P R O C E E D I N G S

[9:05 a.m.]

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

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

[Laughter.]

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

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

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

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

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

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

Commission. It was prepared under the auspices of CSIS.

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

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

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

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

I welcome you all this morning, and very much

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

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

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

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

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

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

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

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

[Laughter.]

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

Thank you.

[Laughter.]

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

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

further on down the line.

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

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

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

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

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

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

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

What I thought I would do is to quickly go through

a little bit of background to try and context what some of the issues are.

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

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

This approach has actually worked very well over

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

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

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

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

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

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

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

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

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

The key milestones we have that we expect to

solicit comments on advanced notice of proposed rulemaking on this - we expect to propose a rule on this issue to the Commission in September of the year 2000; and complete pilot plant activities in July 2001; and implement this rule in 2002.

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

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

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

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

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

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

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

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

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

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

Mr. Chairman, that's sort of the background

information I thought might be helpful.

CHAIRMAN MESERVE: Thank you very much.

It's my intention - or our intention - this morning to have this really be very free form and in this general subject area to invite comment from various of the

other participants. Obviously, we'd be very interested in your perspectives on the program that Ashok has laid out.

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

MR. McGAHA: Thank you, Mr. Chairman.

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

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

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

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

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

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

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

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

The obvious benefit of this, as the nuclear plants

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

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

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

As with any new initiative, it takes time. It takes time to achieve the desired results. We are going to get some bumps and bruises along the way. But nevertheless, our experience to date gives us both the confidence anc the motivation to further investigate application of the

risk-informed improvements to our regulatory documents.

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

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

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

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

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

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

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

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

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

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

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

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

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

standard set of specifications. Some utilities have expended heavy resources to develop sophisticated PRAs and

risk-analysis tools.

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

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

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

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

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

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

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

CHAIRMAN MESERVE: Thank you very much.

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

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

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

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

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

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

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

But if you'd just look at it from a pure business

decision, return on investment, we may not have made the decision to do that pilot. But when you throw in the soft benefits, the reduction in man-REM exposure, the ability to be able to focus on some of the other issues rather than doing some of the inspections that did not have any safety significance. So there are a lot of secondary benefits.

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

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

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

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

Commissioner Dicus.

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

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

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

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

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

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

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

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

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

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

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

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

MR. COLVIN: Thank you, Mr. Chairman.

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

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

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

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

expectations and time schedules we could then develop.

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

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

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

CHAIRMAN MESERVE: John Ahearne?

MR. AHEARNE: Just a couple of general comments.

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

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

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

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

There is a Society for Risk Analysis, which has

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

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

[Laughter.]

CHAIRMAN MESERVE: And lots of it.

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

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

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

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

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

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

Many of the countries look to the NRC to see how

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

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

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

CHAIRMAN MESERVE: Commissioner Diaz?

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

I just kind of sense that in the background there

is an issue that sometimes doesn't come up to the forefront. That issue is the continued push and pull, not of boric acid, but continuous push and pull to be prescriptive or not

to be prescriptive.

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

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

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

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

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

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

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

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

Thank you.

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

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

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

Unfortunately, it appears that this agency and

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

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

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

Challenger explosion.

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

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

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

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

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

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

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

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

NRC staff testified before the ACRS that their PRAs were not good enough to allow them to make these type of judgments, yet the NRC did just precisely that. Farley now is basically gambling. They're gambling you're not

going to have a steam-generated tube rupture, you're gambling that rupture won't deplete the inventory and melt down the core.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

If you felt that we did have the type of design basis information that we need, together with the PRAs that are realistic, would you have a comfort level there to go to

the risk-informed where we are, or is there something else?

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

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

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

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

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

CHAIRMAN MESERVE: Okay. Paul Gunter and then Joe

Colvin, then Ed McGaffigan.

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

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

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

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

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

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

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

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

CHAIRMAN MESERVE: Joe?

MR. COLVIN: Thank you, Mr. Chairman.

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

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

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

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

[Laughter.]

MR. COLVIN: But --

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

[Laughter.]

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

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

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

CHAIRMAN MESERVE: Commissioner McGaha.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

MR. FERGUSON: Yes, the discussions are very interesting, and of course, the ASME is working on a standard to provide the criteria for the PRAs, to give them a much firmer bases. We're working through that. We expect

that to be done by about the end of 2000.

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

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

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

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

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

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

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

On the PRA standard, as I mentioned earlier,

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

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

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

Thank you.

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

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

needs.

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

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

[Laughter.]

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

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

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

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

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

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

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

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

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

not really sure you want to be there.

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

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

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

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

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

CHAIRMAN MESERVE: That's very helpful.

Commissioner Merrifield?

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

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

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

you have not been sufficiently answered at this point.

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

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

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

Thank you.

CHAIRMAN MESERVE: Mr. Kingsley?

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

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

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

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

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

Thank you.

CHAIRMAN MESERVE: Mr. McGaha?

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

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

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

CHAIRMAN MESERVE: John Ahearne.

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

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

MR. KINGSLEY: Oh, I understand.

[Laughter.]

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

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

[Laughter.]

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

I am, as I think are all five members of this Commission, a strong supporter of research; and there are indeed - no, let me finish - and there are indeed some

outside of this Commission, who are not as robust supporters of the efforts that we have here at this agency.

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

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

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

[Laughter.]

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

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

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

Thank you.

[Break.]

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

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

MR. TRAVERS: Thank you, Mr. Chairman.

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

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

enforcement program and reporting requirements.

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

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

Early in 1999, in response to Commission direction, the staff proposed a revision to the reactor

oversight process. The objectives of the revised oversight process were to develop a new process that was more objective, predictable, scrutable and risk-informed.

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

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

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

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

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

Utilities and the NRC staff.

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

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

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

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

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

There have been questions about capturing and how we might capture and report qualitative insights in our inspection programs - and this has been on both sides, both from external stakeholders and the NRC staff. So we're

evaluating that issue and others, as well; including, for example, areas of the significance determination process that needs to be further developed, such as, significance determination process and how it would be applied to shut down and the containment performance are as well.

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

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

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

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

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

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

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

It is clearly a challenge, one that we recognize

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

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

CHAIRMAN MESERVE: Thank you, Bill.

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

I wonder if he'd be prepared to share his views

with us?

MR. KINGSLEY: Certainly.

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

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

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

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

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

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

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

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

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

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

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

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

what's driving them.

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

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

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

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

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

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

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

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

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

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

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

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

We found issues with rigor. We found issues with training of data stewards. We have just completed a reactor

nuclear oversight process on just the performance indicators; and we've found, and we've been started shortly after Quad Cities on our other four stations, about gathering data, ensuring we can report. We've been reporting up through our nuclear board committee what these indicators are, already presenting them.

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

We have also found that this process is served to

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

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

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

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

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

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

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

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

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

There needs to be - and I talked earlier about a

routine means to assess where are we. Where are we? Sit

down. Good open dialogue.

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

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

Thank you very much.

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

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

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

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

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

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

CHAIRMAN MESERVE: Other comments?

Gary Leidich?

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

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

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

As you know, INPO focuses on operational and

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

But in looking at those performance indicators through the third quarter of '99, industry performance continues to improve. We measure operational aspects, safety aspects, and no matter how you slice and dice, after

years of looking at those indicators, the industry performance really supports the kind of changes that are being made here.

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

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

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

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

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

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

CHAIRMAN MESERVE: Commissioner Dicus.

COMMISSIONER DICUS: Thank you.

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

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

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

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

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

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

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

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

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

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

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

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

MR. LEIDICH: Mr. Chairman.

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

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

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

CHAIRMAN MESERVE: Mr. Riccio.

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

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

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

However, it's worthwhile reviewing why we're even in a new oversight process. Since the tenure of the former

chairman, Ivan Sellin, the NRC has made very good efforts to make the oversight process more transparent. Much to the chagrin of the industry and to the former senior managers, that process became so transparent that we were able to determine that they weren't doing their jobs.

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

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

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

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

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

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

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

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

the NRC scattered AEOD to the winds.

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

You shouldn't 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, specifically on the safety system failure side.

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

We're already seeing industry attempts to manipulate these indicators; and I appreciate Mr. Kingsley's

candor in addressing what's been going on at Quad Cities. Approximately ten safety system function failures were not reported out there, basically; and it came down to then splitting hairs over, whether it was a functional failure or whether it was operability.

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

the NRC managers had to say. "We had some situations where determining that something constituted a functional failure would have affected a bonus being given at the site." That's a serious problem.

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

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

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

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

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

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

They also recommended that there be an economic performance indicator because, quote, "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."

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

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

oversight process that may result in the same abuses that scuttled the previous program. The only good thing that can be said is that at least the senior managers aren't going to have to abuse their discretion. They're allowing the

industry to manipulate the data so they can just go ahead from there.

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

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

CHAIRMAN MESERVE: Commissioner McGaffigan.

COMMISSIONER McGAFFIGAN: Aren't there others ahead of me?

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

COMMISSIONER McGAFFIGAN: I seem to be the designated respondent here.

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

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

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

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

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

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

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

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

[Laughter.]

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

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

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

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

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

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

COMMISSIONER McGAFFIGAN: I'll duck out here.

[Laughter.]

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

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

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

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

[Laughter.]

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

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

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

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

we need to be about.

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

CHAIRMAN MESERVE: Mr. McGaha.

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

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

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

corrective action cross-cutting area.

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

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

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

CHAIRMAN MESERVE: Other comments?

Mr. Colvin?

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

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

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

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

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

So, when we start looking at the - at whether the essential elements are in place, I think from the standpoint

of protection of the public health and safety, they are in place. I think from a standpoint of looking at when you implement these programs, are they complete or is there still work to be done, I think there still is always work to be done in those areas. I think as Mr. Kingsley has articulated, that's an ongoing issue.

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

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

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

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

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

Thank you.

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

he needs to make it?

Mr. Gunter?

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

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

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

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

The initiative on the oversight process did not start in industry. This is an initiative that was started at the Commission level once we saw what was happening in

many, many activities.

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

Thank you.

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

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

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

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

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

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

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

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

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

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

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

CHAIRMAN MESERVE: Thank you.

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

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

MR. COLLINS: Yes, good morning.

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

[Laughter.]

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

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

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

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

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

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

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

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

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

The final product of the 2.206 is a director's decision that issued by the office that's been asked to

review this specific concern. The issues that are still on our plate today, we believe, and we're discussing the solution to many issues in the past, but the issues that are on our plate today is an appeal process.

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

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

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

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

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

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

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

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

In a go forward direction, we now have management directive 8.11 published in the Federal Register since

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October '99, seeking stakeholder and public comments for suggested changes to the 2.206 process. I mentioned the meeting we had yesterday with the UCS task group.

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

management directive in August of 2000.

So, we are - it's a work in progress. I think we have responded to many of the stakeholders' concerns. There are still some tough issues, and we look forward to continuing to work with the stakeholders, particularly

through the comment period to finalize this process and move forward, but I have a feeling there's always going to be some manner of changes in efficiencies as our process improves.

CHAIRMAN MESERVE: Thank you.

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

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

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

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

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

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

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

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

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

you accept at least one petition.

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

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

We've seen a lot of the petitions kind of twist in

the wind for a very long time, and eventually are rendered moot, by either, you know, the NRC taking some action, which you know, is laudatory; or by it being basically rendered moot by the reactor restarting, or more recently, with the reactor shutting down permanently and never coming back on line.

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

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

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

CHAIRMAN MESERVE: Mr. McGaha.

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

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

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

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

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

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

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

CHAIRMAN MESERVE: Mr. Ahearne?

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

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

striking, I think, in this CSIS study, we ended up with 13 issues. This is a consensus report. It had a lot of

industry involvement. One of those 13 issues was the 2.206 process.

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

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

CHAIRMAN MESERVE: Mr. Gunter.

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

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

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

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

CHAIRMAN MESERVE: Mr. Collins.

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

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

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

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

Thermalag, each plant in fact has a plant-specific order in that regard; and that plant-specific order details very specifically the actions that are necessary to be taken to mitigate effects of Thermalag and it has a date certain

of when those actions will be complete. All licensees are required to adhere to those plant-specific orders.

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

MR. GUNTER: Can I respond, though?

CHAIRMAN MESERVE: Please.

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

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

It can be a request for schedule changes due to

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

CHAIRMAN MESERVE: Other comments on the 2.206 issue?

COMMISSIONER MERRIFIELD: Mr. Chairman.

CHAIRMAN MESERVE: Yes.

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

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

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

Hopefully, we can go into this in more detail in

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

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

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

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

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

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

quarters of magnitude improvement in the process.

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

[Laughter.]

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

CHAIRMAN MESERVE: Who are you referring to?

[Laughter.]

MR. AHEARNE: I bet we can guess.

[Laughter.]

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

[Laughter.]

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

CHAIRMAN MESERVE: Recycle next time.

[Laughter.]

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

CHAIRMAN MESERVE: Good. Thank you very much.

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

[Laughter.]

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

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

So, thank you very much.

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