UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
***
BRIEFING ON
REACTOR OVERSIGHT PROCESS IMPROVEMENTS
***
PUBLIC MEETING

Nuclear Regulatory Commission
Commission Hearing Room
11555 Rockville Pike
Rockville, Maryland

Monday, November 2, 1998

The Commission met in open session, pursuant to notice, at 2:07p.m., the Honorable Shirley A. Jackson, Chairman, presiding.

COMMISSIONERS PRESENT:
SHIRLEY A. JACKSON, Chairman of the Commission
NILS J. DIAZ, Commissioner
EDWARD McGAFFIGAN, JR., Commissioner
JEFFREY S. MERRIFIELD, Commissioner

STAFF AND PRESENTERS SEATED AT COMMISSION TABLE:
JOHN C. HOYLE, Secretary of the Commission
KAREN D. CYR, General Counsel
WILLIAM D. TRAVERS, EDO
SAM COLLINS, NRR
FRANK GILLESPIE, NRR
MICHAEL JOHNSON, NRR
PATRICK BARANOWSKY, AEOD
JAMES LIEBERMAN, Office of Enforcement
BRUCE MALLETT, Div of Reactor Safety, Region II
JOHN FLACK, RES
RALPH BEEDLE, NEI
DAVID LOCHBAUM, UCS

P R O C E E D I N G S

[2:07 p.m.]

CHAIRMAN JACKSON: Good afternoon, everyone. I am pleased to welcome members of the NRC staff to brief the Commission on the progress of planned improvements to the reactor oversight process and plans for and results of an initiative to improve the NRC assessment, inspection and enforcement processes for operating commercial nuclear reactors.

Before we begin, however, I would like to take a

moment to recognize the return of Ms. Greta Dicus to the Commission. While she could not be with us today, we do welcome her back. She was missed this summer.

In addition, I would like to recognize and to welcome and to introduce to you Mr. Jeffrey Merrifield to his first Commission meeting. Commissioner Merrifield, my colleagues and I look forward to working with you. We have a lot to do, as you will get an inkling of this afternoon.

Today's meeting represents a continuation of a dialogue which has existed between the Commission and the NRC staff since 1996 when, due to concerns over the subjectivity involved in the senior management meeting process, I directed the staff's attention toward seeking an external review of that process, which was the Arthur Andersen study.

Since that time and pursuant to Commission direction, the staff has developed proposals to modify and to improve the entire power reactor regulatory oversight process. Not only the senior management meeting process, but power reactor performance assessment, which includes all of the constituent pieces, including SALP, as well as the inspection and enforcement processes.

The reactor oversight process is intended to independently assess reactor plant performance, to facilitate the early identification of plants which require increased regulatory attention, and to direct regulatory actions towards such plants before the reasonable assurance of public health and safety is compromised.

Our ultimate goal is to attain a clear, coherent picture of performance at operating reactor facilities in a way that leads to objective, consistent and predictable regulatory actions. Through the reduction of subjectivity that can be afforded by the use of performance indicators and through the use of risk information, it is our attention to reduce unnecessary regulatory burden to the extent possible.

The staff has quite properly considered the individual components of the reactor oversight process as an integrated whole in which components of the process work synergistically to achieve our objectives. Today the staff

will describe its current activities to support these objectives and also should describe any incremental improvements to the process that already have been accomplished.

We welcome this update which represents an amalgam of both staff and stakeholder thoughts on the subjects obtained through a number of NRC-stakeholder interactions, culminated in a well attended and, I am told, fruitful workshop conducted during the week of September 28. The workshop was sponsored by the NRC and was attended by numerous representatives of the NRC, licensees, the power reactor industry, public interest groups, and congressional staff.

The Commission applauds the cooperative efforts of all involved at the workshop.

At the conclusion of the staff's presentations, two stakeholders will provide brief remarks on the NRC efforts concerning the assessment process. To represent the Nuclear Energy Institute (NEI), Mr. Ralph Beedle will present remarks. To represent the Union of Concerned Scientists, Mr. David Lochbaum will provide remarks. And I will call them to the table at the appropriate time.

Copies of the slide presentation are available at the entrances to the meeting. So unless my colleagues have any introductory comments, Dr. Travers, please proceed.

MR. TRAVERS: Good afternoon, Chairman Jackson, Commissioner Diaz, Commissioner McGaffigan, Commissioner Merrifield. As the chairman mentioned, we are here today to discuss the status of the staff's efforts to develop improvements in the NRC's inspection, assessment and enforcement processes.

With me here at the table are Sam Collins, Frank Gillespie, and Mike Johnson of NRR; Pat Baranowsky of AEOD; Jim Lieberman of the Office of Enforcement; John Flack of the Office of Research; and, of course, Bruce Mallett from Region II.

You mentioned an integrated whole, Chairman. I think the example that I would offer you is the kind of cooperative effort that we have internally put together to work on these processes, as demonstrated by the different organizations, regions, and major program offices that are involved in this effort.

Since receiving the initial tasking memorandum from Chairman Jackson on August 7th, the staff has given a high priority to furthering changes that are intended to better utilize risk information, clarify NRC requirements and expectations, and improve the predictability, objectivity and timeliness of NRC decisions.

Particular emphasis has been placed on addressing specific aspects of the reactor oversight program. The

EDO's August 25th memorandum to the Chairman provided the staff's short- and long-term plans, including detailed milestones and deliverables for a number of the most important issues.

In the two months since the initial response, the staff has increased its level of effort in order to accelerate ongoing improvements in the performance assessment, inspection and enforcement programs. We remain substantially on track in our efforts.

As you know, on September 15th the Commission approved the suspension of the systematic assessment of licensee, or SALP, program, for an interim period until the staff completes a review of its process for assessing licensee performance.

The suspension of SALP has freed staff resources to work on this project, and, as a result, region based managers and inspectors have been able to be assigned as dedicated members on each of the teams assigned to develop the technical framework, inspection and assessment models. This is truly an integrated effort.

There has been a significant amount of interaction with stakeholders for this effort. Chairman, you mentioned the workshop. At that workshop we were able to achieve our goals for the workshop by obtaining alignment of the participants on the basic framework for the process and its

defining principles.

Although significant progress has been made, it's really just the first step and a significant amount of work remains to address the details. Between now and the middle of December there are meetings scheduled with stakeholders at the working group level nearly every week to continue to refine and add to the progress we have already made. We

view these continued interactions with stakeholders as a critical factor in developing an acceptable overall inspection, assessment and enforcement framework, and these interactions will continue to be a priority for us.

As you know, we are working to provide the Commission with the results of our work, including a staff recommendation, by January.

At this point, I would like to turn it over to Frank Gillespie, who is going to begin the process of describing what we have been up to.

[Slides shown.]

MR. GILLESPIE: Good afternoon. We are here this afternoon to present to the Commission a brief background review of the oversight process improvement effort completed to date, a status of current staff activities, near term goals, and to discuss long-term activities required to implement process improvements.

While these efforts were originally focused on

improvements to the assessment process, the task has evolved to a more broadly based effort involving the close integration of inspection, assessment and enforcement.

In addition, there are several other process ties to these efforts which have been recognized, such as the allegation process, licensee reporting process, and risk-informed regulation.

We last briefed the Commission on April 2nd on the staff proposal which resulted from the integrated review of the assessment process (IRAP) effort. The objective of the IRAP review was to develop a single integrated assessment process which provided greater objectivity, predictability, and scrutability.

The fundamental concepts which formed the basis of the IRAP proposal were that:

Inspection results provided the basis for the assessment.

Inspection findings would be categorized by performance template areas. Scored based on safety significance, assessment would be accomplished by totalling the scores in each template area and comparing them against thresholds; and NRC actions would be taken based on a decision model.

Since the submittal of the IRAP proposal in SECY-98045, the staff has received feedback on a proposal

from the ACRS and the Commission.

In a letter to the Commission dated March 13th ACRS recommended the staff take a top-down approach to developing improvements in the assessment process.

In a staff requirements memorandum dated June 30th the Commission expressed concerns with the use of enforcement as a driving force for the assessment process, the quantitative scoring of PIM entries, and the use of color coding for performance ratings. However, the Commission did approve the solicitation of public comments on the IRAP proposal.

In parallel with the development and consideration of the IRAP proposal, the industry developed an independent proposal for improvement of the assessment process. This effort, led and coordinated by the Nuclear Energy Institute, resulted in a proposal that was fundamentally and philosophically different from the IRAP proposal.

This proposal took a top-down approach and established tiers of licensee performance based on

maintaining barriers to radionuclide release, minimizing events that could challenge these barriers, and ensuring that systems can perform their intended function. Performance in these tiers would be measured through reliance on high level objective indicators with thresholds set for each indicator to form a utility response band, a

regulatory response band, and a band of unacceptable performance.

So in response to the IRAP SRM, the NEI proposal, input from July 17th Commission meeting with public and industry stakeholders, and the July 31st hearing before the Senate, the staff set out to develop a single recommendation for improvement to the regulatory oversight process which places an appropriate regulatory burden on licensees.

This recommendation is intended to preserve the core values of regulatory oversight which are to carry out the agency's mission of protection of the health and safety of the public and to do this in a risk-informed and performance-based manner, and to account for the NRC's principles of good regulation: independence, openness, efficiency, clarity, reliability.

This recommendation should further reduce the burden for good performing plants but retain the ability to provide a strong focus on those licensees with significant performance problems.

The approach taken by the staff to develop a framework for regulatory oversight which uses a top-down approach. The staff started with the mission of the agency and then worked down to identify those cornerstone areas which provide the foundation for meeting our mission. The staff then identified and addressed those key issues which

form the defining principles to be used in the redesign of the regulatory oversight process.

For the cornerstones of safety the staff is applying a set of defining principles and a risk-informed, performance-based perspective to identify what is important to measure in each cornerstone and how it can be measured. During this process the staff identified important ties to other key processes such as enforcement, allegations, licensing, which should be addressed in the oversight framework.

CHAIRMAN JACKSON: Frank, could you go back to 4. Have you had any discussions about the role or continuing role of what have been the elements of the oversight and assessment process, namely, SALP, PPR, SMM? Have you come to any discussion about whether they would be retained or retained in their current form, or is that premature at this stage of the game?

MR. GILLESPIE: I think it would be premature to give you details, but if I could take you back to one of our first presentations on the key attributes, positive and negative, of those processes, some of those positive key attributes definitely are going to affect our assessment process group and how we interface, for example, with the public. Public meetings of some frequency appear to be an important public attribute that we want to retain. This

also came up when we suspended SALP. So there are some important positive attributes to what we were doing which we would intend to factor into how we carry out this process.

While working through the process to develop the

cornerstones to regulatory oversight, the staff recognized the importance of both internal and external input. As directed by the IRAP SRM, a 60 day comment period on the IRAP and cornerstone concept was completed on October 6. The staff received 26 submittals in response to the public comment to the Federal Register notice and is reviewing and evaluating them during the continuing development process.

There have been numerous public meetings with the industry, ACRS, regional, headquarters staff, to obtain feedback on development of the cornerstone concepts. These interactions with both internal and external stakeholders are continuing throughout the development of recommendations for improvement in the oversight process.

A four day workshop, as was mentioned, was conducted by the staff on September 28 through October 1 to enable the staff to interact with industry, the public, and the NRC itself, our own staff, to obtain and evaluate input on improvements to the regulatory oversight process.

Over 300 people attended the workshop, with broad participation from the NRC headquarters and regional staffs, individual licensee representatives, INPO, NEI, and

participation from the Union of Concerned Scientists, GAO, state regulatory agencies, foreign regulatory agencies, the Office of the Inspector General, and Senate staff.

There were several significant accomplishments achieved at the workshop which have contributed to the continued development of improvements to the regulatory oversight process.

I use the next words very carefully and very deliberately, because there is a scaling, as you will see in this viewgraph.

Workshop consensus was reached on the overall framework for regulatory oversight and the objective definitions for each cornerstone of safety.

Good alignment was achieved on the defining principles for the oversight process, with two significant issues remaining open: the integration of data and the nature of the data reporting program. These issues will be further discussed later.

CHAIRMAN JACKSON: Have you had any discussions at all or any preliminary discussions with INPO about data that INPO collects?

MR. GILLESPIE: Not to date, but it was one of the agenda items that we just put in. There is an INPO senior management meeting, I think next week, and this is one of the agenda items that we are suggesting.

Finally, significant progress was achieved in developing a process for selecting performance indicators, thresholds, and for identifying necessary inspection areas for each cornerstone.

CHAIRMAN JACKSON: Maybe you had better back up for a minute. Can you be a little bit more explicit? I think we all know what consensus is. Tell us about alignment and progress. I'm sure we are going to hear from our other stakeholders. I'm interested in their perceptions about where we are in those areas.

MR. GILLESPIE: We had set ourselves some objectives before the meeting. Our main objective was to try to develop a consensus on the framework, the highest level. The framework evolved and actually changed at the meeting. The picture, if you would, looks different today than it did before the meeting, and that has evolved.

There is a general agreement on what those cornerstones are, and more importantly, a very intense discussion on the objectives that are attached with each cornerstone and what it means. This became very, very important because it takes you to the next step. If you have your objectives stated, what information is needed to say that you have reasonable assurance the objectives is met?

Going down to alignment, our next desire was to

achieve alignment. You might say that in the simplest sense this was a broad majority. In trying to come up in a plenary session where we summarized each of the working session findings, this in general would represent about an 80 percent sense of alignment. We stated on the first day of the meeting that that is about what we were trying to get on this topic. This was an area where it was clear that in a four day workshop you weren't going to achieve the perfection.

The defining principles are the basic structure that set the stage for how inspection integrates with assessment, assessment interacts with enforcement, and sets the stage for the basic assumption that you in fact believe you can set thresholds and have performance indicators. So alignment there.

Progress was made in discussions -- and now we were on about the last two days of the workshop -- on what are the performance indicators. Generally they are perceived to be more than what is in the INPO indicators or what are indicators today, but clearly some of those are included in the indicators: Where will we inspect? How much will we inspect? That clearly did not get decided, but we made significant progress, and we will be going through that a little later on.

What are the kinds of things we should inspect?

One of the rules we had coming out of this was there is a minimum risk-informed baseline inspection that would be done everyplace.

The last one, how do you select a threshold? What is the logic you use? Is it risk-informed? There are two thresholds in each indicator. There is a threshold which is the operating threshold at the top level, where you would start to get the regulator to come in and start to take a gradually increasing action. Then there is a threshold as might be represented in the NEI paper, a threshold of shutdown, that ultimate regulatory threshold.

The focus of this meeting was really on more time was spent on the upper threshold than on the lower threshold.

COMMISSIONER McGAFFIGAN: On the thresholds, I'm trying to understand the concept. We're going to have multiple items that get graded, as I understand the NEI scheme, green, white, red, in utility response space, regulatory response space, unacceptable space. How do you integrate all of the indicators into an overall green?

Is it fair for us, if a plant is sailing along in green in most indicators, but, using SALP terms, not doing so well in engineering, for us to take regulatory action in the engineering area or the operational area.

I know that isn't the concept anymore; you break

these things down differently.

Have you talked through in practice how this thing works and where the regulatory threshold is?

MR. GILLESPIE: Mike is going to cover that a little bit in assessment. I'm really trying very hard not to prejudge where the teams are going to come out.

COMMISSIONER McGAFFIGAN: My concern, and I'll say it to the stakeholders as well, is the idea I think sort of embedded in a lot of our thinking is that this thing is going to be ready to go in January. That's about two months from now. If it's going to be ready to go in January or February or March, you'd already be wanting to train the people out there in the field, right?

CHAIRMAN JACKSON: There is a schedule in here.

MR. GILLESPIE: I'm going to go over the schedule. This is a very, very important point on expectations. Each task member is going to cover what we hope to have and how far we have gotten to deliver in January. If you look way, way ahead to the schedule, our January deliverable is the concepts that if applied to the inspection program, if applied to the assessment program, would allow us then to move forward and then rewrite the inspection procedures,and then write the procedures on how we are going to do assessment. So everything will not be done by January relative to implementation.

CHAIRMAN JACKSON: Actually, his question segues into a question that I have. Do you have other such workshops planned and scheduled that are as robust as the one that happened the week of September the 28th?

MR. GILLESPIE: There are none planned right now. There are some under discussion.

CHAIRMAN JACKSON: I think that may be a good thing given the Commissioner's question. It's something I think you ought to think about.

COMMISSIONER McGAFFIGAN: I just want to understand where we are going to be in fiscal 1999. We are going to be trying to develop this process -- I did glance ahead at the viewgraph -- but very little of this will actually be being practiced in 1999. So next spring we will have the typical senior management meeting, the roll-up to the senior management meeting. You guys will do whatever you do. Is that the thought?

MR. GILLESPIE: Yes. This April there will be the typical senior management meeting, and we are continuing on through the process we currently have in place. The inspection portion would be implemented between January and October, and the assessment process would be going out to June of 2000.

I'd like to actually leave until Pat talks. Pat is going to talk where he thinks he will be relative to

performance indicators. Otherwise, I will end up giving --

CHAIRMAN JACKSON: Stealing his thunder.

MR. GILLESPIE: Yes.

CHAIRMAN JACKSON: They have it all worked out.

MR. GILLESPIE: Then we can come back. I think expectations need to be honest and up front.

CHAIRMAN JACKSON: Okay.

MR. GILLESPIE: Going on to slide 7, which is our outline, as previously stated, we feel that we have good external and internal stakeholder consensus on the framework for an improved regulatory oversight process.

This framework was developed using a top-down approach. It starts at the highest level, with the NRC's

overall mission. This mission statement is based on the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974, as amended. The mission of the NRC as it applies to commercial nuclear power plants is to ensure that these facilities are operated in a manner that provides reasonable assurance of adequate protection of public health and framework and the environment, protects against radiological sabotage, and theft and diversion of special nuclear materials.

The mission of protecting the public health and safety is a responsibility that we also share with the licensees.

Given this mission, the next step was to identify those aspects of licensee performance that are important and therefore merit regulatory oversight.

The NRC's strategic plan identifies the performance goals to meet for nuclear reactor safety and includes:

Maintain a low frequency of events that could lead to a reactor accident.

Zero-significant radiation exposures resulting from civilian nuclear reactors.

No increase in the number of offsite releases of radioactive materials for civilian nuclear reactors that exceed 10 CFR Part 20.

No substantial breakdown of physical protection that significantly weakens protection against radiological sabotage or theft or diversion of nuclear materials.

These performance goals reflect those areas of licensee performance for which the NRC has regulatory responsibility in support of our overall agency mission. These performance goals were represented in the framework structure as the strategic performance areas of reactor safety, radiation safety, and safeguards, and form the second level of the framework.

For each of those strategic performance areas there are many regulatory requirements. However, with a

risk-informed perspective, it was possible to identify those most important elements in each strategic performance area which formed the foundation for meeting the overall agency mission.

These elements are identified as a cornerstone from the third level of the framework. As an example, the objective of initiating events cornerstone is limit the frequency of events that upset plant equilibrium and challenge critical safety functions.

Acceptable licensee performance in this and other cornerstones should provide reasonable assurance that the overall mission of adequate protection of the public health and safety is meet.

The cornerstones provide the fundamental building blocks for regulatory oversight process and provide reasonable assurance that the overall safety mission is met. However, there are other aspects of licensee performance such a human performance, safety conscious work environment, problem identification resolution, which are not captured as cornerstones but are equally important to meeting our safety mission.

The staff concluded that these items and others generally crosscut the affected areas and manifest themselves as causes of performance problems.

Licensee performance in these crosscutting areas

should therefore be dealt with in each of the cornerstone areas as contributors to performance as measured by indicators and as observed through inspection.

Once the cornerstones and objectives were established, we then had the basis for determining what information was needed to provide reasonable assurance that the objectives were being achieved. This included what performance attributes are in each cornerstone, what is important to measure for each attribute, what aspects of performance can reasonably be measured with objective indicators, what areas of performance should be measured through inspection, and what are the appropriate thresholds for NRC interaction.

These cornerstones provide the foundation for improvements in inspection, assessment and the enforcement process.

Once the framework was established, key issues were discussed and agreed upon which formed the defining principles for regulatory oversight. These defining principles are essential to the continued development and improvement to the oversight process since they form the rules against which the cornerstone details will be developed.

Further, these defining principles also establish the relationship between elements of the oversight process

such as enforcement and inspection. These defining principles are:

There will be a risk-informed baseline inspection program that establishes the minimum regulatory interaction with licensees.

Thresholds can be set for licensee safety performance.

Performance indicators, supplemented with some inspection, will form a rebuttable presumption for licensee assessment.

A risk-informed baseline inspection program will be performed for all licensees and should cover those risk-significant attributes of licensee performance not adequately covered by performance indicators. The inspection program will also verify the adequacy of the performance indicators and provide for event response.

In most cases, inspection observations are expected to complement the performance indicator results. However, when warranted, risk-significant inspection observations can be used to overturn the indicator results when the inspection observations develop a compelling case that the performance indicators are not accurately reflecting licensee performance.

Enforcement actions taken should not be an input to the assessment process.

CHAIRMAN JACKSON: Frank, can you hold up one second.

COMMISSIONER DIAZ: Let's go back to these last two bullets on page 8a. I just want to make sure you are going to eventually add some definition to the term "adequacy." It's a broad term. I don't know whether you mean adequacy in the whole context of what the process is or you are talking about the accuracy of the indicators in predicting, or all of the above.

MR. GILLESPIE: It's actually all of the above.

Going down to the next, "will verify the adequacy of the performance indicators," which is going to be very important, we are getting consistent information reported consistently with the same definitions from all licensees.

The other piece, if I can take a simple example of PI, might be total scrams. Total scrams reflect operators in a control room and generation operation, how they react to, but it might be that total scrams may not reflect what needs to be inspected, and that's operator reaction during an event.

We do get to observe that on a simulator. So that might suggest that while the PI as a general oversight does touch upon human and operator performance during a reactivity transient, we have to look at what is the risk significance of observing operators in an accident situation

on the simulator. So while we may have a PI that has breadth, it may not have enough depth in an area that is risk significant.

COMMISSIONER DIAZ: I just wanted to point out that that word "adequacy" is an extremely important word. It is the definition of adequacy where the process kind of hinges. So it is something that you might not be able to address now, but the Commission will be looking in January at how adequacy is defined.

The other word is "compelling," this compelling case, which is kind of the second step. What is a compelling case?

COMMISSIONER MERRIFIELD: If I can add, what kind of burden. You are using compelling case. What kind of burden of proof does that put on the person seeking to sort of overturn the indicator results?

MR. GILLESPIE: The burden is clearly going to be on the staff to overturn the indicator results, not the licensee. "Compelling" is part of the assessment group that we are still trying to work on. That is going to be a very interesting definition to develop. Developing it may be more interesting than the final definition.

COMMISSIONER DIAZ: Yes. I just want to point out that those two words need to be well defined and some kind of boundaries put around it so we can actually know what we

are doing.

CHAIRMAN JACKSON: Are you going to have thresholds for event response? Have you addressed that at all?

MR. GILLESPIE: Yes, we are going to address it. Pat is working on it. Chairman Jackson, I think you mean the kind of event that could happen that is a high risk event might trip whatever PIs we have multiple but not push past the threshold. Clearly we are going to have to have and will have some definition of how we deal with the exception that goes across in a high risk situation like that on multiple items.

MR. COLLINS: Commissioner Diaz, what is unique about the process that we are in, which is a little different than perhaps what we are used to historically, is that we expect not only for the indicators to evolve over time with experience, but we expect as the industry matures those indicators might actually change over a period of time in response to either aging considerations, license renewal concerns, or other challenges that are brought forth by a collection of data, which might be different than what we

are actually measuring today.

The second aspect which would allow that to happen is that all the information is shared. So it is not an instance as perhaps we found ourselves in the past where we

are justifying a SALP assessment which has broad subjective statements with very little data and criteria. This information will all be laid out in front of the licensees as well as the staff. It will be scrutable on a mutual basis.

In any case, the words "adequacy" and "compelling" will be the subject of joint considerations as far as what is it going to take to make this process work, both for the industry, the NRC, and for the other stakeholders. So we would expect this development not to end when the process is put in place on trial in June of 1999, but for the stakeholder involvement and for the evolution to continue and for it to be a very scrutable process.

COMMISSIONER McGAFFIGAN: I'm a little concerned about managing performance indicators and getting overly dependent on just a bunch of numbers because they happen to be what you can measure. Maybe this is an area that is covered by one of these categories where PIs are inadequately covered.

We constantly run into cable separation issues, fire protection issues at plants. We went looking at a couple of plants that came out of start-up that had cable separation issues in their cable spreading rooms, and they had to go in and take actions. I don't know how you have a performance indicator for whether they have adequately

handled fire protection.

Are these indicators so good that you are working with? At this point in the process you should have at least an existence proof. If you had had these indicators in play over the last five years, how good are they predicting NRC regulatory actions?

I'm not saying that all of our regulatory actions were perfect and I'm not saying all of our scoring was perfect, but are there SALP 1 plants that are in the red zone, and are there SALP 3 plants that are firmly at the top of the green zone. What do the data tell you when you look at some of these, looking backward at the regulatory actions that we took, whether they were the right actions?

MR. GILLESPIE: You asked two questions.

The first one is we are still developing specific indicators and thresholds. So we have not taken an independent retrospective look. But NEI has provided us with some insights on some work that they did. So we are going to have to take a retrospective look at these various plants once we get the indicators done.

The second question is partially addressed in our thought process on backup slide number 2. If you look at mitigating systems and you through desired result, important attributes -- this was a straw man we kind of used at the meeting --

COMMISSIONER McGAFFIGAN: That's going to be helpful.

MR. GILLESPIE: Yes. You're not going to see it up there. You really have to see it on the paper.

What we came down is a realization that performance indicators were not going to cover all the blocks. If you look at adequate controls to maintain plant

design, you will see on the left-hand side inspection, design programs.

So part of our logic is asking the question, how much information do we need about high risk systems and components relative to mitigation systems, and where can that information be made available? It is clearly not all going to be available from performance indicators.

This is an illustration of design inspection needed, validation of PIs needed, and potentially some work on licensed operator recall program, which is personnel during accidents.

COMMISSIONER McGAFFIGAN: Where does inspecting adequate fire protection come in?

MR. GILLESPIE: In the separation?

COMMISSIONER McGAFFIGAN: Cable separation or other fire issues, where does that come in.

MR. GILLESPIE: Pat.

MR. BARANOWSKY: The way thing like inspecting

risk-significant areas that are associated with the fire program would come in as we go through the indicators and determine what their capabilities are, we are going to identify things that they can't do, and then the risk-informed inspection program is supposed to be focused on the most significant areas that we would do our audit inspections, either ourselves or oversee what the licensee is doing. There is not going to be indicator that can find design flaws or tell you what the implication of design flaws is before send an inspection team out there. I think this is part of the information that has to be integrated with the indicators in order to perform an assessment of the licensee's performance.

CHAIRMAN JACKSON: So you are saying that the inspection program really has two purposes. One has to do with what you call the verification or the validation of the PIs, but also separate and apart from that, to get at issues such as what the Commissioner mentioned, that a performance indicator may not so easily pick up per se.

MR. BARANOWSKY: For instance, if we take the Quad Cities high risk fire situation, the current regulatory program, without assistance from PRA, didn't find it, and the performance indicators by themselves couldn't indicate it, but it required a risk-informed look in that area to find the issue. Then we took an appropriate regulatory

response to that situation. I think we are going to see some of that.

COMMISSIONER McGAFFIGAN: So a possible goal is freeing up resources that at the moment may be focused on less risk-significant things and will allow people to do smart sampling in areas that are more risk significant. Is that one of the goals?

MR. BARANOWSKY: NRC and licensee resources.

COMMISSIONER McGAFFIGAN: You said since you don't have the indicators yet you can run a truth test on them. The world should know that when we had you all in the senior management meeting process adopt some of the Arthur Andersen indicators, and Arthur Andersen had selective ones in their public report without plant names attributed to them, that the Commission at least had all 105 plants. This was not something that would have been outside the reach of NEI probably to replicate either except for one of the indicators. So we could look at hits.

The Arthur Andersen model, we could look at it; we could see how well it replicated the past and understand the differences. And the GAO, of course, with the benefit of also seeing what we had seen, could come in and say, as Arthur Andersen said, that there had been, if anything, according to the Arthur Andersen model, a little bit of a bias to pull our punches. Plants were getting hits reaching

Andersen thresholds before we took action, with only one or two in the other extreme where we took action and the hits never got very high.

I hope that the Commission can have that sort of thing. In this case, since it's a public process involving the stakeholders, you might as well all be working of the same data sheet when you decide whether this new set of indicators, whichever initial set you use, is a good way to go or not. I would hope that we would have a backward looking look at how well these things do.

MR. GILLESPIE: Absolutely. In fact, this is one of the reasons we feel, I don't want to say confident, but at least comfortable, and I guess I should say confident, that we can develop a set of performance indicators because of the Arthur Andersen and some of the work, without plant names, that NEI has shared with us in public meetings; that we do have a success path. But we are going to have to select specific indicators and retrospectively look and test those exact indicators.

CHAIRMAN JACKSON: I had a question somewhere that was going to ask you that question, about how you were going to go about actually testing the indicators. I think without some algorithm as to how the indicators get folded together to help you reach some decision threshold, you can look at whether they are red, green or blue, or one, two or

three until you are blue in the place. So the real question becomes, how do you actually meld them to make some decisions?

MR. COLLINS: Chairman, I think in fairness to Commissioner McGaffigan's question, the premise about fitting the data over the new system will have to include the understanding that the new system allows for a response mechanism to kick in when the data starts to trend, which our previous process does not.

When we overlay data on to the new window system, if you will, it will show trends, but it will not include what we would expect the licensee's reaction to be if that trend is declining and how that would have gone under the new system, and if it continues into the white, because the assumption would be that there is no licensee action because you are overlaying an old system on to a new system, that the NRC engages, that we engage in a way that creates a turnaround. So we are going to have the same information overlaid on different processes, and I think we need to be fairly careful with that given the fact that there is already an end result, depending on the plants we look at.

If we look at the plants which are "problem plants," it may actually be more informative if we pick a case where we know where a licensee picked up a problem early and in fact responded to it, or we picked up a problem

early and the licensee responded to it, which is probably not a problem plant situation but maybe a different type of performer, to see whether the curve actually reflects the improvement in performance. So we will have to look at the

case study to ensure that we are really proofing the system under the new system, under the new processes.

COMMISSIONER MERRIFIELD: At what point in the schedule do you think you will have defined those performance indicators?

MR. GILLESPIE: January. And hopefully by January we will have defined at least the process for doing thresholds.

COMMISSIONER McGAFFIGAN: I will just interpose a comment if I could. Typically the way this place works, if a paper is due to us in January, you've got a first draft drafted at the moment and it is probably going around in some sort of concurrence. So you are going to have some very fast drafting and some very fast concurring, I assume.

CHAIRMAN JACKSON: Bill is working all that out.

COMMISSIONER McGAFFIGAN: Okay.

MR. TRAVERS: We're going to give you an update every couple of weeks.

MR. GILLESPIE: Going on to slide 9. Although there was good alignment on most of the defining principles, there were still two key issues on which consensus was not

reached. The first involved how indicator results, inspection observations, and information sources such as FEMA results and LERs will be integrated in the assessment conclusion.

Although there was no consensus on this topic, there was good agreement that indicators and other information sources should not be artificially merged.

It has also been acknowledge that while current assessment processes such as the semiannual plant performance reviews and annual senior management meetings may be able to accomplish this integration, objectivity and scrutability would then to be a challenge.

COMMISSIONER MERRIFIELD: I take it that that integration will also be available in January.

MR. GILLESPIE: Yes. We would have a proposal on how the indicators would interact with the inspection results.

CHAIRMAN JACKSON: When you say that, you mean that you intend to also be presenting some analysis methodology that would fold in the indicators and the inspection results?

MR. GILLESPIE: We are doing our best to present an analysis methodology as part of the assessment task, yes.

CHAIRMAN JACKSON: It would also be interesting to know what expected change in licensee regulatory burden you

would expect to see due to an improved process in how you arrive at that.

MR. GILLESPIE: Yes, Chairman Jackson.

MR. COLLINS: We may not have that one.

MR. GILLESPIE: We may not have that one for January.

CHAIRMAN JACKSON: So you want to be honest. Truth in advertising, right?

MR. COLLINS: Right. I think we need to understand a little better once the system is developed, and perhaps it comes with overlaying the information on it from past plants.

CHAIRMAN JACKSON: That's why you need at least an analysis methodology.

MR. COLLINS: What we hope to have, though, is a

connection. Perhaps this is at the root of your question. A connection between how the inspection program interacts with the assessment process.

CHAIRMAN JACKSON: Right, but also how they met to arrive at some judgments.

MR. COLLINS: Yes.

CHAIRMAN JACKSON: That's what I mean by analysis methodology.

MR. GILLESPIE: Going to slide 10.

COMMISSIONER McGAFFIGAN: You didn't stop very

long on the second bullet on slide 9, voluntary reporting program is preferable to rulemaking. Are we going to have performance indicators for some plants and not have them for others because it's all voluntary as to whether they bother to give them us? What is implied in that sentence?

MR. GILLESPIE: This is exactly that. We are going to have to work with our stakeholders. To do something in a very timely fashion is going to require a voluntary program.

CHAIRMAN JACKSON: This is not fair to Mr. Beedle, but it would be interesting when you come to the table if you could speak to that issue about how voluntary programs work that would cover the waterfront relative to what the regulator needs to have.

MR. BEEDLE: We'll do that.

COMMISSIONER McGAFFIGAN: I'm just perplexed as to how you have a program where say they come up with 18 -- I'll just make up a number -- performance indicators, and for 43 plants we have 18; for 21 we have 16; for 22 we have 10. I'm sure we have some minimal that we control ourselves that we have the data on. That would be a pretty wild program.

MR. GILLESPIE: Clearly that's not the intent.

MR. TRAVERS: That's not what is envisioned, of course. So we recognize this question of how you get what

you need to do that. We are struggling now with whether we can get it voluntarily.

CHAIRMAN JACKSON: I'm going to make an advertisement that even predates myself and my colleagues, but it continued into my tenure, and that had to do with the struggle relative to the need for a reliability data rule, were we going to get the data or not, how were we going to get it, would it be disaggregated or would it be aggregated. It's not clear to me how it ultimately turned out. So we struggled and struggled. When I say we, I mean the agency, for years and years and years. If all of this is going to wreck upon the rocks of not being able to get the data through a voluntary program, then I think we are going to have to grapple with what the implications of that really are.

COMMISSIONER DIAZ: Would it be fair to say that the more comprehensive the voluntary program the less prescriptive will our requirements be? Is there a correlation there? If have a very thorough, complete, comprehensive set of indicators, or whatever, I think we could say that the less prescriptive we could be. Is that correct?

MR. GILLESPIE: That's correct.

COMMISSIONER DIAZ: So in response to Commissioner McGaffigan, there is somebody with a two-by-four sitting

around here.

MR. COLLINS: We are receiving the full cooperation of the industry at this point. I think there is a mutual appreciation for the goals, as was articulated earlier, of this process, which is to allow the licensees to focus their resources on areas where they believe it's important and less overlaying of the NRC processes on top of that.

CHAIRMAN JACKSON: Theoretically, one could say that if one didn't have the indicators that one needed to make a judgment, that might trigger the need for a look before inspection above the baseline.

MR. GILLESPIE: It's a tradeoff.

MR. TRAVERS: The advantage of it is obvious. It's up-front understanding and agreement; more or less a contract, or who's got the burden and what are these indicators telling us about performance, and how should the regulatory scheme be structured based on that.

CHAIRMAN JACKSON: So the two-by-four is send us the data or we'll send you more inspection.

MR. GILLESPIE: I think if you go back to one of our basic defining principles and the idea of an objective being stated and agreed upon for each milestone, the first question for each cornerstone is, what information do you need to make the judgment that there is reasonable assurance

this objective is met? Whether that comes from a performance indicator or inspection, we are going into this asking that first broad question first.

COMMISSIONER DIAZ: And that's the balance between the inspection and the indicators. How they integrate is the whole key.

MR. GILLESPIE: That's where it starts coming in, right there.

The efforts completed to date and just discussed were intended to provide the framework for the regulatory oversight of commercial nuclear power plant licensees.

The current scope of activities include developing improved processes within this framework to address inspection, assessment and enforcement.

As described in the August 25th Chairman tasking memorandum, the activities in these areas are being closely coordinated to ensure that the process improvements remain integrated.

The work in these three areas will form the basis for the recommendations for improvements to the regulatory oversight process that will be submitted to the Commission in January of 1999.

In addition to work in these three areas, there are several other regulatory oversight processes which need to be addressed and evaluated within this cornerstone

framework. Most of this work is longer term in nature and will not be part of the January 1999 recommendation. Specifically, there will be a substantial effort required to revise the inspection program documentation to support any new approach to regulatory oversight.

Definitions developed within the framework for risk-significant inspection observations will need to be applied to the enforcement program to help characterize inspection findings.

The allegation program needs to be evaluated for appropriate changes within the framework structure to determine whether allegations should be handled in a

risk-informed manner.

As previously discussed, how assessment results affect enforcement will continue to be evaluated beyond January of 1999.

Based on the results of the cornerstone framework and the identification of risk-significant performance areas, changes to licensee reporting requirements may be warranted.

CHAIRMAN JACKSON: Let me ask you a couple quick questions. Will different inspection skill sets be required to implement this program?

MR. GILLESPIE: Bruce and I have talked about that. I'd like to let Bruce address that.

MR. MALLETT: Thank you, Frank.

[Laughter.]

COMMISSIONER DIAZ: That didn't sound very enthusiastic.

MR. MALLETT: We believe that there will be some skills. They may be lined up different than we have now. Now in the inspection program you may have a specific skill for someone who may be in operations, may be in maintenance, or may be in electrical engineering. I think in the future you may need a different skill. We aren't too sure what that looks like yet. So we will have to factor into this implementation some training aspect to develop people for those skills.

As far as being able to inspect, that basic skill will be there.

MR. COLLINS: Chairman, I would say that overall we would be looking at a more performance-based approach to inspection. In other words, as you go down through the cornerstone into the tiers, we would be looking more at the cause of performance, whether it be good performance or an area that needs attention, and we would track that back through and come to a determination of whether the action the licensee has taken or proposed to be taken are appropriate.

So we will need a better understanding of the

corrective action system and corrective action processes. Potentially, and this is yet to be determined, a more refined skill set on human performance, because that may end to be an area that is raised to a different visibility. And then probably better training in the risk-informed, performance-based inspection area and less specific disciplines, unless we have a specialist inspection, which would probably be reactive inspection.

CHAIRMAN JACKSON: When you talk about reporting, you mean LERs, or do you mean these performance indicators, or what? And will the LERs be part of the assessment program?

MR. GILLESPIE: We are looking at how we are going to integrate LERs. Right now certain things reported in LERs would be picked up as part of the indicators, and we don't want to do a double count of LERs and indicators. So we are going to be stepping back and looking at LERs and what information is reported and how you integrate that in with the hard indicator information being reported from the licensee. So, yes, we do mean both, the potential for a rulemaking on reporting the PIs and the potential that this could change the LER reporting rulemaking in the longer term once we refine probably the second generation of performance indicators, quite honestly.

CHAIRMAN JACKSON: You had earlier shown the slide

showing operator licensing and requalification. How do they affect assessment?

MR. GILLESPIE: What we are showing there is operator licensing and requalification. Specifically, the requalification piece is right now part of our baseline inspection program. That came out when we were going down through the attributes. The question was, what is not specifically covered that would be high risk by a PI? So that dropped out as an example, and that was operator reaction under accident conditions in a control room.

CHAIRMAN JACKSON: Okay.

COMMISSIONER McGAFFIGAN: This chart was titled "Longer Term." For some of these actions -- I'm looking at Mr. Lieberman -- the threshold for minor violations, that isn't too much beyond January, is it? My recollection from the ongoing response to the Chairman's tasking memo is that that is an early spring deliverable from you; isn't it?

MR. LIEBERMAN: That's correct. In the past the enforcement program drove the assessment process. We want the assessment process to drive the threshold process, and we need that to be done. Right after that we will be ready to go.

COMMISSIONER McGAFFIGAN: So these are longer term but quite near term in NRC time?

MR. GILLESPIE: Yes. Early spring. If you look

at our schedule, longer term tends to be before June for most milestones.

CHAIRMAN JACKSON: Is it fair to say that that second bullet under longer term relates to ensuring that there is an appropriate alignment between thresholds for inspection and thresholds for minor violations?

MR. LIEBERMAN: That's right. We want to make sure that we are not collecting in inspection space information that we don't need for assessment and we are not enforcing things which aren't important for the bigger picture oversight issues. We want to have these things integrated together.

CHAIRMAN JACKSON: So in addition to having assessment come ahead of the curve, it is also meant to ensure that there is an alignment here; is that correct?

MR. GILLESPIE: Yes. If we are successful in a risk-informed baseline inspection, then inspectors in theory should not even be looking at things that we would put in a minor violation category today.

CHAIRMAN JACKSON: Okay.

MR. GILLESPIE: Slide 12. There are currently four short-term activities in progress to develop a recommendation to the Commission on improvements to the regulatory oversight process.

The technical framework group, led by Pat

Baranowsky, is responsible for building on the work started in the public workshop, to complete the development of the cornerstones by identifying appropriate performance indicators, establishing criteria for thresholds, and establish the basis for risk-informed baseline inspection.

The inspection task, led by Bruce Mallett, is responsible for developing a process that addresses scope, depth, and frequency of a risk-informed baseline inspection. The scope and basis for inspection were based in part on

input received from the framework group.

The assessment process group, led by Mike Johnson, will determine methods for the integration of indicator and inspection data, develop criteria for NRC actions based on assessment results, and determine the best method for communication of the results to licensees and the public.

The enforcement activity, led by Jim Lieberman, is working with and participating in these tasks to ensure that the enforcement process changes are properly evaluated in a framework structure and the changes to the inspection assessment program are integrated with changes to the enforcement program.

All these activities are fully coordinated and integrated and consist of broad participation from all four regions, NRR, OE, Research, and AEOD.

With that, I would like to turn it over to Pat

Baranowsky to address the technical framework.

MR. BARANOWSKY: The technical framework group, as Frank mentioned, does have representatives from a broad spectrum of the NRC's offices. Let me mention some of the disciplines that are involved.

We have people with field inspection and inspection program development background; maintenance rule implementation; performance indicator development analysis; emergency planning; health physics; security; human performance; risk assessment; and enforcement.

That is a pretty broad-based group. If you look at the cornerstones, you will see they cover pretty broad indications.

We have about a dozen full-time and about a half dozen half time staff involved in this activity.

The charter for this group is to develop the details of the technical framework for a more objective, risk-informed and performance-based approach to licensee performance assessment, and to provide related bases for inspection activities. Therefore, the information that is developed by this group will be used in the development of the risk-informed baseline inspection program and for the performance assessment tasks.

The work of this group, as Frank mentioned, will follow and build on the defining principles and the

cornerstone development effort that was begun at the performance assessment workshop in late September of this year.

Also, as was mentioned by Sam Collins, we recognize that this is really the first phase of an activity that is going to evolve over several years through implementation, feedback, and improvement of the process. Nonetheless, it's our intent to develop with sufficient detail information that will allow the Commission to make a decision on the efficacy and direction of this new approach to licensee oversight for potential near term implementation even though there may be some future development in the years to come.

COMMISSIONER DIAZ: I'm sorry, my major concern with this paper is in some of the definitions of cornerstones. Are you going to cover that because they are in the appendix, or should I just jump right in to it?

MR. BARANOWSKY: I think we should jump right in.

CHAIRMAN JACKSON: Backup slide 1a.

COMMISSIONER DIAZ: I'm sure we are going to this from the principle that when you look at these things you

first determine what is the desirable outcome, and second, how you are going to regulate to make sure that that outcome is there.

If I look at the definitions in here, I do have a

little problem with the way they are stated. Let me start with initiating events: limit the frequency of events that upset plant equilibrium. I'm a little leery about the words, because plant equilibrium is upset in many different fashions, and those might not be initiating events. So I would encourage the staff to look at that.

Words might be something like "initiating events that create deficiencies in plant balances (reactivity, heat transfer, and coolant inventory)" That would be very specific.

I think it's important to know what we mean by upsetting plant equilibrium, because if we have a scram due to losing a transformer, say 50 percent load is gone but the plant is still responding very well, it would be an event, but it it might not be an initiating event that would create a response.

Fundamentally, there are three things that we are always looking at when we look at critical safety functions, and that is reactivity, heat transfer, and coolant inventories. I don't know of any other. Some definition on that might be appropriate to avoid people getting upset about upsetting plan equilibrium.

CHAIRMAN JACKSON: There is actually a definition of initiators in a PRA sense.

MR. BARANOWSKY: I wonder if I could respond to

that.

COMMISSIONER DIAZ: Please.

MR. BARANOWSKY: I hope you will be happy eventually when you see what we are putting together. Our job is to take these bullets that were basically put on paper as a result of the workshop and detail them out just to cover the kind of concerns that you are raising. In fact, for each of the cornerstone areas we are going to have a fairly substantial discussion of what the cornerstone is, what the performance concern is, how the performance indicators relate to those things what the performance indicators can't do.

COMMISSIONER DIAZ: I have absolutely no doubt that you will do that. Again, the summary is something that people look at and they form their own images. I think this process has to be so transparent, so well defined that some of those things are important.

Quickly, because I know we are time constrained, when you go to mitigation systems, there is some things that we need to state that have to be according to our rules. This definition still has something missing. For example, "ensure that those systems required to prevent and/or mitigate core damage perform at a level commensurate with their safety significance." It has to include "perform or are capable of performing," because if they are not capable

of performing that function even if they were not challenged by an initiating event, that might be sufficient to be a cornerstone. A lot of our things are established on the capability to perform the function. So "perform or capable of performing." You have to have it. If not, we are not compatible with other things.

The same thing on barrier integrity: "Assure that the physical design barriers protect 'or are capable of protecting.'" In other words, the capability has to be there not only being able to do it.

With just those minor corrections, your summary actually becomes very inclusive.

MR. BARANOWSKY: Thank you.

COMMISSIONER DIAZ: You're welcome.

CHAIRMAN JACKSON: Sam.

MR. COLLINS: Let me raise a fundamental issue here. Not to resolve it here, but there is a difference in looking at the level of engagement of the regulator. In your own words, things happen at power plants, and you do have random failures, random events.

We become concerned at a different level when those random events result in actual challenges to our safety safety, as opposed to challenges to a safety system that the safety system does not function as required, as opposed to it doesn't function as required when you

challenge a barrier versus a barrier failing. So it is a graduated approach.

Although systems that may not have worked are a concern to us, they are not of the same concern under this scheme as those that are actually challenged. So what we have to decide as an agency at what level we are going to engage versus at what level we are going to ensure that it's understood and that the licensee is approaching the issue appropriately.

In other words, if I can paraphrase Jim, does luck count? Does the fact that you had a potential but didn't have a circumstance that has a nexus that is close to one of our strategic goals more important? We are still working our way through that to some extent.

CHAIRMAN JACKSON: Actually, the two things do tie in. Commissioner McGaffigan raised the issue of cable separation and other fire protection issues. You could argue that cable separation relates to the capability line as opposed to did they work if there were a fire, or what have you. I think the real answer is that you have to give some specificity that relates to these fundamental barriers and you have to be clear on what this graduated approach is that you are talking about related to that.

COMMISSIONER DIAZ: I agree. It's the specificity that will avoid the problems. Voluntary or involuntary,

whatever it is, there is still some things that are low, and we still have to be able to maintain the capability to perform the function. If we want to be specific about what grade we are going to risk inform those functions, that's fine, but you still have to have that.

CHAIRMAN JACKSON: That's a good point. That's a good way to put it, I think.

MR. BARANOWSKY: The product that we are going to have is basically part of the paper that will come up here January 1999 and will document the principles, bases, logic, and technical information that supports all these areas at that time.

Let me go to number 14 and talk a little bit more about some of these specific tasks that we have. We had covered some of this stuff in pieces, parts and chunks earlier as we had a question and answer session, but I will talk about a few of these.

The cornerstone task, as I said, is primarily to

detail out the few bullets and charts that we have, to cover the scope, key definitions, and relationship to other activities. We are going to have operating events that are significant by themselves, how does that relate this, and what do we do about that. Reporting, generic issues, and so forth, all have to be looked at in terms of this framework.

Enforcement philosophy as it relates to the

defining principles and development of the performance indicators, inspection bases and thresholds, will also be considered in this technical framework development task.

The performance indicators are intended to be risk informed to the extent practical at this time.

The performance indicator task involves evaluation of the performance indicators that were proposed at the workshop, and also includes the identification of other performance indicators where either there were some holes identified or limitations.

However, I should note that not all the performance indicators are going to be so amenable to risk-based or risk-informed thinking. For instance, the radiation protection cornerstone area is not so much based on risk as it is ALARA and other regulatory principles that haven't been evolved through the kind of risk analysis that is associated with initiating events and mitigating systems.

In general, the PIs are meant to be a broad sample of performance in some of the more risk-significant areas and those areas that are delineated by the cornerstones.

For instance, in the mitigating systems, although we are not going to look at all risk-significant mitigating systems, at this time we are thinking about four or five key systems, ones that we have some form of indication available at this time that would be easy to develop, because we are

working under some time constraints. We think that would be practical, and moreover, we think that we are going to get a large chunk of what we need to get in terms of risk-informed information from that set of indicators.

In the future, our work will involve developing improved indicators or additional indicators, and we will also look at that in this activity.

Validation of the performance indicators is also a part, and that is related to the adequacy discussion that we had earlier.

Evaluating their limitations. Their limitations are significant in terms of the development of inspection bases. We want to make sure that the risk-informed inspection program takes advantage of the information generated by the performance indicators but that we don't misunderstand the capabilities of performance indicators to give us relevant information.

The inspection bases will include identifying areas where verification and validation needs to continue, and of course the risk-significant aspects of performance not adequately covered by the PIs.

The threshold task involves the identification, definition and evaluation of the performance indicator thresholds. These thresholds are intended to provide a clear demarcation point or points for identifying fully

acceptable performance, areas of declining performance, and unacceptable levels of performance.

We will be evaluating the thresholds proposed by

the Nuclear Energy Institute for several of the proposed indicators, and we will perform some of our own independent analyses of PI response, the benchmarking, sensitivity to risk, and that kind of thing.

An important aspect of the evaluation of performance indicator response and thresholds is determining the ability of indicators to identify declining performance, allowing the staff time and the licensee time to evaluate problem areas, and initiate corrective actions before reaching an unacceptable threshold. This would allow licensees time to do what they have to do and the NRC to implement a graded response to declining performance.

In this regard, we will be considering regulatory as well as safety implications of crossing a threshold and possible mandatory actions associated with the unacceptable threshold.

The enforcement philosophy and implementation are primarily being addressed in the performance assessment and the inspection baseline groups. However, we are going to look at this philosophy in terms of its logical connection and consistency with the technical framework as it's developed.

Questions.

COMMISSIONER McGAFFIGAN: Could I go back to a question I asked earlier and was told, I think, this is the time to ask it? Do we take regulatory action in a single area? Even they are green everywhere else, if they dip into the white, in that area, is that the notion?

MR. BARANOWSKY: That's the notion that is currently being proposed, although Mike Johnson is going to be looking at whether or not that is going to be our final posture and how we should look at groups of indicators changing in one way or another. We are not planning at this point to have an integrated indicator like the one we recently developed and put out with the IRAP public comment paper.

COMMISSIONER McGAFFIGAN: If you are in the green zone and we have an inspection finding that belies the indicator, the burden of proof is on us, but we still can take regulatory action in the green area if you pass that burden? How does that burden get manifested in terms of staff processes? Is there a higher level of approval required to take a regulatory action if, despite the burden of proof being on the regulator, it's passed?

MR. TRAVERS: Commissioner, I think this is exactly right. We would look on that compelling argument that we were speaking of earlier as one that would be a

burden on us to make if they are in the green zone, but one which we very well could make if we felt by virtue of our inspection program or any other information that we had that we needed to engage on an issue, and how we would engage on the issue would be determinant on just what the issue is and the extent to which it looked to be a problem. We could have a meeting; we could issue an order; we could do a special inspection; we could put more resource on the issue.

COMMISSIONER McGAFFIGAN: I'm just trying to understand what burden of proof means. If I'm a licensee and I get an inspection and at the exit interview it's clear that despite sailing along in green in whatever category or set of categories this might fall under, I really do have some problems here, and I should expect regulatory action. Do I petition to the EDO to say, I'm on top of it now, I

appreciate what your staff found, but let me fix it and don't do anything, because I'm in green? And how is this process scrutable to me, that you make a decision that despite the green, you are going to have a public meeting, you are going to have an order, you are going to do something?

MR. TRAVERS: That's part of the challenge that we have to yet develop, but the expectation would be if you are in the green that we wouldn't be in a position to engage.

COMMISSIONER McGAFFIGAN: Despite the fact you've

just found some stuff in an inspection report, I might leave the meeting thinking, well, I'm still in green. Then three months later NRC takes an action and comes out of the blue. How do we make sure that it doesn't come out of the blue, that we signal to them early on that we regard these findings of such magnitude that we may take regulatory action despite their being in the green, and that that is being considered?

MR. TRAVERS: I think engagement at its earliest phase would include dialogue with the licensee. I think that is what is envisioned.

MR. COLLINS: It's really no different than our processes provide for now.

MR. TRAVERS: That's right.

CHAIRMAN JACKSON: So you would engage because you have dissonance between what the indicator says and what your inspection results might say.

MR. TRAVERS: Correct. I would assume that what we would have in place -- it's early yet, and we haven't really developed the process -- but that we would have an internal process that would guide us in developing the compelling case. We would base it on whatever information was at hand, including information from the inspection program, and so forth. The internal process would make it one that is very carefully managed. So again, the

expectation would be that things do happen at these complex plants and that a few things or normal kinds of events or issues would not result in engagement. If we felt we needed to, we could do it, but it would be a very carefully managed process.

COMMISSIONER McGAFFIGAN: All I am suggesting is that it's probably going to have to be a relatively scrutable and transparent process from the point of view of the licensee. We get criticized today. One of your early viewgraphs talks about more scrutability, more transparency, et cetera. Once we divert from the model, we can't make it inscrutable and less transparent.

MR. TRAVERS: I absolutely agree. That's why when Frank Gillespie was speaking he was talking about developing the thresholds that we would use for that kind of engagement.

CHAIRMAN JACKSON: This is a question I want to put on the table. If it's best addressed by Dr. Mallett, that's fine. If not, if you could answer it now. It actually relates to this, particularly if there is ever an area where there may be a dissonance between what a performance indicator or set of indicators seem to say versus inspection findings.

Are you looking at, perhaps both in indicator land and inspection land, at sample size, and that it be

established in a way that provides a demonstrable level of confidence? Or is there any kind of statistical or sampling protocol that is under consideration in the selection of the number, types and thresholds of indicators as well as inspection observations?

MR. BARANOWSKY: I don't think we have a statistical sampling process in mind for the performance indicators. The approach there is to try and capture the bulk of the risk as we understand it and to use indicators that are broadly understood to be important to risk, which means we are going to take insights that we get across the industry in selecting these indicators as opposed to being very plant specific and picking details for the indicators.

There may be some plant-specific elements to the indicators such as performance thresholds that make sense in either peer group, or certain design features that would benefit from a plant-specific approach, but when it comes to the inspection program, I think we are talking about some sort of sampling. Bruce might want to address that.

CHAIRMAN JACKSON: If you are going to talk about it as part of your presentation, I'm willing to wait, but I want to be sure that you are going to talk about it.

MR. MALLETT: Okay.

MR. GILLESPIE: One other element. If we have this compelling case, we have two problems. One is the

plant-specific problem we have the compelling safety case on. The other is the feedback loop that says this challenges having selected the right PIs and how we are using them. So there are two elements to that when we come across it. Our intention would be to have that feedback loop in to take on that challenge if it occurs.

COMMISSIONER DIAZ: If I might be able to confuse myself, if you think of this as you being a controller in the sense of controlling processes, I think what Commissioner McGaffigan is saying is, if any one of the inputs or the desired outcome has a significant delta or error margin from what you expect, then immediately the process gets more focused, and you might take action.

There are two ways in which that could happen. It could happen very suddenly. All of a sudden you have inspection finding on something that shows you that you are out of whack. Or it could be a degrading process which is slowly changing. Either one of those could actually trigger our actions. Is that correct?

MR. GILLESPIE: That's correct.

MR. COLLINS: One the process would accommodate by the levels of engagement and the shift in the burden of proof. The second would be the more extreme case where we would have a data point which is abnormal, if you will. That would engage a scrutiny of the system as well as a

reaction to the issue.

COMMISSIONER McGAFFIGAN: One of the issues that I see is the performance indicators are always going to be lagging. They will be lagging even if they are close to concurrent. An inspection finding is here and now. You came across something and, like you say, it may be abnormal, but the performance indicators are backward looking, at best concurrent, the ones I've seen. An inspection report, as I say, the person was in the plant yesterday and he found such and such, and it's either a big concern or it isn't. If it is a big concern, despite their being in the green, you have to have some mechanism for dealing with it.

MR. GILLESPIE: Right. The big concern is probably the easier one to deal with, when it is something that is recognized as very, very significant. It's the accumulation of small things that is going to take us a lot of thought on how to deal with building a compelling case when there is an accumulation of small things.

Also, there are two thresholds we are dealing with here. One is an operating threshold which, if successful in the system, will be set high enough to give us some, you might say, margin, accounting for a one quarter or lag time when the trend shows up and crosses the threshold, but yet leave a utility sufficient freedom so that they can catch a trend and reverse it themselves before we have to interdict

ourselves. Much lower, we would hope, is the safety margin where much sterner action would have to be taken, and in between these there is a gradual engagement with us.

COMMISSIONER McGAFFIGAN: The plant that keeps coming to mind is D.C. Cook. I don't think there were lot of indicators before that inspection occurred, and then it fell off. Mr. Lochbaum might believe, and I'm sure does, that he had concerns with the ice condenser plants earlier that hadn't been fully addressed. That plant inspection comes along and the plant goes from non-regulatory difficulty to regulatory difficulty all at once. The old inspection program doesn't catch it; performance indicators don't necessarily catch it. How does it work in this new system? It's probably in the green.

CHAIRMAN JACKSON: It's in the green if you don't look at it.

COMMISSIONER McGAFFIGAN: It's in the green, according to performance indicators, in this area where performance indicators perhaps don't capture very much. I think you showed that backup slide earlier. This is probably one of the areas where you have inspection still and don't rely on indicators.

I think one of the things the industry is looking for is predictability in the regulator, the notion that not everybody is one day away from regulatory difficulty. You

still have these hard cases. Unless you can tell me how this new systems would catch D.C. Cook without having an engineering inspection.

MR. GILLESPIE: In discussions we've had, even with NEI, we would fully expect that there are four to six things a year that seem to occur by exception that we are still going to have to deal with outside the defined performance indicator risk baseline inspection program, whether it's an event that has multiple items that still stay in the green or whether it's significant design problems. And design is one of the areas which was crosscutting through all the cornerstones that came up needing to still be inspected.

CHAIRMAN JACKSON: That's the question. Will the risk-informed baseline inspection program capture risk-significant design issues or not?

MR. MALLETT: Let me answer that, Frank.

We are planning to do that. What we are also planning to do is, when we get more inspectable items defined and what we want to look at, we are going to go back and benchmark some of these events that occurred or some of these issues that came up, like a D.C. Cook, to see if we have covered in our inspectable items those sort of things

in the baseline program. I'm not saying we may pick them all up, but we want use that a way of a self check to make

sure we have been all-inclusive in our inspectable items.

MR. COLLINS: Chairman, I think the direct answer is the risk-informed core baseline inspection will probably not contain an in-depth design engineering review. That's not to say it will not be done either as a result of the supplemental or as a result of licensees doing it themselves. Much of the development of the inspection programs is going to depend on the role of the licensee as far as either routine reviews or corrective action as a result of findings, as well as those areas that we believe periodically in order to ensure that the performance indicators are giving us accurate information, we will go in and delve into. That may be different than what the risk-informed core baseline inspection is.

CHAIRMAN JACKSON: I understand the point you are making, but going back to a couple of the examples, one has to come out of this. There is some additional effort that is not part of today's discussion having to do with definition of design basis and design basis information. Somewhere along the line there has to be some kind of scoping or risk ranking in that arena, and you have to be able to say how you deal with those things that show up at the top of the list.

It's not necessarily everything, but you have to be able to say how you are going to deal with that: Where

is the information coming from? Is is licensee self-assessment? Is it some inspection that is or is not part of the risk informed?

But if it's important, if it's high in a risk sense, do you not have to address it at some level so that you don't come along and here's a surprise that shuts a plant down for a year, two years, et cetera, because all of a sudden this was something that was discovered? Maybe it was self-revealed, maybe not, and now it shuts the plant down for X period of time.

That's one of these kind of sudden surprises that on the one hand is very unpleasant for the licensee, and on the other hand, makes us look bad if it warrants a plant being shut down for two years and we've been going along saying all the time it was fine. So I feel somehow you have to get at that. It's not something you can walk away from.

COMMISSIONER DIAZ: It's going back to the same thing. We have to have the capability to perform those functions that we believe are essential to be performed. All we are going to do is going to risk rank them to a point that we know which ones those are, and that's where the specificity comes in. D.C. Cook will be captured by capability to perform.

CHAIRMAN JACKSON: Right. This will be a performance expectation that those things that come up high

on that risk ranking are dealt with, but secondly, there is a question of how does it get dealt with in this process. If it's not covered by performance indicators, if you are telling us it's not covered by a risk-informed baseline inspection program, then how is it going to be covered?

It either has to be covered by a risk-informed baseline inspection program suitably defined, or by some licensee self-assessment. Perhaps that's the way to go.

But there has to be something for those things

that show up at the top of the risk list that have to be dealt with. If you don't deal with it, you've left a big hole, number one, from the point of view of safety oversight, but secondly, you're left the big surprise, and that also is unacceptable.

MR. MALLETT: Let me make a comment. One of the things Pat Baranowsky and I've talked about is he's going to give us a list of things he believes do not have adequate, to use your phrase, performance indicators. We are approaching it from a different standpoint. We're looking at everything that we believe we need to have in the inspection program first to get this baseline assessment. Then we will modify that, depending on whether we have adequate performance indicators, and modify based on risk, we hope. I think that will address your issue, or we hope it will.

CHAIRMAN JACKSON: And thereby address his issue.

MR. MALLETT: It won't address the green coloring.

CHAIRMAN JACKSON: I'm talking about the surprise.

MR. MALLETT: It should address all-inclusive in the program if we've done our job right..

COMMISSIONER MERRIFIELD: It seems to me acute is going to be the point at which you can do the benchmarking of the performance indicators. You are going to be making a presentation to us in January of the performance indicators. At what point will you be able to do some of that benchmarking to give us some greater assurance that you've hit the mark? What's your time line for testing those performance indicators to determine, based on past performance, that they would have picked up the concerns that Commissioner McGaffigan has raised?

MR. BARANOWSKY: The benchmarking that is part of this effort is starting now. The Nuclear Energy Institute has done some of their own work, and we are laying out our activities that we want to do.

I just want to mention that we have done benchmarking of performance indicators that are similar to the ones we are talking about here as part of the Arthur Andersen work over the last several years. I have pretty reasonable belief that these things are going to have capability of indicating poor performers.

There is going to be a question of whether you want to have false positives or false negatives and statistical issues like that that we have to address. That's what we still have to delve into with these indicators that we haven't worked with day in and day out, but they are similar to ones that we have worked with in the past.

CHAIRMAN JACKSON: I think you have to present the documentary evidence to the Commission. If it's based on the Arthur Andersen type algorithm using the indicators you come up with, you need to present that even if the names have been changed to protect the innocent.

MR. BARANOWSKY: It's going to be part of what we provide in our January paper, and I think you will see information coming out as we go to the ACRS in December. So it will be coming up shortly.

COMMISSIONER McGAFFIGAN: The point for Commissioner Merrifield is that there are some areas that just aren't going to be covered. You're not going to have a performance indicator for the capability of the ice

condensers.

MR. BARANOWSKY: We're not saying we can do that. That was a problem with the old system.

COMMISSIONER McGAFFIGAN: It was a problem with the old system; it's going to be a problem with the new

systems; we're going to try as best we can to work the inspection program to fill the hole, as I understand the answer.

CHAIRMAN JACKSON: Inspection and/or other things. It could be licensee self-assessments, or required self-assessments, or whatever. Agreed upon self-assessments. What you have to really lay out is how the pieces flow together. The performance indicators, you have to know where they start and where they stop and where the inspection goes and where self-assessment comes in. Nonetheless, you have to be assured that you have covered the waterfront.

MR. GILLESPIE: Going back to our first principle, the objective statements, what information do you need that reasonable assurances objective is being met? That was the importance of the objective statements. That is where Pat is taking off from. Design shows up in every single cornerstone and different aspects of design. We will have some risk-significant approaches to it. We are trying to grapple with that problem and what comes out and how it comes out the bottom.

CHAIRMAN JACKSON: Okay. Let's move on.

MR. BARANOWSKY: That is the end of my talk and time for John Flack from the Office of Research to tell you a little bit about risk lists.

CHAIRMAN JACKSON: I was just thinking about you. You're an SR squared A as opposed to an SRA; is that correct?

MR. FLACK: I am a risk assessment engineer, not an SRA.

CHAIRMAN JACKSON: Right. So you are senior risk and reliability analyst. I'm calling you an SR squared A.

MR. FLACK: Okay. In any case, risk will be considered in all these issues, burden of proof and inspection. So let me go on to that.

Before I begin to describe how we are utilizing risk insights from both the IPE programs and PRAs that are available to support the development of risk-informed oversight process, I'd like to highlight a few issues up front that are important to the development stage.

The first is the generic versus plant specific issue. This is really a question as to the extent to which we can capture generic risk insights in formulating a risk-informed inspection process.

On the next viewgraph I'll summarize the approach we've taken to address this issue.

The next issue we will specifically consider risk in inspection and decision making and what metric and criteria we are going to use for this.

Although guidance still needs to be developed to

support these activities, we expect that that guidance would be consistent with Reg Guide 1.174, and that the risk information would be used in conjunction with other considerations such as defense in depth and safety margin.

The third issue, treatment of items not modeled in PRA, is really to keep us aware of the fact that PRAs do not

cover everything and that we will not overlook important issues like acts of commission, complex system interactions, and transition risk.

Finally, the fourth key issue involves resource allocation and use of risk to prioritize and guide the inspection process. The risk significance and availability of the PI data that Pat Baranowsky just described and risk will both play a factor in assessing our inspection needs.

This is being addressed in the ongoing research right now, which I am about to go over on the next slide.

CHAIRMAN JACKSON: You are saying there will be a plant-specific inspection program that is tied to the actual elements of risk presented by a given facility?

MR. FLACK: We are looking at it from two perspectives, generic and plant specific. The plant-specific aspect would probably involve more of the maintenance rule development, information from the maintenance rule, which is plant specific. We are trying from both perspectives. What we are trying to look at is

from the generic perspective what we can capture, and then what would need to be supplemented with some plant-specific insights, but I'll get into that in a minute.

In fact, our first step was to identify and priorities sources or risk and link these to the cornerstones using the generic PWR and BWR insights and plant-specific insights. In this process we utilized the IPE insights and findings contained in the various NUREG reports as well as the IPE database to identify those contributors found to be most important by licensees.

By scanning across the top ten sequences of each plant we were able to take a broad look at what is driving the risk at nuclear power facilities. In general, these top sequences can capture 80 to 90 percent of the contributors to core damage frequency at any one plant. Sequences that shows up to be in 50 percent or more of the plants was considered high and generic.

At the same time, we took a vertical slice using the Surry IPE and NUREG-1150 results to gain insights into what would not be captured using the generic approach. Taking this approach, we found that about 50 percent of the core damage frequency for internal events could be captured generically, but that a deeper understanding of plant-specific features would be needed to capture the full range of contributors.

Once the risk insights were identified, they were arranged into a matrix so that we could link them to each of the cornerstones. In a similar fashion, the risk was linked to underlying attributes which could then be used as a focus of the oversight activities.

Together, these form what we call the risk matrix and a framework for bringing into the process risk information.

Now that we have the risk matrix, the next step is to link the risks to the identified performance indicators, and as they become developed, the identification is still ongoing, but the above approach provides a means by which we can accomplish this task.

To summarize our first phase work, we were able to capitalize on information generated by the IPE program and NUREG-1150 to formulate a risk matrix and establish an approach that links risk insights to the cornerstones,

attributes and PIs as they become available.

Also, we are now in a better position to put in perspective generic versus plant-specific risk information. We plan to continue our effort to capture external events and shutdown risk and insights from other risk importance measures.

We will also be looking at the application of inspection resources using risk-informed approaches where

PIs do not cover the area.

This summarizes the research work to date. If there are no other questions, I'll pass it on to Bruce Mallett.

MR. MALLETT: Turn to slide 17. I believe I can still say good afternoon. I want to provide you a perspective on what the risk-informed baseline inspection group is doing as part of their project. We discussed some of these issues earlier, so I'll just try to highlight a few of them in the interest of time. There are a few points I want to make.

The overall objective of the project is to describe a program of how the NRC will conduct its baseline inspection program at all power reactor facilities. We anticipate providing this in a Commission paper, which I believe Frank Gillespie, we'll issue sometime in January or late December of this year. The anticipation is that we will provide it to the Commission in January 1999.

In establishing the project, as Pat Baranowsky indicated, we also recognized that we needed certain expertise on our inspection group. This is a monumental effort. We have 12 members on our inspection group team. It consists of individuals from various groups. We have two risk experts. We have a senior reactor analyst on the group; we have individuals from Research. We also have

representatives of the senior resident inspector program, those who are currently senior resident inspectors and those who have been in the past. We have representatives who are currently regional inspectors in the program.

We also felt it important we have individuals who are experts in each of the cornerstone areas. For example, we have a person with expertise in radiation safety, another person with expertise in mitigating systems, and we also have a representative from the Office of Enforcement on our team.

With regard to the charter and deliverables, I would first say, if you turn to slide 18, we divided the charter and tasks to reach our end product of describing this program into several key tasks.

The first one is to look at the scope. We felt it was important to first decide what the program should do overall. We discussed here today that the purpose of a baseline inspection program is to achieve an indicator of a licensee's performance, that they are operating safely, but there are two key pieces to that program. I believe, Commissioner McGaffigan, you launched us into that discussion.

One is that we will emphasize risk-informed inspections in areas where there are no clear performance indicators at this point in time. However, we will also

have baseline inspection program in areas where there are limited performance indicators. That gets to some of the discussion we had earlier.

Another key piece of the program will be where we do have performance indicators verifying that they are still providing us with the indicated results.

As far as the question of sampling, I'll address that when I get down to the process attributes.

When you look at the scope of the program, we first embark upon deciding what we want to inspect. As I indicated earlier, we are calling these inspectable items. We are providing a complete set of those. Our plan is then to modify those, depending on the outputs from Pat Baranowsky's group whether there are adequate performance indicators, and depending on the experience that we've had.

The next step I have down there is a basis for the linking those to the NRC mission on risk. Let me give you an example of how we plan to do that.

If you take the cornerstone back on slide 7, mitigating systems, the concept is similar to the improved tech spec documentation we have out there now. We'll have mitigating system. You might have a characteristic that that particular item is functional. In other words, it's capable of performing its intended function or design function.

For each inspectable item we would list its basis. Let me give you an example. If you take post-maintenance testing as an inspectable item, as a basis for that we might include why you would why you would inspect post-maintenance testing. We are envisioning that we would have a relationship with that to the cornerstone as to why it produces a desired result. We might talk about whether we have a performance indicator in there and what our inspection program is going to show versus that indicator.

Most importantly, as John Flack indicated, we will put in some risk information. Right now it's only on concept, but we envision using some kind of risk hierarchy to guide the inspector to what are the important systems or components to look at when you are looking at post-maintenance testing.

I recognize that's only a concept, but we wanted to give you that as an example of what we are looking at as how we might link this to mission and risk.

CHAIRMAN JACKSON: Don't you really want to look at it kind of in a -- you could come out at the same place -- converse way, where you would look at some system, and you could ask if the performance indicator tells you what you need about the system? Then you ask your three questions. Is there something that the performance indicator doesn't tell you? If it turns out to be that

post-maintenance testing will tell you that, then that tells you what you are going to look at. If the indicator tells you what post-maintenance testing would tell you, you wouldn't necessarily do it except insofar as wanting to validate the indicator. Is that correct.

MR. MALLETT: That's correct.

CHAIRMAN JACKSON: So you don't start that you need to do post-maintenance testing; you start with the systems and then you ask, what do I need to know in order to verify that the systems performs it's intended function?

MR. MALLETT: When you are designing what you want to look at in your program, that's correct. You might also use it in a different method. If a certain event came up, we envision you might go back and also use this as a way of

saying, do I need to even look further into this event?

If we move to the other items we put on here as key items, address stakeholders issues. We felt it was important early on to talk to the various internal NRC stakeholders and external to see what the issues are that they believe need to be addressed in a baseline inspection program. Once we have given the concept to paper, we intend to go back and use this as a check list to say, did we address all those issues?

John Flack mentioned some of those when he discussed it on slide 15. So I won't elaborate anymore.

As far as process attributes, the next step is to decide how do we use this process. We have all these inspectable items; we have their basis now; we've linked them to our mission. How do we use this? How do we tell the inspector how to use this?

We haven't got the answer to that question yet, but some considerations we have is, how much inspection do you need to do? How often do you need to do it?

Another thing we have considered is how we are going to put sampling -- we call it selecting inspectable items -- into the process. Chairman Jackson, you asked that question about sampling. We don't have it formulated yet but we do intend to include that in our description of our program.

Another item we are addressing is how can you get some generic risk information and also guide the inspector to get specific risk information based on plant specificity. How do you address type of plants, for example?

CHAIRMAN JACKSON: Mr. Flack is going to tell you that.

MR. MALLETT: He's working with us. We are using his group heavily. Mr. Baranowsky is also going to tell us some of that.

I also have some senior reactor analysts on my group that are discussing with them and interfacing to

provide that result.

The last item I put as a key issue. We are also benchmarking some other agencies to see what their programs are, what they use as a baseline inspection program, and to see if we can learn any lessons from them, or issues.

You did ask one other question I would like to add one other comment to, about the skills. One skill we do see is the inspectors and managers are going to have to have more understanding than they do today about risk information and how to use risk information. I don't know that that's necessarily a skill, but there may be some training involved in how to do that.

If there aren't any more questions, I would like to turn it over to Mike Johnson, who is going to talk about the assessment group and their project.

MR. JOHNSON: Thanks, Bruce.

Slide 19, please.

I will discuss the role of assessment, the deliverables, and finally, the team composition.

We envision that the role of assessment within the oversight framework and based on the defining principles will be to consider the results of licensee performance as measured by the objective indicators and thresholds developed by the framework group and the information that results from the implementation of a risk-informed

inspection program and other insights as developed by the inspection group to arrive at a view of licensee performance within the framework.

Then, based on the licensee's performance, the role of the process will be to identify appropriate regulatory actions that range from conducting just the baseline, up to and including issuing an order.

To communicate the assessment results along with planned regulatory actions to licensees, the public, and other stakeholders.

To provide follow-up and to verify our regulatory actions to ensure that they are successful.

And to provide a quality check and feedback, a process for continuous self-assessment, to ensure that the effectiveness of our other oversight processes, the inspection process, the enforcement process, continue to improve.

In developing the staff's final recommendation that we will provide at the end of the year, we will consider questions such as:

How do we integrate the information inputs from each of the cornerstones?

At what frequency and over what interval will we roll that information up?

What will be the methodology where we compare the

objective insights or the objective indicators with the insights coming from the risk-informed baseline inspection and other inspection and other insights?

What does that methodology look like?

What actions should be taken and what is the process with decision criteria to allow us to determine the appropriate regulatory response based on licensee performance in a manner that is scrutable and predictable? Because are concerned about scrutability and predictability.

How should we communicate the results of the assessment in actions to the licensees, the public and other stakeholders? This will include issues such as how do we provide an opportunity for licensee input and feedback as a part of the assessment process.

What should be the relation between the assessment process and enforcement? As we talked earlier and as Jim Lieberman will talk in a minute, we do recognize that there is a relationship between the assessment process and enforcement. So what should that relationship be? How will it work?

How should we phase in the recommended process with our existing processes, including the senior management meeting and the other things that we do in terms of assessment today?

And how will we measure the assessment process

post-implementation to ensure that it meets our expectations, to ensure that a year from now the process that we have recommended and we hopefully are beginning to implement does meet the success criteria that we laid out for ourselves?

We believe that the assessment process will be of great interest to licensees, the public, and other external stakeholders; arguably, perhaps of more interest than even the inspection program.

Because the assessment process will provide the primary communication vehicle for the agency on the

performance of utilities, it will have a great ability to impact licensee activities, public awareness and confidence in the NRC and its licensees. And as we learned with the SALP process, it could have a potential for unintended uses and consequences.

The assessment process will also be of great interest to internal stakeholders who will be the process implementers.

Given the importance of the process to both internal and external stakeholders, we assembled a task group of experts made up of representatives from key internal stakeholders, including the regional offices, who will be the heavy lifters in the implementation of the assessment process, as well as members from AEOD, NRR,

Research, and the Office of Enforcement.

Participants have implemented the previous assessment processes. Several participated in the IRAP process and understand the challenges of developing an assessment process, and all have participated in the workshop or are members of the inspection group or the framework group, and therefore understand the philosophical approach that we are embarking on and will be in a position to ensure that the assessment group activities are properly integrated with the activities of the other groups.

Finally, as is important with the other groups, we have already conducted and plan to conduct several additional meetings with the industry, the public, and other stakeholders in order to get early input and involvement in our development of the assessment process.

COMMISSIONER McGAFFIGAN: Could I ask a practical question?

CHAIRMAN JACKSON: Please.

COMMISSIONER McGAFFIGAN: You talked about the transition. Is there likely to be an annual briefing to the Commission on the four regional administrators' and the director of NRR's view as to how the plants are doing? Is that likely to still remain part of the process?

MR. JOHNSON: First of all, let me preface this by saying that we haven't really talked about it and done the

development that would enable me to answer your question conclusively, but let me just tell you that it is our feeling, based on the conversations that we've had in staffing the group, that there would be some periodic briefing of the Commission on the status.

COMMISSIONER McGAFFIGAN: I also assume that, based on what I read of the stakeholders interactions, that the watch list concept may go by the boards. I'm just gaming this, and I hope you guys do some gaming. If I'm an enterprising reporter, how do I still -- I've got the four regional administrators in front of me and we don't have a watch list anymore but we have the discussion list, namely, the ones that they thought important enough to call to our attention, assuming we don't have 15 or 20 minutes for each of the 104 plants.

CHAIRMAN JACKSON: We might.

COMMISSIONER McGAFFIGAN: We are doing pretty well today in time.

How do you end up having the trade press not report that last week plants A, B, C, D, E, and F were the focus of the Commission's deliberations as they received the annual briefing from the staff and you still have a watch list?

MR. COLLINS: I think the backdrop that we have to keep in mind is that none of this should be new news to

anyone other than when either the agency believes we need to take an action or we are confirming a licensee action. Any roll-up that we would take periodically would not be for the purposes of "announcing" any action against a plant. As in the past perhaps the senior management meeting that was the context, this would be a review of where we have been at any given point in time and have our actions been effective. It might be more of a status of what has previously been announced and implemented rather than a decision-making meeting.

COMMISSIONER McGAFFIGAN: I don't know how you control five Commissioners who are sitting here asking you, or even your own regional administrators, for that matter. Plant X looks like it's getting into some regulatory difficulty. I understand, Mr. Regional Administrator, you have some real concerns about X,Y,Z. Is that going to be off limits for discussion?

MR. COLLINS: I don't pretend to control five Commissioners. I guess what we would have to do is understand what the forum is. I wouldn't envision that this process is focused toward the staff. The process is focused towards having a mutual understanding of performance and ensuring that there is an entity, preferably the licensee, who is responding and reacting to those issues appropriately. If not, then we engage, we reinforce; if

appropriate, we act independently.

At that point, if we were to be in a meeting to discuss licensee performance, I would expect the licensee to be there discussing their performance and the reasons for why their performance is appropriate or not, and for the agency to be there to ensure that our actions are commensurate with that. That meeting, if a meeting is warranted in that fashion, should not be delayed annually; it should be conducted when it is appropriate.

Perhaps, in that context, the meeting we are talking about is more to review the process itself than it is to review licensee performance. That's yet to be determined.

COMMISSIONER McGAFFIGAN: I believe Mr. Lochbaum, who is going to speak in a few minutes, has suggested that at that meeting we would focus, in his scheme, on which plants are doing less well and maybe which are doing better. I'll let him speak for himself. But that there would be a discussion of how plants specifically are performing as opposed to how our process is working.

CHAIRMAN JACKSON: You could argue that the one is a test of the other. You can't ask the staff how they would control five Commissioners.

COMMISSIONER McGAFFIGAN: No, but I think I can ask the staff, I think you need to think about the gaming of

the process. All processes are gamed and you should think about it.

CHAIRMAN JACKSON: But presumably, if one gets at the issue of surprises, or one is sailing along in good shape and all of a sudden one drops off the cliff, that's the ultimate sense in which someone can "game the process." If it's an open, scrutable, continuously interactive and appropriate process with the licensees involved, it's not

new news.

COMMISSIONER McGAFFIGAN: Most of our recent watch list meetings haven't been new news either.

CHAIRMAN JACKSON: Nonetheless, when we come out with the list, everybody watches. There is a balance between having a process that is scrutable, objective, risk-informed, and so on, and the fact that the Commission has to be informed and it should be in an open process.

Mr. Lieberman, you're on.

MR. LIEBERMAN: Turning to slide 21. We've already made reference to enforcement as part of the development of the oversight process.

As Mike Johnson and others have said, to develop the assessment process, we need to establish what regulatory actions will be taken based on the performance levels of licensees. This will include consideration of the role of enforcement in the oversight process and what changes, if

any, are needed to be made in the enforcement policy.

Specific enforcement issues that the staff is considering in coordination with the oversight effort includes developing better guidance for the thresholds between minor violations and severity level 4 violations, reviewing severity level examples and enforcement policy to make them more risk informed, reviewing the process to determine sanctions, and evaluating the role for regulatory significance in the enforcement process.

As to the threshold between minor violations and level 4 violations, we've already mentioned that in the past the enforcement process has set thresholds resulting from the inspection and assessment process. As part of the integration effort, the threshold will be driven by the needs of the assessment process.

As to severity levels, the technical framework and assessment efforts will provide insights as to what is risk and safety significant for purposes of assessment. These insights should be considered in developing the severity level examples so that violations which are significant to threshold issues are significant to enforcement and vice versa.

As to enforcement sanctions, we will be considering what changes, if any, should be made to the process for assessing sanctions based on the levels of

licensee performance.

Finally, the issue of regulatory significance be to be addressed. By regulatory significance, I mean when the agency concludes that the significance of root causes and the circumstances of grouping individual severity level 4 violations are greater than the actual potential consequences, warranting their aggregation into a severity level 3 problem.

The staff has not developed a final position on whether and how regulatory significance should be used in the regulatory process. Since regulatory significance is in essence an assessment effort, the staff is proposing that the resolution of this issue be deferred until it can be integrated into the assessment process.

In the meantime, the staff intends to issue an enforcement guidance memorandum and increase its oversight of cases involving regulatory significance. For example, reactor cases involving escalated actions which now require my approval, will require the approval of the deputy executive director for regulatory effectiveness. In

addition, we intend to continue the current efforts to ensure that each case considered for regulatory significance have a clear nexus to safety.

Apart from the adjustments to the enforcement process, we have developed a proposal to address

non-escalated enforcement actions. This should be delivered to the Commission very shortly.

The changes for non-escalated enforcement actions have been coordinated with the oversight effort. The proposed changes will not prejudge the outcome of the assessment and inspection improvements; it can accommodate any needed changes.

COMMISSIONER McGAFFIGAN: You are proposing to postpone this paper on regulatory significance until the assessment process is further along. The next chart is going to tell us the schedule. How much of a delay are you talking about? Does it have to be already in place and being implemented? Is it sometime soon after January? How long do we wait to tackle this issue?

MR. LIEBERMAN: I think, Commissioner, we will be doing that in early spring. We need to understand how the assessment process works, and then we can complete the effort on the regulatory significance. Whether we can implement it completely may be a function of how long the assessment process is being completed, but the concept we should be able to present to the Commission after we understand the assessment process.

CHAIRMAN JACKSON: Have you interacted with other agencies that have an enforcement authority, such as FAA, FDA, EPA, DOJ? Have you interfaced with state agencies,

with local law enforcement, with academicians who have done studies in criminal justice or civil justice? Have you looked at SEC?

MR. LIEBERMAN: Some of all of that. We've looked at DOT; we have gone to FAA; EPA. I've gone to training programs and discussed issues with the academic community. I haven't dealt that much with the states, but I read of lot of articles on enforcement in general. So I understand what other organizations are doing in the enforcement process.

CHAIRMAN JACKSON: Where do things stand with OSHA, with what they call cooperative compliance?

MR. LIEBERMAN: The OSHA system is a little different from the NRC regulatory systems. OSHA doesn't have licensees. They have spot inspections. They inspect a group of potential safety concerns in an industry, say the paper making industry in Maine. They don't have the same degree of oversight. The analogy that OSHA has to the NRC regulatory program on giving credit to self-assessment is not exactly the same system.

COMMISSIONER McGAFFIGAN: Is regulatory significance used in other agencies? Is there a category that allows you to aggregate or do some of the things that the current enforcement policy allows?

MR. LIEBERMAN: I'm not familiar with other agencies using the specific term of regulatory significance,

but the concept of evaluating violations for the potential safety significance is not unique to the NRC process. We came up with the concept of regulatory significance, the grouping of violations, in part because of the history of the civil penalty process. Prior to 1980, our civil penalty

authority provided for a maximum of $5,000 per violation. We almost had a cash register approach to enforcement back in the 1970s. There were so many violations and there was so much money per violation and you added it up.

When we received the authority post-TMI to have $100,000 per violation and we recognized that many significant issues involved more than one violation, we came up with a concept of grouping violations together and then assessing civil penalties based on the groupings of violations. That's where the concept of regulatory significance came along. Other agencies have different civil penalty schemes. So there is not necessarily a direct correlation.

CHAIRMAN JACKSON: Okay.

MR. GILLESPIE: Going on to slide 22, which is our schedule. Short-term actions are set to happen between now and January of 1999, including public meetings more than weekly with NEI. NEI has established two subgroups to our framework and inspection groups to deal with radiation protection and to deal with safeguards.

We are hoping to have our proposal developed by the end of November. This will allow us to meet with the ACRS subcommittees and ACRS full committee the first week in December so that we might get a letter from ACRS to the Commission on our proposal, and then to the Commission in December.

Beyond January, with Commission approval and comment in the spring, develop revised enforcement guidance in the spring.

Start the phase-in of both the assessment and inspection process in June.

Implement risk-informed inspection baseline in October. I emphasize this is the risk-informed baseline, because there are regional initiative inspections which will not be completely redone.

Complete the phase-in of both risk-informed inspection and assessment by June of the year 2000.

And then a retrospective look one year later. Hopefully we will have established some credible objectives when we put this place and measure ourselves against those objectives a year later.

With that, we complete our presentation for this afternoon.

CHAIRMAN JACKSON: Thank you. If there are no further questions or comments, let me thank the staff. I

will make some fuller remarks at the end. So you are excused for the moment.

Let me, first of all, thank Mr. Beedle and Mr. Lochbaum for their patience and invite you to please come to the table.

Good afternoon.

MR. BEEDLE: Good afternoon, Chairman Jackson, Commissioner McGaffigan, Commissioner Diaz.

CHAIRMAN JACKSON: We are pleased to have you. We are particularly interested in how you see the overall progress to reengineering the assessment, inspection and enforcement program.

MR. BEEDLE: First, let me echo Frank Gillespie's comments somewhere around two o'clock this afternoon and wish you all good evening.

COMMISSIONER McGAFFIGAN: It isn't sunset yet.

CHAIRMAN JACKSON: It isn't sunset yet. It's

getting close.

MR. BEEDLE: Just a point of perspective. The process that the staff described to you during the course of the last couple of hours is one that is shared by the industry because it's going to help both the industry executives and the NRC staff focus on the things that are important to safety in the operation of these plants. In doing that, it helps us assign our resources to the things

from a safety point of view, that are meaningful, and frees us from a regulatory burden on things that are not safety related. One of the objectives of this process, at least from the industry point of view, is to help focus on that as opposed to the management of the facilities.

The four day workshop was really a very beneficial workshop in that it fostered a lot of communication between the NRC staff and the industry and other stakeholders that were present. It helped us better appreciate the direction that the staff was moving on this particular issue. So from an educational point of view, I think it was an immense success.

Did we solve a lot of problems in the process of doing that? Perhaps not, but we did have an alignment that was discussed earlier that there was a need to focus on safety, and with that we could define parameters that would help us understand that better, and with that we could also define some thresholds that would give us the ability to then take a look at inspection and enforcement and properly respond to that.

Let me have the next slide, please.

[Slides shown.]

MR. BEEDLE: You asked earlier about data. I'd like to talk a little bit about that.

First of all, the nuclear officers in the

community have agreed that the data is necessary for the agency in order to determine where the performance of the plant is, and it helps not only you, but it also helps the people that are managing the facility.

Our thinking at this point is that that data would be provided directly to the NRC in some sort of a formatted process that would make it easy to digest and process, and it would not involve pass-through through INPO and perturbate the process that INPO has got. So it eliminates a number of the concerns.

CHAIRMAN JACKSON: It would be direct.

MR. BEEDLE: It would be direct. Perhaps an appendage to the monthly operating report for each of the plants.

Would each of the plants participate? I think with reasonable assurance I can tell you that they would. So I don't think that is really an issue. Having defined up front the parameters that we are talking about, I don't think we are going to have any particular problem.

If the staff comes back and says we need six more parameters, I think we might ask some questions and try and understand why. If we could reach agreement on it, I think all the plants would then provide those additional six parameters.

We expect that the number of parameters for each

plant would be the same. So we wouldn't have a group of plants that would provide four and another group of plants

that would provide six. I think we are going to look at consistency across that spectrum.

The three year trending curves that we have been plotting would be plotted for each one of the plants. Histograms would display worst value for each plant plotted against those indicators.

PRA sensitivities would be run, and in the case of scram and mitigating systems, we are looking at something like two times a CDF or a delta CDF of one times ten to the minus five to set threshold.

Insights from the data that we have analyzed to date. The indicators do provide an overall perspective on safety performance. That is certainly our assessment.

Barrier integrity indicators show strong plant performance for almost all plants.

The initiating events and mitigation indicators exhibit the most detectable variations.

And the unplanned plant transient indicator appears to be a reasonable leading indicator of plant performance. Indicators do not reveal any design control problems.

I would remind you that this process is one focused on risk, but it does not exclude the fact that we

still have tech specs and regulations and design basis requirements to adhere to. So we are looking at assessment process, not whether or not we in fact followed the requirements of regulation.

Indicators do distinguish levels of safety performance. We see the excellent performing plants have indicators that are high in the green band; the average plants are in the low green to white band; and there does appear to be declining trends that show in multiple indicators. Recent watch list plants have several indicators that show up in the white zone.

If I could have the backup slides, please, that show the graphs.

COMMISSIONER McGAFFIGAN: All of this information is going to be docketed. If it comes in the monthly operating reports, it's public information.

MR. BEEDLE: That's correct.

COMMISSIONER McGAFFIGAN: So we can use it as we see fit. We can aggregate it, et cetera.

MR. BEEDLE: You could aggregate it, but it's not our intent that you would aggregate it. We are trying to focus on a plant's performance in those areas.

CHAIRMAN JACKSON: It's going to be plant specific.

MR. BEEDLE: Right. We are not going to give you

aggregated information; it's plant specific.

In this one, I know that the graph is a little hard to see, but here are some plant transients and unplanned shutdowns for a plant that has reasonably good performance. You can see that the industry average is that solid line. The occurrence at this plant is the dotted line. So we've got a plant here that I think, by all rights, would be concluded to be a good performer, and this is what the operational challenges look like in plant transients. These are transients that create a power change of greater than 15 percent.

This is a plant whose performance is trending in a downward direction. You can see that trend developing.

This plant's performance has been cyclic in

nature, and I think this performance indicator indicates that. It was one that, coupled with other indicators, I think you would have probably concluded should be on the watch list.

Back to the original set of slides.

COMMISSIONER McGAFFIGAN: The data you have there goes back five years.

MR. BEEDLE: Correct.

COMMISSIONER McGAFFIGAN: You are getting three year data for the plants. Is that just a matter of resources? Do you think three year data will be enough to

prove the point?

MR. BEEDLE: This is data that we had started out with sometime ago, when we were looking at this process. We think that the three year rolling average looks like about the right data to look at. I don't think that even in this one where you have that cyclic behavior that going back another couple of years makes all that much difference.

In this slide we have some data that speaks to the establishment of the thresholds just to give you an idea of what we are looking in that area. We are looking at the base core damage frequency. In plant A it's 1.47; in plant B it's 4.6. So we see a different range in there.

If we use a delta CDF at one times ten to the minus five or 1-E to minus five, and then two times the CDF as the threshold, the resulting behavior that you see would be, in the case of scrams, the CDF was based on four. You could set a threshold using the delta of ten scrams, and if you were going to use a two times, a doubling of the CDF, you'd have to have something on the order of 14 scrams. So that would give you the range in that white band of, say, four to ten.

If you look at diesel unavailability and HPSI unavailability, you get an idea of the sensitivity of this.

From where we typically see the plants operating, to get a significant change in availability as measured by

the core damage frequency, you are looking at a fairly significant increase in unavailability. You really have to make it a point to have your system out of service for long periods of time before you start encroaching on a safety limit in this case.

Plant B, where the CDF is a little bit higher, those ranges are slightly different but not significantly different.

So there is a wide spread in this data threshold that we would be looking at.

COMMISSIONER McGAFFIGAN: Is the idea that we would have different thresholds for different plants? That might be a little difficult to implement. Or is there a single threshold for a performance indicator that would work for all PWRs or all BWRs, or whatever?

MR. BEEDLE: I think we are going to end up with different thresholds, with some different parameters for the BWRs and PWRs.

COMMISSIONER McGAFFIGAN: Is it a single threshold for all plants, or does this analysis suggest that you have a different threshold for each plant?

MR. BEEDLE: I think it will be a different threshold for each plant.

CHAIRMAN JACKSON: What is consistent is whether the trigger is a specific delta in core damage frequency or

two times or some specific multiple of core damage frequency, or a change in the base to cored damage frequency. That's the commonality of approaches. Is that correct?

MR. BEEDLE: That's correct.

We are currently working on the trend graphs and histograms and would expect that a little later this week we'll have those available for about two thirds of the plants.

PRA sensitivity results will be provided sometime later this month for a representative set of plants, approximately 25 of them. So I think we are reaching some consensus on what the data collection effort should be and what those thresholds should be.

We are working closely with Frank and his various task forces on this, and we think that we are reaching agreement on some technical issues that help us understand safety at the plants.

COMMISSIONER McGAFFIGAN: One of the conversations we've had with ACRS in the past is that we probably have pretty good confidence on delta CDFs. I'm still stuck on this notion that we might have for plant A so many safety system actuations that get you into the white zone and for plant B have a different number based on IPE that weren't all done in a standardized way. It's sort of taking my

breath away at the moment.

CHAIRMAN JACKSON: But the delta CDF --

COMMISSIONER McGAFFIGAN: The delta CDFs I can understand. Delta CDFs is part of it. But part of that was two times CDF. We were using the actual number.

CHAIRMAN JACKSON: That's the point. You have to settle on which of those is the acceptable metric, right?

MR. BEEDLE: Go back to the slide with the plant A and B table on it. In this slide we had, for example, diesel unavailability of .61 percent. I would argue that any plant that is getting up into the ten percent unavailability on its diesel engines is probably going to wonder what's going on with its maintenance group. I don't think the manager of the facility is going to allow that. Forget whether or not it's a regulatory threshold. When we first posed in the area of scrams that we set the green band at the level of three, we had tremendous opposition on the part of the industry. They said, well, that's ridiculous. We never have more than two. Why don't we set it at two?

CHAIRMAN JACKSON: The approach that is most consistent with Reg Guide 1.174 is the delta CDF approach.

MR. BEEDLE: Right.

CHAIRMAN JACKSON: At any rate, the delta approach is the approach in Reg Guide 1.174.

COMMISSIONER McGAFFIGAN: But where he derived

those numbers, I thought --

CHAIRMAN JACKSON: No. If you put the viewgraph back, it means that for that particular plant, in order to have a delta of ten to the minus five, for that particular plant theoretically it would require ten scrams, or diesel generator unavailability of about 30 percent, or HPSI unavailability of about 14-1/2. That's what that is saying.

COMMISSIONER McGAFFIGAN: Therefore, that's where the threshold should be for the red zone.

CHAIRMAN JACKSON: For that plant.

MR. BEEDLE: That's where that bottom of the white

zone, start of the red zone would be.

COMMISSIONER McGAFFIGAN: We are using delta CDF there, but at the top, to decide where the green zone/white zone interface is, the proposal is that we use the base CDF. So it's four for that plan for scrams and .61 percent and 1.81 percent, and then a different set of numbers for the other plant. So we are using the CDF itself as a mechanism for deciding the green zone.

MR. BEEDLE: I think in the case of the green zone we are looking at perhaps CDF, but we are also looking at some history of performance of the plants in the 1990 to 1994 range.

COMMISSIONER McGAFFIGAN: Am I understanding you for scrams, three across the industry? We're not going to

do three at one plant and four at another?

MR. BEEDLE: In that case, we'll probably have three across the industry.

COMMISSIONER McGAFFIGAN: For diesels, rather than 11 percent versus 28 percent, it would be 10 percent across the industry?

MR. BEEDLE: I'm not sure, but I would guess that the diesel would probably be somewhere in the one percent range for the green band. I can't imagine us putting it down at 30 percent. It may be 20 or something like that. It demonstrates that there is a tremendous margin between an operationally significant condition and a safety significant one. The risk insights that we have developed over the last several years help us understand that every time you have a wing nut out of position doesn't mean that the plant is unsafe. That's really what we need to focus on.

CHAIRMAN JACKSON: Your point still remains about having some consistency in approach. What that consistency in approach translates into is a fundamental question. Is it going to vary by plant, or do we want to just pick something and say that this is in fact the threshold? I think that's a regulatory decision.

MR. BEEDLE: I think once we get all the data in here, our task forces are going to look at that and say what makes sense. I think part of what makes sense also, you

have to factor in your ability to regulate that and get some consistency and standardization.

COMMISSIONER McGAFFIGAN: I'm just trying to anticipate. Mr. Lochbaum at some point is going to pipe up and talk about his views as to how good the IPEs are and all that. I guess he's waiting his turn patiently.

MR. BEEDLE: I would also argue that as we look at the spectrum of plants, when we see one that looks like it's an outlier, we may have to take some special action in the case of that one. It will also point out difficulties associated with some of the PRAs or IPEs that have been done at the plants.

CHAIRMAN JACKSON: Are you done?

MR. BEEDLE: I'm finished.

CHAIRMAN JACKSON: Mr. Lochbaum.

MR. LOCHBAUM: Thank you for this opportunity to comment on the NRC's initiatives in the area of inspection, assessment and enforcement. These important areas are the foundation of the NRC's reactor safety oversight function. It's vital that they be as effective as possible.

The staff mentioned the recent four day workshop. I attended that workshop. It wasn't as useful as it could

have been. The structure of that workshop was such that it would have been virtually impossible to result in anything but alignment. The breakout sessions and the cornerstones

were determined well in advance of the workshop and really could not have been changed by the attending stakeholders.

The workshop was, in my opinion, little more than a dog and pony show that the staff could tell you today that it had met with the stakeholders and had their endorsement.

In my opinion, those four days could have been better spent examining the pros and cons of NEI's proposed assessment model and its regulatory scheme.

I have the following comments on the specific items discussed by the staff today.

Commissioner Diaz already commented on one of the concerns I had with respect to compelling cases.

I felt that the NRC staff in the past has had a major flaw in its existing program and that there is a very low threshold for compelling cases. The staff, in my opinion, should very rarely overturn indicator results. I agree with Mr. Gillespie that if you do overturn indicator results, that also casts doubt on the validity of your indicators. That needs to be reexamined. Basically, that shouldn't happen very often.

In the same section, defining principles, the staff said that the assessment process results might be used to modulate enforcement actions. We strongly feel that enforcement actions should be based exclusively on the severity of the offense. Under no circumstances should

enforcement actions be increased or decreased based on assessment results.

We feel that a major flaw of the current senior management meeting process, which doesn't seem to be addressed in the current plans of the staff, is that the managers spend too much time deciding who's naughty and nice and too little time figuring out what to do about the naughty ones.

The primary focus of the SMM process should be to develop action plans to handle plants determined by an objective assessment process to be performing badly.

The staff spoke about a risk-informed oversight process to guide its inspections. Virtually all of the staff's efforts seem to be directed towards ensuring that they look at the right areas. The staff needs to spend more effort on figuring out how to properly respond to their inspection findings. We remain baffled by the current inspection process, which seldom triggers a scope expansion either on the licensee's part of the NRC's part.

The staff conducts inspections of very small samples. The findings from those limited audits need to be placed in context, but they are not. We think that was the problem at D.C. Cook. The inspection that was done last August and September revealed a problem that begged for scope expansion that seemed late in coming.

We are also disappointed that the staff hardly ever asks the licensees to explain why they didn't find the problems first. After all, the licensees have the burden for assuring that their facilities are maintained in accordance with safety regulations. When the staff has evidence that a licensee may be shirking that burden, the staff needs to find out why.

We hope that the revamped NRC assessment,

inspection and enforcement processes will at least obtain one element, namely, the ability to occasionally call some event or plant condition unsafe. We feel that plants like Millstone Unit 3 and D.C. Cook were operating unsafely for years prior to their lengthy outages.

We are not asking the NRC to agree with us on these cases, but it's crucial that the NRC have a line between safe and unsafe practices and to occasionally identify something as being unsafe. Without such a line, you can never really adopt a meaningful risk-informed regulatory policy. Quite simply, if everything at every plant is safe, you don't know where to focus resources and attention. Besides, it's very difficult for the public to understand why you could fine NU $2.1 million or AEP half a million dollars for safe operation of their facilities.

Thank you for this opportunity to present our views. More importantly, we appreciate the fact that you've

undertaken these important initiatives.

CHAIRMAN JACKSON: Thank you.

Let me ask you to kind of expand a little bit on what you mean when you say that so far all the efforts seem to be looking at trying to decide what the right areas are as opposed to more effort on what to do.

MR. LOCHBAUM: For example, Mr. Collins during the early presentation talked about the annual meeting or what conceptually that might anticipate. In our view, that should be talking briefly about plant performance or what the NRC's assessment is. We agree that that's a backward looking thing. There should be no new surprises in that because it's all based on available information. But we think that should be complemented by looking forward at what the NRC is going to do the upcoming year to address any weaknesses that have been identified.

We think the purpose of that meeting is twofold. One, to ensure that the public and all stakeholders know what the NRC's current assessment of a plant is, but also to identify what the NRC is going to correct any deficiencies or weaknesses. If you have a series of these things every year, or however periodic it is, if you keep identifying the same problem over and over again, that reflects on the regulatory staff effectiveness as well as the licensee's effectiveness. It captures both.

We think too much effort is focused on grading the plants and not responding to what those grades tell you or what needs to be done to improve the low grading plants. That's just an example. We seem to see this in many cases.

COMMISSIONER DIAZ: Have you done any work in trying to define or bound what unsafe means? Is that a category of radioactive releases? What are the things that you would work with?

MR. LOCHBAUM: I think the closest attempt that I've made to addressing that question is the presentation that I made at the NS meeting in Nashville this past summer.

What I advocated there was when a plant event or a condition is found at a plant, the licensee should evaluate the as-found condition, whether it's a single event or an aggregate of many different problems, and look at that event with all postulated design basis events, LOCA, loss of offsite power, et cetera, and see whether the 10 CFR 100 limits would have been exceeded. Starting from that point, would the public have been jeopardized had the events

occurred from that degraded point? If not, then that event poses relatively little safety risk. It needs to be corrected, but it's not a safety issue per se because the public would have been protected even if the accident had started from that point.

Occasionally you find that the 10 CFR 100 limit

might have been violated had the event occurred from that degraded point. That to me is a potentially unsafe condition, and that is where everybody should be focusing their attention. Not the other ones, but the ones where the public might have been harmed. And also plant workers under GDC-20. I think applying that standard to identification of as-found conditions is the way to distinguish between safe and unsafe.

COMMISSIONER DIAZ: You say potentially unsafe. So there is a potentially unsafe and there is an unsafe.

MR. LOCHBAUM: I agree, but the public needs to be protected even if the accident occurs. So it is potentially unsafe, but I'm not sure in my mind that that's more than just semantics or just a technical term, because had the accident occurred at that moment, then the line would have been crossed; the public would not have been protected, and that can't happen.

COMMISSIONER DIAZ: There is a difference.

MR. LOCHBAUM: There is a difference, right.

COMMISSIONER McGAFFIGAN: What do you think the prospects are for the success of this enterprise in terms of defining performance indicators? My recollection is that you put out a report annually that uses a performance indicator that is heavily focused on who identifies problems. My recollection is you gave Oyster Creek high

marks and other folks lower marks, and whatever. That is your favorite indicator. Or it's an indicator. Have you tried to insert that indicator into this process? Does it fit in any way? Do you think we are missing things in this NEI/NRC assessment process that is evolving?

MR. LOCHBAUM: We looked at performance indicators. When we provided the October 2nd comments on the IRAP that were submitted, we didn't include my favorite indicator for the reasons that it didn't seem to be better than the indicators that NEI was proposing. I can't develop NEI's indicators independently, so I didn't have access to that information. Had I had that, I probably wouldn't have used the indicator I used.

I think the long-winded answer to your question is I think NEI indicators are better than what I was using, and I would prefer to continue using those. With them being public, I shouldn't have any problem doing that.

COMMISSIONER McGAFFIGAN: Okay.

CHAIRMAN JACKSON: If this process closes that gap in terms of what the staff is going to do based on what it finds, or what the NRC is going to do based on what it finds, would that address the major part of your criticism?

MR. LOCHBAUM: I think so. One of the things that intrigues us about the NEI process is the trending. When you start getting into the white area, that's when the

regulator should get involved. The licensee will already be trying to turn it around, but that's when the regulator should provide whatever inducements are necessary to ensure that it happens.

I am also encouraged by the fact that it doesn't

look like there is going to be a roll-up of however many indicators there are into one global indicator of good or bad. I don't think that would have been entirely fruitful. So it's good that it looks like it's not going to happen.

I think the answer to the question is yes, that concept seems to be the right way to address our concerns or criticism.

CHAIRMAN JACKSON: Do you believe that the performance indicators and the risk-informed baseline inspection program will cover the waterfront?

MR. LOCHBAUM: No. I think there will continue to be surprises. I don't think any process will ever eliminate surprises, but I think we need to reduce the number of surprises we have. It looks like these initiatives will go a long way toward reducing the number of surprises, and I think that's positive from that standpoint.

CHAIRMAN JACKSON: If I can paraphrase you -- you can agree or disagree -- you're basically saying that the missing element is what the regulator is going to do based on what the regulator finds.

MR. LOCHBAUM: That's right.

CHAIRMAN JACKSON: And that somehow the work still hasn't, to your satisfaction, delineated safe from unsafe.

MR. LOCHBAUM: I'm still worried about the threshold about when the plants get shut down. Mr. Beedle pointed out that backward looking, some of the data showed that the watch list plants, some of the indicators moved into the white zone. It didn't look like any of them moved into the red zone, which would have necessitated a plant shutdown. Some of those watch list plants were shut down. Was that a right decision or a wrong decision?

I need to go back and look at that. I haven't done that, so I don't know the answer to whether this process would solve that.

The one thing I was concerned about in the staff's presentation was about if you are operating in the green zone and a violation comes up, do you not overlook that, but do you give the licensee credit for that? We are kind of against that. We think that process could lead to more surprises because you tend to dismiss early indicators of problems until it becomes so bad that several indicators go into the white or things get so bad that you get the regulatory bag brought out. We are kind of concerned about that. We think all sanctions should be equal, depending on the offense, no matter zone you are in at the time.

CHAIRMAN JACKSON: Do you have a comment?

MR. BEEDLE: We've talked a lot about what is the regulatory response. I would remind you that we still have tech specs and rules and regulations to follow. This assessment process does not set any of those conditional requirements aside.

The question, I guess, is really how significant is the violation. I think we are headed toward a process that would help us understand that, and that would then determine what sort of reaction the regulator would take in response to the violation. I think that's really what the whole point in this assessment process is all about.

CHAIRMAN JACKSON: Are you operating from the perspective that the assessment process in the end should never lead to specific regulatory action?

MR. BEEDLE: No. I'm saying that the assessment

process would help the regulator understand how to treat the violation.

CHAIRMAN JACKSON: No, no, no. Let's leave aside violations. I'm talking about general performance.

MR. BEEDLE: I think the general performance would be dictated by the performance indicators.

COMMISSIONER McGAFFIGAN: Do either of you have any concerns about the process whereby we are going to try to integrate these objective performance indicators with

inspection findings in the areas where the performance indicators are not going to provide useful information, and then any other inspection findings that we come across? Do you have any suggestions as to how to make that process more scrutable or transparent?

MR. BEEDLE: I think there are a number of areas where these performance indicators are not going to tell you about the compliance of the facility to the rules and regulations, and I think those inspections and part of the core inspections and baseline inspections that they discussed earlier. I think when you find problems as a result of those inspections to supplement the performance indicators, again the test of significance is whether or not they have created problems from a safety point of view.

CHAIRMAN JACKSON: Right, but if it's risk informed in the first place, presumably one is looking at the --

MR. BEEDLE: It would help you determine where your inspection effort would be devoted.

MR. LOCHBAUM: I would agree certain inspections have to continue because they are not covered under performance indicators, like human performance and training. They have to have a fitness for duty that falls in that category as well.

I also think this whole process, I don't know

whether it's allocated equally among assessment, inspection, and enforcement, but collectively there is a greater emphasis on corrective action programs of licensees. I think that greater emphasis will do more to ensuring there are no more surprises than anything else. The key difference between good and bad performance is the adequacy of their corrective action process. Everything I've heard from all three components is to ensure that that is a good corrective action process.

CHAIRMAN JACKSON: Commissioner Diaz wanted to make a comment.

COMMISSIONER DIAZ: I just want to make a comment. Without preempting the Chairman, I really want to express how good I feel about what is going on. I think that the staff has made a very valiant and a very intellectual effort to get out of the box and think ahead and provide us with a risk-informed framework that will serve this country better. I want to thank also the industry and the stakeholders, and Mr. Lochbaum. This has been a fast and furious, but it has been a very good process. I am very encouraged by the results and I look forward to see you all soon again to finalize it. Thank you.

CHAIRMAN JACKSON: Thank you.

Let me just say on behalf of the Commission, I do commend the staff, NEI, all the stakeholders, for working

together in developing improvements to the plant assessment and oversight process. I would urge that if it is true that

others are provided with a fait accompli that there be more real opportunity for participation and influence on the process, because in the end there are many stakeholders, and we have to ensure that the public or the public surrogates have an opportunity to be involved.

As the staff itself has pointed out, although we have made significant progress, and I am commending you for that, much work remains to be done. The decision thresholds, for instance, for increasing regulatory attention and regulatory action have to be well conceived; they need to be benchmarked against historical experiences and as easily implementable as possible. So I would urge the staff to stay focused, and all the stakeholders to stay focused on those principles.

I would like to thank two of our stakeholders, Mr. Beedle from NEI and Mr. Lochbaum from UCS, for your comments. I appreciate the thoughtfulness that you put into them. They will be very helpful as we go forward.

Unless there are further comments, we are adjourned.

[Whereupon, at 5:00 p.m., the briefing was concluded.]