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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

PLANT OPERATIONS SUBCOMMITTEE

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TUESDAY

JUNE 10, 2003

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KING OF PRUSSIA, PENNSYLVANIA

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The Subcommittee met at 8:00 a.m., in the Conference Room of the Nuclear Regulatory Commission Building, 475 Allendale Road, King of Prussia, Pennsylvania, John Sieber, presiding.

SUBCOMMITTEE MEMBERS PRESENT:

JOHN SIEBER

STEVE ROSEN

TOM KRESS

MARIO BONACA

BILL SHACK

GRAHAM LEITCH

VICTOR RANSOM

GEORGE APOSTOLAKIS

A-G-E-N-D-A

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

(8:30 a.m.)

MEMBER SIEBER: Good morning. It has been noticed in the Federal Register, it is a meeting of the Advisory Committee on reactor safeguards and, the plant operations subcommittee of the ACRS.

The Federal Register notice for this meeting was published May 14th, 2003. The designated federal official for this meeting is Maggalean Weston, who is back here and, other ACRS members in attendance are Steve Rosen, Tom Kress, Mario Bonaca, who is also the ACRS chairman, Bill Shack, Graham Leitch, Victor Ransom and George Apostolakis. Our executive director, Mr. John -- Dr. John Larkins is also present with us this morning.

So, with that, I think we are ready to begin. Mr. Miller?

MR. MILLER: Well, it's indeed a pleasure to welcome the ACRS to Region 1. The regions are on the front line, so to speak. What we do is very important work. Our job is to provide effective oversight of the plants that are operating in this region and, a number of plants that are in the decommissioning status. Our job is to provide effective oversight to assure, above all, that the

operations at these plants are safe and, of course, that, as well, that the public understands -- has an understanding of the status of these operations and, through that process has confidence that their safety is in fact being protected. So, it's important work.

The agenda that we have laid out is one where, following some opening remarks by me and an overview, really, of the region and of our activities and our challenges. We will present Jim Wiggins, my deputy and the division directors will present a perspective on the reactor oversight program, how we implement that program. And, our focus is going to be, really, on challenges.

No program by itself is sufficient. Programs can be improved and, certainly, are necessary to guide activities, but, in the end, it's the people implementing the programs that make the difference. And, so, what we hope to do today is to talk about the program, emphasizing the challenges that we face, the techniques, the approaches that we find are important to be effective.

As if we needed any reminder about the importance of this, Davis Besse, certainly points out the -- how vital it is to have an effective inspection and oversight program. And, I mentioned people. One

thing, above all, that I'm proud of as regional administrator in this region is the staff of the region. We have an outstanding staff. And, so, I think it's appropriate that as a part of the agenda, we have members of the staff here today in the audience, but, this afternoon, we will have a session, a round-table session, if you will, which will permit you to interact with a number of staff members, talk about technical issues, talk about, again, the methods that we've employed to be effective in our oversight. And, hopefully, you will find that of use.

I've asked members of the staff and the management team that will make presentations to, as we go through, just give you a brief introduction, talk a little bit about their background, just so you get a sense of the strength of the staff and the backgrounds that they bring to this important work.

Jim's already covered the logistics and, so, John, with that, let me just turn it back over to you. Welcome to the ACRS.

MEMBER SIEBER: Thank you. I think this is an appropriate time to continue on with the presentations. I would like to say that we do appreciate the fact that the region has gone, apparently, to great expense to provide information to

us and, we are, like you, working on a number of things that are pertinent to operating plants today, including Davis Besse and, the agency's reaction to that and, assessing whether that reaction is the right one, or, perhaps, should be changed. Overall, I think the agency has followed its procedures. The procedures are well established and well thought out. Every time there is an event, I think it's an opportunity for us all to gather the lessons learned and seek some introspective look at how we react and how we deal with these kinds of issues.

Other issues that we're interested in as a committee is the use of risk information in the regulatory and enforcement process.

UNIDENTIFIED SPEAKER: We can't hear you, Jack.

MEMBER SIEBER: Pardon?

MR. MILLER: There's a hand mike there that you might use and see if --

MEMBER SIEBER: Let's see if it works. Okay.

The other area that we're interested in, of course, is the use of risk information in regulation and in operation of the plants. We were at Peach Bottom yesterday to ask questions about how they

use risk information to operate the plant and maintain the plant. And, it's important for us, for example, to know and understand that the SDP process is working, even though we still have another year before the final fire protection SDP is finalized and issued. We have a keen interest in the ROP, to make sure that that process works.

So, these are the kinds of things that I hope during the day that you folks can address for us to some extent and, that we will ask questions from time to time as we go on and, if it's going to be covered later in presentations, you can tell us that and, then, we will provide an IOU to see that our questions are answered.

So, with all of that, again, we thank you, you and your staff, very much for hosting our visit here. And, I'm sure that we will learn a lot. Thank you.

MR. MILLER: We see this as a very timely visit. I mean, in this period of reflection in the aftermath of Davis Besse, there's perhaps no more important group than the ACRS, to look independently at how we're doing business, the methods and the like and, so, I think that the presentations today will in fact address the issues that you are interested in.

We know later in the week, I believe later in the week, you're going to be addressing safety culture, much discussion about safety culture from my discussion. And, I think throughout the day, I think you'll hear a number of perspectives that, hopefully, will be useful to you on that, as well as, you know, the other issues, risk, how we perform our work and the like. So, I think it should be good.

We also would encourage you, our presentations and the spacing of the timing of these presentations were set up to allow a fair amount of time to interact. So, we're just counting on you to interrupt us as we go through. We're going to say a number of provocative things, so, I'm sure you won't need provocation, you'll ask questions, anyway. But, we look for a good exchange.

MEMBER SIEBER: I would like to point out that yesterday in our meeting at Peach Bottom, the resident inspector was there and provided answers to some of our questions, which, in my opinion, were -- showed an excellent understanding of what the mission and the actions of the agency really are. And, to me, when I listened to this gentleman talk, I was quite proud that I work for the agency.

MR. MILLER: Yes. That's Tony McMurtry

and, there are many more like Tony and, many of them are sitting in this room. And, you'll have an opportunity to interact with additional staff. In fact, with your permission, what I'd like to do before I start is, at least have the folks up front at the table, sitting here, introduce themselves. I'm Hub Miller, the regional administrator.

MR. WIGGINS: Jim Wiggins, deputy regional administrator.

MS. WALKER: I'm Tracy Walker. I'm the communications coordinator for the region.

MR. ROGGE: I'm John Rogge, I'm the current deputy director for reactor projects.

MR. BLOUGH: I'm Randy Blough, director reactor projects.

MR. LANNING: Good morning. I'm Wayne Lanning. I'm the director of reactor safety.

MR. HOLIAN: Brian Holian, deputy director DRP, normally, have been director of Indian Point several projects.

MR. CIRLENJAK: Jack Cirlenjak. I'm deputy director of protective safety.

MR. MILLER: So, we've got a good team and, you'll hear from others as they proceed.

There's a book -- You have a book and, I'm

going to be talking from, you know, a number of slides. And, by the way, also speaking of people, in the front of your book there is a set of photos that layout the organization and you can place a face with a name. But, the next section is the chart for values.

What I'd like to do is to give you, first, an overview, really, of the region and, beginning with a bit of history and historical perspective. I do that with some trepidation, because John, you're here and Graham's here and, Mario are here and, they've been involved in Region 1 much longer than I have been involved. But, I'm going to give it a go, anyway.

I think the context is, often in everything and, much of what we face today in the way of challenges relates to how the industry developed in this region. It has been a hot bed recently of deregulation and consolidation and, that brings with it a number of impacts, positive ones and, then, some -- also, some important challenges for us as that unfolds. Public interest in the northeast is strong in nuclear power. There's an active citizenry, the New England Town Hall or Town Meeting, that concept is played out time and again in this region. We're blessed with a very active, interested group of

citizens and it has a big impact on how we do business in this region.

I'm going to talk about resources and challenges in staffing. Staffing is, in some respects, perhaps, our most important business, the key to meeting the mission and, we've recently had significant challenges. So, there's a fair amount to talk about there. I'll cover it very generally and, there will be subsequent conversations.

And, lastly, I'd like to talk a little bit about philosophy, if you will, the approach to oversight. And, I've put the words there, safety culture, put them in quotes. I'd like to at least give you a perspective of this region.

If I could, the next slide, historical perspective. The system, the whole concept of developing nuclear power and harnessing -- harnessing nuclear power for producing electricity really kind of got it start here in the northeast. The Yankee system, which involved multiple owners, operating a number of plants in the northeast. Yankee Rowe, I think was the first plant to get an operating license. A first large plant to get an operating license. That license occurred in 1960. I think they began operations in 1963.

But, what it set up was a situation for a number of plants, small, single unit plants that were operated by a consortium of owners. My sense is that no self respecting utility in the late fifties and early sixties would be caught dead without -- without owning at least a piece of a nuclear power plant. And, so, what got set up was a, again, system of ownerships that involved, you know, six, half dozen to as many as nine or so owners.

Now, along with that came some important challenges. Governance was a very challenging thing. A number of you much closer to it than we are, were not involved in the meetings, but, my sense is that often nothing moved forward until you brought the last owner along. And, so, it set up a very challenging situation for people trying to manage these plants.

Also, my sense is that Yankee Atomic, a curious situation. Yankee Atomic with this new technology of all of the interest that there was in nuclear power, a growth industry, it attracted a great number of very savvy people. And, so, you have the situation where Yankee, the Yankee system was populated by very competent people, but, they were centralized at a distance from the plants and, so, set up was a challenge in terms of supporting the plants

from a -- from a distance.

This -- As time went on, of course, additional plants were built. A number, you know, the larger stations, of course, were built and began to operate in this region and, then, beyond. Graham, of course, was involved in Limerick and bringing those two big units on line. So, the complexion changed a bit. But, what came with this was a situation where in worst case TMI standards weren't what they needed to be. There were challenges. And, in fact, this region, if you look at it, there were eleven different sites, 17 units in this region, were at one time on NRC's watch list, were on some form or trend and the like.

So, I say this because in some respects even today, as we will hear Randy and others talk about plants and the challenges. A number of the issues we're dealing with today are really legacy issues. They're issues that go back to the problems that set in as these plants were operated under this system.

The other thing of note here, of course, is that there have been enormous public interest in a number of these cases, some more than others. Millstone, of course, gathered enormous attention.

I've got Shoreham listed here. Shoreham may be a bad example, because it never really operated for any significant time. Seabrook, with issues involving emergency preparedness. There has been this very strong public interest that I talked about. Salem, the period that it was on the watch list. You can go right down the list. So, that's kind of a historical picture.

Now, what has happened, the next chart, this shows a comparison over ten years. And, actually, this is a little bit, I'm going to say, deceiving is the wrong word. Yankee Rowe, I believe, made a decision to shut down in 1992, about that time frame that it ended operation. But, really, from about 1997 on, both of the chains that you see on this chart occurred. In 1993, if I go back to that, Yankee Rowe was still operating, there were 21 sites, 30 units. I say 17 owners, that's also deceiving. There were 17 different, I think the best term is, operator owners, because there were many owners behind the scenes, far more than the 17.

But, over the past several years, certainly, since the time that I've come to the region, there's been an enormous change in consolidation. The -- Virtually, every plant in this

region is now a merchant plant. And, I think that as Region 1 is unique in that regards. There are other merchant plants out there across the country, but, none -- no situation like exists here. Denay (phonetic), actually, is the last, that is still regulated and, it will become a merchant plant and be sold, the plan is, I guess, by the end of the year.

So, what you have in this, of course, is the departure of ten -- ten owners and, these are big former players, Boston Edison and Consolidated Edison, GPU, Ducaine Light, others have departed the scene. And, what has happened is, we have a situation where there are four new owners, a number of who have come and now have bridged across regions, Entergy, the biggest player, new player in the northeast, we regulate now as much of Entergy as Region 4 does. Dominion from Virginia, operating Millstone. Florida Power and Light, operating Seabrook. And, I'm sure I'm missing one, but, the point is, there's been this consolidation.

Well, what have been the effects, I often get asked the question. But, isn't this deregulation inexorably lead to problems? The need to, you know, removing the capacity for these plants, to go back to utility and get coverage for proven costs. And, on

the face of it, that's a very good question. For the most part, this development has been very positive. It has been very positive because it has required companies to be far more focused on effective management. And, there's been much discussion about it and, I don't need to go on at any length here, but, what we've seen are better processes. And, you're going to hear a lot of talk about corrective action programs. But, at the root of those are very mundane practical things like effective work control. Effective work management processes. The person on the street doesn't have a clue how hard it is to get work done at a nuclear power plant. With the number of organizations involved and the complexity of the units and the number of -- number of components that are involved, it's a very difficult process. It's really an issue of logistics and effective management of the logistics.

So, what we've seen, by and large, in this consolidation is professional players. Players with a significant corporate resources and experience coming in and instituting a common basis across a fleet of plants, or a number of plants, processes that have been proven to be effective. And, so, in that respects -- in that respect, this has been a positive

development.

John, a question.

MR. LARKINS: Yesterday when we were at Peach Bottom -- Can you hear me? --the issue came up of resource allocations, how much power did the plant manager have in procurements he wanted to purchase in replacement components or do upgrades, thing like that. He seemed to be somewhat limited in his ability to make decisions about what he could buy above a certain level. I forget, whether it was half a million dollars, he had to go to corporate. And, it raised a question about how quickly they could make upgrades or bring in replacement components and things like that. We couldn't get a good answer.

MR. MILLER: Let me address that. In theory, the process of regulation is one where, in theory, there was a premium on effective management at that time. But, my perception is that under the old system, there was a great deal of room for management. The demonstration to the utility commission that costs were prudent, I'm sure, at times were difficult, but, often not that difficult. And, so, what has come about clearly is a much more business-like approach to not only doing work, but, planning -- planning work.

One of the things that we're very

interested in, we're focused on and, Randy and I were just at Seabrook this past week. Spent two days at Seabrook. And, a lot of our questions were, what is your plan? What is your long-term plan? Are you taking into account obsolescence? And, one area that is of concern to me is the area of, you know, logic controls and the INC area where there's just a great -- You can talk about aging and components, I guess, that relays and think of Limerick and, you know, everybody's got their set of INC equipment that is going to wear out and, the question, Is it in the budget. Are you taking into account of long-term -- Are you looking at the long-term investment, especially, for these plants that are in this merchant status, because they don't have the capacity to reach back and say something has emerged and, we need you to cover it. They've got to make it in the marketplace.

And, so, what you see at this plant and, this is new for a lot of people and, as we go to the plants and, we heard it at Seabrook the other day and, we've heard it at all the plants in this region that have gone through this change, initial reaction from many people is not as easy as it used to be and, there's just an overwhelming emphasis on cost and budgets and defending, or making a case for spending

money. Where, before, it was not as much -- as much a problem. I'm sure that's not entirely true and, I don't want to look in who operated under the old system and under the new system as well, I think, but --

MEMBER LEITCH: It's interesting. One of the questioners, part of the discussion at Peach Bottom yesterday, they were discussing limits of approval for site vice presidents. And, they asked me, well, what was the limit when you were the site vice president? And, I don't know if there ever was one. I mean, that was the understanding, he had to justify certain projects, but, there wasn't the formal structure that you could approve up to this and, beyond that, you'd have to get to a higher level and so forth. So, those formal processes that you're talking about are, I think, relatively new.

MR. MILLER: To me, it brings out the importance of one other thing and, here's where the ACRS has always been very helpful and, you hear a lot of talk about it today and, that's risk informing the decision-making process. What you see at virtually all plants right now, it is a bit of a zero zoning, not complete. I have a feeling that if it was all zero zoning, that there wasn't some contingency there,

I would really worry, because nobody can predict everything and, in fact, the strength of the large fleets is that they at least advertise that they've got the capacity to sort of self-insure, if you will. One plant has a problem, they've got a fund that they can draw upon to deal with those things that you just can't predict.

But, John, I think at every plant that I know of, I've heard the staff and, we've talked a lot, not just the inspectors, but, we in management, go around and talk to people. You're here -- When you ask the question of what's new, what's different? The first question -- The first answer almost every time is, Boy, are we ever focused on budget now. And, it's not a surprise. That's a -- That's a -- That's an understandable situation.

We'll have an opportunity to talk more throughout the day. In the end, it's how do the plants perform that makes the difference and, that's where we judge whether or not they're spending enough money, or, not spending enough money. It's what does the equipment tell us.

MEMBER ROSEN: Let me not less this stand just the way it is, because I was at Pilgrim in the seventies and, in a position where I watched the

budget process, just like the one they described at Peach Bottom, where individual managers could make recommendations and do things up to, say, $50,000 or $25,000, whatever the inflation adjusted numbers made sense. And, then, you'd recommend above a certain amount. It would be recommended to a committee, which would put it in the future year's budget and add things up by some priority and say, ultimately, a big number to the board of directors, or, otherwise, vice presidents and senior vice presidents to approve.

So, it's not completely new. Let's not leave the impression that just because they've become merchants. The Boston Edisons of the world, back in the seventies, although they only operated one plant, had quite a bit of financial stability, but, they also ran a process very akin to the ones you're hearing about described today.

MR. MILLER: Sure. And, you know, that's absolutely right. It's a changing tone, perhaps, for some plants. Every plant's different. You know, we all know the trouble Millstone got into and Northeast got into by just what you're taking about, you know, an overly aggressive process for challenging the spending of money and the like and, so, it's not as if it's only new to the current regime. But, it clearly

is on a routine basis, touching more of the people. It's touching more of the people, the system engineer and others, who are operating at the plant. So, it's an important issue.

MEMBER ROSEN: But, what is different is that in the old days, if you could say this is an NRC requirement and make it stick, I mean, actually have a letter from the staff, or, a regulation, or, a guide to which you had licensing process committed and, someone could point out that you aren't exactly doing it right and had to make some modifications to come into full compliance, that immediately would be approved because that was rate basable. The justification for that was, it's a regulatory requirement, you've got to click in the box over here. You didn't have to go through any cost benefit. And, the company would then earn its return on that money, once they put it in service. So, that's different. Now, there isn't any of that.

MR. MILLER: And, Steve, this is why, you know, this long-term planning is so important. Thinking about, you know, when they're going to need to, you know, replace, not just safety equipment, but, it's also, you know, the fuel water heaters, you know, the turbine, various large overhauls and replacements,

because it is kind of a zero sum gain and, if they're not planning that effectively, it robs, it takes from the funds that are available to do preventive maintenance on safety equipment and the like. It's a very, very important issue.

But, to sum it up here, I think what we've seen is -- Yes, George.

MEMBER APOSTOLAKIS: When you asked Seabrook whether they had a long-term plan, if they had told you, we have none. What would you have done?

UNIDENTIFIED VOICE: It's not working, by the way.

MR. MILLER: Well, I don't have a requirement to, but, there's a lot that we can do as a regional administrator and, there's a division director and, deputy regional administrator. We have access to the very senior people. In a sense, though, that's kind of an academic question, because everybody has a long-term -- has a long-term -- has a long-term plan and --

MEMBER APOSTOLAKIS: Let me tell you why I'm asking, because this is -- I have a agenda. One of the most difficult questions the fiscal -- is facing now is, whether good indicators, good safety. And, to what extent should the agency interfere with

the monitor of the plants. Were thinking in terms of indicators and, we should stay away from telling management how to do its business. When I hear about that, I say, Okay, I'll go along and, then, you come here and say, I asked them whether they had a long-term plan. I'm trying to reconcile those two. I know that they don't have regulatory in front of them.

But, we are interfering, aren't we? And, I think that's good. And, that's not formalized. You are doing it because you think it's important, I believe. But, there's no rule anywhere that say you have to ask them. Because what may be this is a completely personal opinion, that may be a way out of this safety culture business. Maybe, bring to the attention of the licensee certain things and, then, let them respond, because if you bring it to their attention, they will do something about it. And, as you said, if they don't, there are ways, maybe, motivating them without really saying that this is a violation. That's why I'm raising the question.

MR. MILLER: Yeah. And, I think that as you see us as we talk today, there's no real simple answer that I can give to this question. And, I think if you -- It's a mosaic. It's a whole number of things that, collectively taken together, give us,

first of all, a read on safety culture. And, secondly, provide us the methods to convey what our issues and concerns are. It's a mosaic. It's no one thing.

And, so, in a sense, I'm kind of saying, as you follow through the day, if at the end of the day, you don't have an answer to that question, I will feel like we've, you know, not done a very good job.

MEMBER BONACA: One thing on the same issue. One of the reasons for asking that question is, what decisions are being made, was because I know in terms of this power plants that they purchased, one comment I've heard from some people is that all decisions are being made somewhere else. And, when I hear that, I'm concerned about people not taking responsibilities on the working level for what's happening, because they feel that somebody else is making decisions and, they don't have participation or anything like that. That was the reason why that question was asked at Peach Bottom. And, I'm not saying that there is a trend there, but --

MR. MILLER: I've not seen a case where in the merging of the cultures, there isn't a, Are we against them. They're calling all the shots. They don't really understand the place. I can't think of

a case where that doesn't set in. And, it is partly because there is a new agenda. There is a new vision. There is a new plan and, the plan is a bit tough.

Now, what we're concerned about and what we're looking for is situations where there's no bottom up. And, one of the reasons and, you're going to hear us talk about it, in this region as long as I've been here and, I think, perhaps, before that, we spent a great deal of time in the plant. A lot of time managing in the plants, Ran knows this and other, a lot of time in the plant, not to substitute ourselves for the inspectors, but, to, firsthand, get a feeling for just this kind of thing. And, this means getting around and talking to a cross-section of people, one-on-one, in the shops, in the engineering area, middle-level management, all the way to the top. It's to try to get a feeling and a handle on it.

Now, you're asking a question of, really and, I hear your question, George and it has to do with, how do you -- you don't have a requirement and --

MEMBER APOSTOLAKIS: I hope you understand why I'm asking.

MR. MILLER: Yes, I do.

MEMBER APOSTOLAKIS: We have this problem

and we're trying to understand.

MR. MILLER: And, I think that through the day -- Through the day, we're going to give you a good perspective on this.

MEMBER APOSTOLAKIS: One last question. I'm sure there are other questions that will be asked of managers, in addition to, do you have a long-term plan. This is very valuable because it comes to people here, who have hands-on experience with the regulations. I wonder whether the staff at headquarters has ever tried to capture this knowledge. Have they ever interviewed you as to what you think are important issues and, maybe, cataloging them --

MR. MILLER: Yes, of course. In fact, there are members are here and, I'm sure -- But, really, we are part of a team. And, Randy and Wayne and others can talk about the numerous mechanisms there are for sharing this information, counter-part meetings. We were at a counter-part meeting last week, I believe, in headquarters. We significantly contributed to the -- to the development of the reactor oversight program. In fact, in this region, our inspectors were very much involved in that.

So, clearly, at the senior management meeting, we talk about this and there's an exchange.

The four regional administrators are -- The four regional administrators talking, you know, at a senior management meeting is a sight to behold. I mean, none of us are shy and, so, there's a lot of -- This is another mechanism. We're not shy about, you know, not only talking about the plants, but, talking about what is important in terms of what underlines, what drives performance. What drives performance. And, you know, I recognize this is a very challenging area. I think, again, I beg your indulgence and let us go through this and --

MEMBER APOSTOLAKIS: That'S fine. I'm sorry for interrupting. These are the kinds of questions --

MR. MILLER: Sure.

MEMBER SIEBER: I don't want to delay you, set you off track. Hold the discussion about the state of the industry in Region 1 or elsewhere. The consolidation that's been going on has a direct bearing on safety culture. For example, if you would step back ten years, you'd find a two unit plant would have about 1,200 employees and, virtually, no headquarters functions. Everybody would be at the site, doing whatever it is they do. And, that process of decentralization actually started about 30 years

ago and, that was at least in the plants where I have worked, one of the -- one of the factors that helped us improve performance.

An engineer who was designing a design change in the plant, he'd have actually taken it to the location where it was going to go, rather than sit and read a bunch of drawings and try to install something, you know, in an existing piece of equipment.

So, now, in the effort to cut the budget, 1,200 person plant staff may now be 700 persons, or, 600 persons. And, because of the change in the physical location and, oftentimes, the company by new people from other corporations, you lose that ownership of projects, the ownership of the plant that you had at one time, perhaps, ten years ago. And, so, the question is, can you actually see that in the plants? And, the second part of that question was, if you saw it, what would you do about it? Would you wait until the actual performance of the plant began to decline, or, is there some leading indicator that would say, I'd better talk to somebody now? Or, I better get the licensee's attention now, rather than wait for an event, or, wait until the list of greens and whites is getting --

MR. MILLER: Let me tell you the conversation we just had with the senior executives in the last two weeks. The plant that's going to have significant downsizing, because, really, we talk a lot about positive aspects in this consolidation, they have to bring to bear, significant experience and the like and, good processes. But, the thing that we're watchful for is the effects of cuts. And, the challenge is and, what I told the executive is, we can't sit here. We don't have any rules on how many people you have operate this plant.

First of all, just make sure as you do bench marking and, typically, the sizing of the plant ends up being a lot of bench marking, you try to look at what others are doing and, if you try to benchmark good plants and, you say, they're doing it with this many and, I guess, we should be able to do it with about that many. It's not all that. We look for some amount, as I mentioned earlier. I'm leery, always, if something's topped down. But, some bottom up and, evaluation, in other words, of the functions. We're looking for differences. Are you bench marking somebody in a valid way?

But, the last thing we left with them is, we're looking for you to identify some indicators,

leading indicators, not lagging indicators. Leading indicators that will tell you when you're beginning to get in trouble, so, you can pick up on it and reverse it before it's too late.

Now, from out side, I'll tell you what the leading indicator is. The leading indicator is inspection findings. It's inspection findings. It's down at, how does the licensee respond to that event. And, I don't mean event with a capital E. I mean, event with a small E. And, you'll hear that much today. That's the leading indicator. It's inspection findings.

MEMBER ROSEN: The leading indicator to you.

MR. MILLER: And, the leading indicator for us. The leading indicator for them is, I would say, that inspection findings, as well, their own inspection findings. Their inspection findings of their own -- of their own activities.

MEMBER ROSEN: Corrective action programs.

MR. MILLER: Their corrective action programs.

MEMBER ROSEN: It seems to me, it's not your inspection findings, that's too late, too late for the licensee. By the time you get a finding, you

failed as a licensee. It seems to me that as a licensee, you need to take, as your leading indicator, things that you see that are wrong in the plant, not wait for others to find them for you.

MR. MILLER: Steve, first, you're real precise. You're exactly right. It is not just our inspection findings, just from out side, it's also our observations. It's our observations. Things don't make it that far. And, part of what we're trying to do is get a -- we're trying to gauge how effective the licensee is at finding and fixing their own problems. They've got to set the -- They've got to set their threshold way down from where our findings threshold is. Our observation threshold is very low. But, I mean, our finding threshold is -- it has to be set much lower.

I think they've got to be looking at behaviors. I think they've got to looking at how people are behaving and, maybe, that's the same as looking at how people do work in the field. If you have a rash of occupational safety issues, for example, I think that ought to be an indicator for them.

But, to answer your question, John, we've had these discussions. It's an area of concern to us.

And, perhaps, more than any other area, I think if you look at the various parts of the plant, the area of engineering, is the area that I suppose and, here, I'm speaking personally and, I'm, perhaps, most concerned about is the area where the lead times, good or bad, are long and seeds of problem are sown at the point where, well before they'll show up for good or for bad. And, that's the most costly area in terms of, you know, operating expenses and the like. And, so, we were watchful for that.

So, I mean, this has been a very, you know, interesting time. It's been a challenging time for us in the Region 1, but, an exciting time to watch this all play out here in this region.

MEMBER LEITCH: I think an important insight too, into the corrective action progress is the level at which issues are identified, that are entered into the corrective action program. Many -- At least some licensees, I think, are tracking how many are identified by NRC info, their quality assurance program, versus how many are self-identified by the line organization. And, also, perhaps, how many are self-revealing. So, we have a really healthy safety culture, in my mind, the line organization is identifying the vast majority of the items. And, I

think when -- I think that's -- that kind of analysis of the corrective action program provides some valuable insights into the health of the organization.

MR. MILLER: That's the key, absolutely, it's the key. A site -- An average site these days is reporting at least a couple of thousand problem reports a year.

Brian, how many problem reports were there at Indian Point 2 last year?

MR. HOLIAN: Three thousand --

UNIDENTIFIED SPEAKER: Around 10,000.

MR. MILLER: I think it was 14,000. I think it was 14,000 at Indian Point. And, if you go through, if you're a plant that's going through a recovery, discovery and recovery, it can go up to very large numbers. And, that's the -- that's the -- that's the fertile field that has to be mined to get these kinds of insights. Graham, you're exactly right, looking at that. That's where the data is that they can operate on, I think, to know and get early indication of a negative -- of negative trends.

If I could just --

MEMBER BONACA: One last thing I'd like to mention. In this transition to a more business-like operation that you have. I think one of the important

elements was the ability to do on-line maintenance. I mean, the outages going down to very short time. Would like to have an understanding of what you see. I mean, is it being controlled properly? I mean, is risk information being used to properly manage this? Because, I think it is a very positive development, if it is done correctly. So, you may want to comment on that at some point.

MR. MILLER: Yeah. I'm going to state that for one of the later presentations. But, clearly, that's one of our inspectible areas, is how on-line maintenance, risk -- Are risk insights being used effectively to assure that the plants don't get into problems.

Again, just so you know, as we look at this, we are very cautious in our outlook. One of the other things that has been done to make big dents in backlogs is the concept of a fix-it now team at plants. It's the highly planned work -- You've heard of the 12-week rolling schedule which, Graham, I think you may have invented at Limerick, at least you get a lot of credit for this. And, that's the plan. A lot of work is being done these days by the fix-it now team, which is -- you get an SRO and you get a work planner, an electrical guy and a mechanical guy and

you go up and do work. So, we've got our eye on that.

We saw an event at Calvert Cliffs recently, where a team was doing work and brought a plant down. So, I say this just so you know, we're alert to those situations where they're going to be pushing -- pushing the envelope, if you will, or putting stress on the system through these methods of being more efficient.

The next thing I just want to talk about briefly and, Brian will talk a little bit more about this, is that in Region 1, at times, the public interest is overwhelming and, there's no other word to use than overwhelming. It has accompanied a lot of the plant situations that have developed. But, since 9/11 especially, the industries have been absolutely inundated at times with public concerns and, requests for us to support meetings. Congressional interest at times has been off scale in terms of -- in terms of the Congress coming to the site, looking for briefings, correspondence has been enormous.

There's a chart, it's in your book, to just sort of summarize and give you the numbers. You can see that there are very large number of requests. Congressional requests, we virtually always support, not in all case, but, we always support. This has me,

in one case, for example, going to Vermont Yankee with Congressman Sanders and a large audience, you know, of five or 600 people, just as one example, testifying before Congress on a number of occasions. A great deal of concern, of course, associated with the events of 9/11. It's more than that. I mean, it's just in the part of being in Region 1.

We have had to, much of the time we've done this, really, is part of the program. The concern that I've had over the past several years, especially, is that this activity, which is vital, is that this activity will begin to cut into our safety work. So, we've done a number of things. For example, when the New York Times on the second day following Indian Point 2 failure, ran a front page piece that said that the NRC knew that there was a leak in that steam generator, saw it coming and, did nothing about it. You know when that happens, you better organize yourself, you better do something fast and effective to deal with the onslaught. The onslaught came.

That wasn't true. Steam generators leak a little bit. You know, you can't, from a little bit of leakage, detect when a steam generator's going to fail. But, we had to contend with the perception that

we were sitting there, lively watching, you know, the truck drive right over the edge of the cliff. And, so, what we have done at Indian Point, given the numerous issues that existed at that plant, for example, formed a communications coordination team, have realigned the region. Brought Brian Holian into the picture, having him report to the front office. We've done a lot of things organizationally to try to wall off and deal with this onslaught from the outside, so that inspectors can keep focused as much as possible just on safety work.

About a year -- two years ago, I think it was, we went -- made a pitch in the budget. We needed two FTE to deal with the special attention that we have in this region. Tracy was dedicated full time to helping us manage this, as well as that FTE was used to really fund the efforts of a lot of us. It's a massive thing in this region.

Now, we could spend a long time on this and I don't want to do that. That's not what you're here to do. But, you can't talk about Region 1 and not understand at least the enormity of this.

What you see is a great deal of frustration, as we get the requests -- If we go back to that slide -- the Indian Point case especially,

with a number of counties and town halls that have requested us to support meetings and, we simply have not been able to do it. I've got a letter on my desk right now from Senator Schummer (phonetic) and, one from Congressman Kelly, expressing a bit of disappointment that we didn't support a recent town meeting. So, this is a -- this is a continuous thing for us. We've attempted to be smart about it, to do outreach. This is very important, obviously, because it's not good enough just to do the right thing by safety, but, having the public understand that their -- that their safety's being protected, is an enormous challenge. And, we are at our limits, honestly, on what we can do.

I'm going to pass around --

MEMBER LEITCH: Just so that I understand this chart. Does not supported mean that the meeting was held and there was no NRC present?

MR. MILLER: There was no NRC present, that's correct. And, you can see -- Go ahead.

MS. WALKER: Just one point of clarification. For most of the public meetings, that means we didn't send someone. For things like congressional site visits, not supported means we didn't send senior management. The senior --

congresswoman, anyone who visited a site. Certainly, the senior resident or resident would support. We just didn't count it as management.

MEMBER LEITCH: I understand. Okay. Thank you.

MR. MILLER: This is potentially a bottomless pit, as you can imagine.

I don't have enough copies to go around to everybody. I'm going to pass out several copies of some news clippings and you can share those. Diane Spence (phonetic) is our public affairs officer and, I think she said that the stack of articles over the past several years is probably about this high. I selected just several. And, what this will show are several things.

First of all, a number of the pieces that are written about nuclear power are very factual and very helpful. Helpful in the sense of having the public understand a situation at the plant and what our conclusions are. A number of pieces are alarmist. You can scan it and you can see some of the ones that sort of jump out at you as being alarmist. Sometimes, they're inaccurate. And, when they're inaccurate in an important way, it cuts into our credibility, we have to pick out spots and we will act.

Now, near the back of this package, you'll see one particular article that, in effect, said that Consolidated Edison was discharging to the Hudson River, NRC Millett and, NRC did nothing about it. And, in that instance, with a great deal of my personal time and efforts of a lot of people, we -- we responded, wrote a letter to the editor confronting that, because it was simply not true and it was very harmful to have that kind of piece presented or published. We don't attempt to take all of the pieces that have an alarmist tone to them and counter each one. That's just beyond our capacity to do that. But, we have, you know, picked our spots and have taken on those real harmful articles.

Also, we've attempted outreach. We've attempted to, as much as we've had to say no in many cases, we've attempted to get to elected officials and hold meetings, where people who are truly interested in what you're doing, we hold meetings. And, Brian can talk more about some of the ones at Indian Point, four and five hour meetings that we attempt to lay it all out and answer all questions.

There's an -- There's an element here. If you look at the last two pictures in the back of ads that are running on street corners in New York City

right now related to Indian Point and bringing out the perspective, at least, that it's a weapon ready to be used. And, our capacity or ability to counter the inaccurate and wrong information that underlies that is -- is limited.

So, what I'm laying out for you here is, just giving you a taste of things, this is only a taste, but, it's a big part of what we contend within the region and it has an impact, certainly, on management time and our resources.

MEMBER ROSEN: Do the plants help you? Is there anything countering? It seems to me that this is Indian Point's job to counter this.

MR. MILLER: It's, first of all, the licensee's job to try to counter this. But, in the end, we're the -- we're the servants of the people. We're the third party. We're the -- We are the overseer and, this credibility problem that licensees have. Now, when it comes to factual information, it is their job, not ours. We don't have the capacity to go out and try to, you know, counter a lot of this.

One other thing and, this is important. It's not our job to sell nuclear power and, we're always very conscious of, as we take on inaccurate pieces, we don't appear to be in any way promotional.

That hurts our credibility. It's not what we're out to do. We take great pains to have people understand our only passion is objectivity, calling it like we see it. And, then, from there, of course, we try to convey what our findings are to the public. So, we could talk a long time about Indian Point. Brian will give you some highlights later. But, it's not just Indian Point, it's a number of other sites, as well, where there's a great deal of activity and interest. Any other questions on that?

Let me, last, go to -- I'm going to touch on resources and staffing before I -- I'm not going to go into this in great detail, because Randy Blough and Wayne will cover this and, Jim Wiggins in detail. But, if you go to the chart that's got the -- This is an interesting chart. In the region we see one of our big jobs is the development of staff. We have very little external turnover. Just a few people have left, to go outside the NRC. But, we've been quite successful in having people feed up within the region to senior jobs and to other regions and, very importantly, to headquarters. And, so, what you see on this chart which is a part of budget that's the blue line and, of number of qualified inspectors, that's the red line, you see a significant drop over

the last several years.

The obvious question is, how do you meet the mission when you have such a delta or difference between what's budgeted and what you have in the way of qualified inspectors? And, again, Randy and Wayne will provide more detail on this. But, a lot of it is through the interim certification, or the quick qualification, limited qualification and a number of very significant -- a number of very experienced people we've been fortunate enough to bring onto the staff. There are a number of other coping measures, which I won't go into here, but, this has been a significant challenge for us.

We have gone a significant way. We've had a large amount of over-hiring we've done. I think right now, we're some dozen or so over our ceiling or our budget. But, it also tells a story. You can see the line, the green line which is the staffing line, started to pick up in 2002 and, it went up between 2002 and 2003 and, you'll see that red line lags behind that. Lags behind by a year or two years, which is the amount of time it takes to have somebody become fully certified.

This has been a big challenge for us. But, also, an area, I think, of a large number of

successes.

I want to ask, again, Wayne and Randy and Jim to talk about the program that we have for developing people. We get a mix of entry level, as well as experienced hires. It's a very comprehensive program. A very comprehensive program. And, I'd like -- We'd like to spend a little time with you on that. But, just overall, from my perspective at the beginning, I wanted you to know, this is a significant part of what we do here in the region and we've had some recent challenges.

MEMBER ROSEN: I don't want to overstay my welcome. Maybe, I put a hard question to you. Was that not foreseeable?

MR. MILLER: Not completely.

MEMBER ROSEN: Why?

MR. MILLER: Because we -- Perhaps, in some respects, it was, if we had been more linked to enter a large number of these losses, if you will, were to senior jobs that opened up fairly suddenly in NRR and in headquarters office. It's not --

MEMBER ROSEN: And, some retirements.

MR. MILLER: Yeah. And, some -- to some extent it was retirements. But, the overwhelming part of it were losses to senior positions on the EDO

staff. Senior technical assistants within NRR. A number of senior positions in headquarters. We have always prided ourself in this region and, I have, you know, of being always on the over-staffing side of things. Being over-staffed. We told the staff many times, try to get me in trouble with Jessie Front and with Paul Byrd, who is head of HR, try to get me in trouble. But, this is a result of a fairly sudden, you know, movement at headquarters.

Now, there's always at any one time the budget allows for some number of people being in the training and development process, so, it's not in the -- In a normal year without a lot of attrition, you'll always have some number of people who are not fully qualified and, the program's built to accommodate that.

MR. LARKINS: Do you have something, maybe one of these presentations coming up, which will take a look at what the staffing needs are to fully implement the ROP for Region 1?

MR. MILLER: Absolutely. And, we --

MR. LARKINS: Say, over the last year or two?

MR. MILLER: We have that. Wayne, in fact, I guess had another periodic -- The divisions meet,

they had a retreat, I guess, last week or so and, among other things, is the updating of where are we in terms of the critical skills needed to do the program and, that's procedure by procedure. How many electrical types do we need? How many people do we need?

And, I'll tell you, we've had great successes. I like -- Fred Jackstimmer (phonetic) was the system engineer at TMI, who was responsible for doing head inspections. And, so, you know, when you have somebody like him -- I just use him as an example. You know, he was relatively -- hadn't been here for very long when Davis Besse hit. We had a person on the staff that probably knew as much as anybody in the agency about the practical aspects of doing head inspections. And, so, we are very mindful of hiring people with the right skills and, we've had some success with newer people being able to step in, in fairly short order, to make a difference.

MR. LARKINS: The other thing is, I think, the executive resource board does at least talk about the fact that the regions are competing for headquarters for a number of positions and there should be some built-in mechanisms in the budget to account for that.

MR. MILLER: There is. Increasingly, the agency has seen a need and has actually in the budget, provided slots to the region. Now, I'll tell you, that can only go so far. All the regions, I think, are like us, focused on over-hiring and, we -- I think it's really a combination of the two. No one's ever stopped us here from over-hiring.

MR. LARKINS: What bothers me, I see this a one-way street, though, mainly, it's from the regions to headquarters. And, it seems to me, that there should be some small portion of the staff coming from headquarters coming back to the regions, to get that experience and opportunities in the region.

MR. MILLER: We've had a few come back, as we had senior grades to support that. I'll make myself popular with the staff here and I'll say, that we raised all the grades in the region one step and, then, perhaps, being somewhat facetious here -- It's part of the regional job to develop. Folks who are on the front lines get experience invaluable when it comes to assuming positions of leadership across the agency. And, so, we're proud of that.

Lastly, let me just talk a little bit about inspection oversight philosophy. I mentioned at the beginning, no program by itself is going to get --

going to make you effective, it's how you implement the program and, this is true with self, it's true with the ROP.

In my view, you know, the ROP has brought a number of very positive things to NRC oversight programs, a greater emphasis on risk and objectivity, to the performance indicators and the like, provide a sound foundation for oversight. But, still, the key thing is effective implementation.

And, the first thing that -- the last page -- I think is more important than anything, is having an aggressive mind set. If you don't have that and you don't have, you're going to affect communications. The management doesn't have the inspectors know that they're going to be supported, but, they're expected to have an aggressive mind set and are supported. If there isn't a great deal of senior management involvement, things are not going to work. I don't care what process you're talking about.

In this region, again, you'll hear it a lot, we have always placed an emphasis on significant senior management visits to the sites and, these are visits where we spend a couple of days, a number of us, talking to a cross-section of people. But, also, it gives us an opportunity to meet first-hand with our

inspectors, to hear what their concerns are, a lot of the things that don't formally fit into the program and, make sure that those -- those, very often important, leading issues and concerns are -- are left unaddressed.

I want to take you to a set of slides. There's a set of slides in the package. Tracy, they're in the package, aren't they?

MS. WALKER: Yes.

MR. MILLER: And, for effect, what I've done is, I pulled out a presentation that I made in 1998.

MS. WALKER: They're right after the last slide. They're right after this slide.

MR. MILLER: In 1998, I stood before the -- all of the licensees in this region and the senior managers of all of the licensees in this region and I said, Look, this is what we tell our inspectors to do and, you can keep book on us, this is what we're telling our inspectors to do, this is what we -- And, it starts with on the first page, the first obligation of inspectors is to go find problems.

Now, logically, you can say that the second bullet is the one you'd normally start with. If you're thinking logically you'd say, focus on

what's important and go find problems and communicate effectively. But, I put the first one, go find problems, first, because I think that has to be -- that has to be something that everybody carries with them and practices day in and day out. They're complex -- The organizations are too complex, to not have problems. And, if you don't approach it with that perspective, you'll miss it.

And, I went on to say, if you look at the second -- second page where I elaborated on finding problems and, it goes to the questions you were asking about, how do you get early indication. And, among the various reasons that I talked about was, if you don't pick up on issues when they're small, they will accumulate and become -- become a problem.

The next page, I'd just like to emphasize to you, is the need to, on the part about focusing on important issues, is, we've talked a lot about having a split personality. Being an inspector, you've got to be -- you've got to have a split personality. You've got to be able to dig very, very deep, but, at the same time -- but, periodically, step back and look at, where does this fit? Bring in risk insights and, what does this mean?

The next thing really gets to safety

culture. On the next page, it talks about assessment of licensee self-assessment corrective action programs, that's what we've always talked about in this region. Under the old system of self -- Under the new system is the need to focus on evaluating the effectiveness of licensee corrective action programs. But, there has always been a strong element of self-regulation in this business. We're very limited in our resources. And, so, what I often say to inspectors is, it's not your job to go off and inspect. Really, it's your job to be a part of a team to go out through inspection and figure out how effective licensees are at inspecting and fixing and finding their own problems. So, that as a byproduct of every inspection, we should be getting some insights and clues on the safety culture of the plant. And, safety culture defined as finding problems that are low level and fixing them effectively. It requires licensees to connect -- It requires us to connect the dots.

MEMBER SHACK: Isn't this sort of a split personality, what you're saying here, you know, that you're focusing on the little things, because they'll grow to big things and, yet, we focus on an important problem, some how, you know, the green findings are

still findings. But, some how, because we've colored them green, they really do seem to go away and no one seems to pay a whole lot of attention until that finding starts to get towards the white range?

MR. MILLER: The key word on this page is assessment. It's connecting the dots. It's attempting to assure that we do not have a situation where, if you step back and look at it, you can see a pattern that's developing.

MEMBER SHACK: But, how does an assessment play in -- The action matrix doesn't allow that in a way. I mean, you look at white findings. Green findings can pile up till the cows come home.

MR. MILLER: There's a battle between two bad situations and, I always talk about a narrow winding road with deep ditches on both sides. One ditch on one side is a situation where you take a lot of little things and you mound them up and you make a big deal out of nothing. And, you drive licensee priorities in a direction that's not helpful, it's counter to safety.

And, on the other side, you got the ditch that is -- you got a bunch of things sitting there right before you, they're changing out the filter cartridge every month and, then, it's every three

weeks, then, it's every two weeks. That one thing gives you an insight, that if you connect the dots, you've got a problem. So, we're trying to go on that road, that windy narrow road, trying to stay out of either of those ditches.

This region has been strong on use of cross-cutting issues from the beginning in the ROP. Randy will talk about that.

MEMBER BONACA: Do you provide a form of planning to your perspective on how to read effectiveness of licensee programs? How to go after the inspection to understand in fact whether the licensee is effective in fixing and findings problems. Is there a process you use?

MR. MILLER: There's a great deal of training and counter-part meetings that we have and the like. We all teach other. I learn as much from inspectors as I hope, you know, to teach them. As prescriptive as the program is, there's nothing, if you do it by rote, you know you're going to miss it on some frequency. There's still an enormous amount of good judgment that has to be brought to bear on this. I wish there were simple rules.

MEMBER BONACA: I mean, at times, we go to a licensee and we say, How many problem reports do you

have corrective action program? The answer is, only 500, only 300. As if that was a measure of good performance. It's not, necessarily. It could be a major, very high threshold for identifying commissions. So, you ask about the parameter and you get an answer that, again, could go either way. And, so, I'm just wondering if -- It's a tricky area. There are so --

MR. MILLER: I'm suspicious of anything that is a simple formula. And, what we frequently tell licensees is and, I tell senior managers, because I'm most worried about senior managers missing this point. Don't assume that because you can find a problem report, which I know one plant, the presentation was probably pointing out how they had written a condition report, because the vice president put his car in front when they had a requirement at the plant that they back cars into the parking slots and, that proves that we've got a little threshold. And, I said, that's fine. Don't think for a moment that there aren't problems out there that are buried and that are hidden, that you haven't identified yet. So, you can't say that because you have 3,000 problem reports this year, or, 4,000, that proves you've got an effective program.

It's -- It is still a situation where there has to be a great deal of good judgment brought to bear in applying each program. And, I hope as you go through the day, you'll be able to see through some of the examples, you know, I can make this more concrete for you and a little less abstract. But, it starts with, though, a feeling on the part of inspectors that, you know, that we are looking for them to be focused on finding problems and, those are legitimate and, our team work as we assess what the meaning of these things is, because there's no one inspector, certainly, none of us up here, who, by ourselves, alone, can make all the good judgments that have to be made when you're trying to piece together the eaches, when you've got something that's truly a pattern, as opposed to just a lot of little things that, you know, really don't, in the end, mean a lot.

MEMBER LEITCH: You assess licensee' performance in the ROP by inspection findings and performance indicators, primarily. There are no direct performance indicators on the cross-cutting issues. And, I guess we've been told on a number of occasions that, if there are problems in the cross-cutting areas, that they will eventually reveal themselves in PI's or inspection findings. And, we're

not entirely sure that that's the case and, I guess even if it is the case, it seems to be a very long feedback.

MEMBER ROSEN: Can I say something? I think you're exactly right. If there are problems in cross-cutting areas, they will reveal themselves in plant performance. Absolutely, the problem is that it's too late by the time they did.

MEMBER LEITCH: That's what I'm saying. It's a long feedback.

MEMBER ROSEN: Not that they won't be revealed, they will be revealed. The licensee, the resident staff and the ACRS rep have waited too long.

MR. MILLER: Brian's going to talk about Indian Point and, I think it's useful to talk about Indian Point, because that's -- to me, it's an example of where I think we can be effective. And, I talk about a mosaic. I've talked about a lot of different things, it is a lot of things, including, just to give you an example. What tripped us to Indian Point is an issue, long before the steam generator failure, is standing in the steam pump room and having the team leader of a team inspector and the resident inspector and the senior resident inspector, proceed around the room and talk about equipment problems in that room

and, to tell a story of how in virtually every one of those cases, the licensee had jumped to the quick first plausible explanation of the problem that existed, to have those problems recur, because they weren't -- systematically, they were not getting to the bottom of the problem. It's almost a behavior.

Now, if I had examples that they could point to, no one example was a big one. I recall one being the discharge valves on the off-speed pumps were sticking. And, the rationale was, well, they will -- they'll operate when the pressure from the pump under the seat. Well, eventually, the resident inspector persisted and they disassembled the valve and, in fact, there was significant balling on the stems. You can play this story out many, many times.

I think that there is this aggressive, aggressive approach to running the program, we should be able to pick up on things before they proceed to the point where there is real trouble. It goes back to my main point here is that, no problem with it's self or this program is going to be effective if there isn't an aggressive approach towards implementing it.

We'll talk throughout the day. These are large questions. They're very large questions and, the international community, I know Bill Crevice

(phonetic) and I talked yesterday -- he was in Vienna -- much discussion about safety culture and how you assess safety culture. I was just standing with the thought that, I don't think that inspection procedures that would some how now look at safety culture would be an answer. I think that if you view every inspection we do as providing insight, overall, into the effectiveness of a licensee's corrective action program means safety culture.

MEMBER BONACA: You said you'll comment on Indian Point. It will be interesting to review the Davis Besse event. I mean, there we have indications, they were not safe. I mean, there were no proceed collective data at that point. But, I guess it goes into the action of, so you feel the guy that's available to you in the cost-cutting area, it's sufficient at this stage.

MR. MILLER: I believe it is. But, that's not -- It's not black and white. It's not something you can quantify. There is still judgment involved. And, I think and, I've said this before to folks, in some respect, we may have unwittingly, not wittingly, oversold this program.

UNIDENTIFIED SPEAKER: Which program is that?

MR. MILLER: The ROP. We've oversold it in the sense of it being all objective. It is more objective. Clearly, it's more objective. The indicators don't lie. The part that, perhaps, we've oversold unwittingly is the fact that there's still this element of inspectors in the field making judgments about what they look at, how they connect things. And, the assessments that we do, there's no way to make those rote. And -- But, having said all that, I'm optimistic. I think this program is a good program and works, if it's implemented well.

MEMBER SIEBER: The formal inspection procedures are more extensive than the ones previous to that, which takes, to me in my way of thinking, some of the initiative away from the inspector, because he's got to do more items to fulfill his inspection requirement than he had before. And, so, the idea of having the time and the resources to dig deeper into problems where you can make an evaluation of whether this is just a superficial thing, or, has a root cause that is a cross-cutting issue, or, more importantly, the overall operation of the plant may not be there.

MR. MILLER: That's an important issue and I want to save that for the later presentations and to

ask the inspectors that. I think that's a very important issue.

MEMBER SIEBER: I guess I have another question before we leave this area. We go to every region over a period of years and talk to licensees and, we've been now in all the regions and discussed the ROP. And, I get a little bit of a different flavor, depending on what region we're in, as to how the ROP is managed in that region, even though the results seem fairly consistent from headquarters' standpoint.

I would be interested, since I know the regions talk with one another, interested in knowing whether you see differences from one region to another or not and, if so, are they important to the process and the outcomes?

MR. MILLER: Every region's the same and every region's different in terms of licensees and the environment that it operates in. I'm going to ask Randy and Wayne to address John's question, as you go through your presentation, because there are a number of things that are aimed and worked very hard on trying to get appropriate consistency. Certainly, things are going to be different, but, we've worked very hard with the program office and the other

regions to assure that there's consistency. And, I'll just leave you, perhaps, with this, I've made trips to Jackson, Mississippi, to -- back to my old stomping grounds in Chicago. I used to be the regional administrator there, to Enterra (phonetic) and Exelon, to Dominion in Richmond and, tomorrow, Elise and I are going to Florida Power and Light to bridge -- If anybody can get book on a region, it's this region, because we span all of the other regions and, it's very helpful to compare notes. We get good feedback on what they see in differences.

But, let me not say more on that. TO save that, you know and, have the others address that.

MEMBER SIEBER: Yeah. I bring that up because that was one of the industry complaints regarding the south systems. They believe that they perceive differences from one region to another and plants were rated under that system. And, I would not like to see the same situation occur --

MR. MILLER: Right.

MEMBER SIEBER: -- I guess, every time I can, I ask for some assurance that this doesn't happen.

MR. MILLER: Thank you. That's a -- That's a good question. It's one at the top of our minds.

MEMBER SIEBER: Okay.

MR. MILLER: I've taken a long time here. This introduction of the overview is useful. The agenda would call for a break later, but, I think with the length of this discussion, perhaps, we should take a break now?

MEMBER SIEBER: I think that's fine. According to my watch, which I only paid $9 for, it's 10:08 and, we usually take a 15-minute break, so, why don't we come back at 10:23.

(Whereupon, a recess was taken.)

MR. MILLER: Jim Wiggins is my deputy regional administrator and, he'll make the next presentation.

MR. WIGGINS: Good morning. I think we should be able to catch up on some time. We can move through this relatively quickly.

As Hub said, I'm Jim Wiggins. I'm the deputy regional administrator. I've been in this job since 1999. I got to the agency in 1980, after six years in the Navy. I've held various positions in the region. I was the senior resident at Limrick, when unit one was finishing construction, going through pre-op and start-up initial operations. I've had some division jobs here. The latest would be director of

division reactor safety, before I took the RA position.

During the time in the region, I've had a couple significant assignments at headquarters. I spent six months as a branch chief of materials and chemical engineering branch, which was at the time when the agency was struggling with the Yankee Rowe pressure vessel, pressurized thermal shock issues, so, that was a neat learning activity for me. And, then, I went back as the division director for division engineering for another six months and had a number of steam generator issues. So, that's briefly me.

So, let's go on and talk about the region. We're basically a standard organization. Each of the four regions are fundamentally the same in the organization. I'm not going to spend a lot of time on our organization, but, I will point out some of the, let's just say, differences and, I'll point out the reasons for them.

Our region, currently, our budget's 216 FTE. If you count the number of people we have on board, we're 240 individuals that are in the Region 1 organization. The difference between the two is, as Hub discussed, some over-hire positions. We've hired additional people. But, it's also, we have some part-

time folks. The way the calculation is done, you get more actual people than you have in FTE.

In the front of the book, there's some other information about the organization. There's pictures, you can put some names with the faces and things like that.

Let's first -- As you can see, the organization, it's the standard four divisional operations with reactor projects and reactor safety being in the reactor arena. There's a small part of nuclear materials safety that does the commissioning, that's a reactor area position, also and, it shares with MNSS. Then, there's the administrative. First in the office of regional administrator, I want to make a couple points.

We have, basically, three groups in our front office. There's a technical program staff, which does the allocation and enforcement work. We have a couple special cases for our region. One would be the communications coordination position, that's the role that Tracy Walker fulfills. Hub described his block, the extensive heavy work load we've had on meetings, correspondence, things like that, especially, since 9/11. Most of those activities that you'll see were related to Indian Point, or, security

issues.

We use the communications coordination position to give us help in managing both internal and external communications, includes meetings and correspondence. We also have a writing initiative, since we are engaged in a significant amount of very important correspondence to varied stakeholders, each coming at the issue from a different position. So, we've put a lot of time in trying to improve the writing skills of ourselves and our staff.

The third aspect I want to point out is the Indian Point special project that, as Hub said, Brian Holian is leading that. This is a group that we've -- we've actually stood up twice. We stood it up early on and, then, basically, there was a normalization in the activities and, we stood it up again. It's been in that current situation for the last six months or so. The next slide will give you a little bit more of perspective on what's in there.

You can see, Brian is the director. It has support from public affairs. The support team's block is basically groups from the region, technical groups that provide advice on issues. You have the normal project oversight. There's a security element, since there's a number of security issues around the -

- around the plant. And, some communication issues.

MEMBER ROSEN: Brian will discuss later on why [inaudible].

MR. WIGGINS: Yeah. Well, it really gets formed as a result of the work load at Indian Point and, there was a purpose to centralize the focus on Indian Point. Most importantly, to wall off the people involved in Indian Point, away from the folks that are watching the rest of the plants in the region. What we wanted to do was, make sure we didn't lose focus on the other plants by spending so much senior level attention at Indian Point.

MEMBER ROSEN: There is some [inaudible].

MR. WIGGINS: Yeah. We had done this --

MEMBER ROSEN: Very wise measure. We already know what happens when you get too focused on a plant --

MR. WIGGINS: Right. As Hub indicated before, we've had more than our share of problem plants in this region. And, a number of us that have been in this region for a while, looked through whole bunches of them and we kind of learned some tough lessons through the years. So, we know it's -- Particularly, in a case like Indian Point, where it's attracting the senior most managers in the agency,

Brian, EDO's level, commissioners, chairmen, occasionally. It's very important to keep a strong focus on the rest of the plants.

When you look at this, in one form, it stood up not long after the tube failure indicated. Then, you look at the work load. You look at what actually is driving the organization, cause you don't want to be in this type of an organization longer than you have to. So, when things tended to get more normal, then, we -- we stood it down to a great extent. Brian never lost the role as the lead in it, but, his infrastructure changed. Then, like I said, in the last six months or so, we've had to add more resources to it and flush it out more, because of the issues that are -- that play at the site, that he'll talk about, that was security to begin with and, then, mostly now, emergency preparedness, so, there's a lot of work for us up there.

Okay. Next slide is a reactor projects organization. It's a standard graph for projects. There's seven branches. Five are -- Two of which have some special functions. One branch has what we call our work control analysis center. This is a special group that I'll talk about later, that monitors our reactor oversight program performance. Another role

I wanted to discuss is the emergency response coordination. We run our incident response activities projects here. That includes our incident response center and, includes our activities to train people to be prepared to respond to a significant event.

We've taken advantage of the ability to refurbish our incident response center. We can have a long discussion about where that's been over time. We can -- Yeah. We can arrange for that.

We've recently installed some additional equipment in there that really has markedly, I would think, improved our capabilities of managing incidents. We've used it several times. Most recently in Oyster Creek several weeks ago, where a cable failure led to a loss of electrical. We also used it for a security issue at Seabrook and a charging system issue at Millstone. These were events below the threshold where the agency would have gotten into a full activation. We were in either just normal augmented oversight, or, we were in monitoring mode. It's -- We can -- We'll arrange to show you the facility. We'll get the -- We'll get the equipment started up and see what we've got down there.

The next slide is a division reactor safety, fairly standard arrangement in the regions.

We've broken things down. The operational safety branches, where we do our operator licensing work, plus, inspections. Wayne will discuss that in our region the examiners are inspectors. So, we don't have any pure examiners, they're all dual qualified individuals, who are working toward that dual qualification.

We have three engineering branches. The senior reactor analyst, who you'll get a chance to talk to later are --

MEMBER ROSEN: How many of them do you have?

MR. WIGGINS: Two. Two, formerly, and, several in a -- in a program to develop more skills. And, a set of individuals that are kind of expanding knowledge. Wayne can discuss that more completely, when he's up. He was involved in developing that fall along program.

Okay. Next slide is our materials division. The reason I just brought that up is, I wanted to, as I said before, we do decommissioning, which includes Patterneck, Millstone, Yankee Rowe and Maine Yankee, along with materials facilities that are decommissioning. That's all managed out of our materials division. Not much more to say about that.

And, lastly, is our resource management division, that's a standard arrangement among the -- among the regions.

If there's no more questions, I have a couple of selected topics I just wanted to discuss. I wanted to cover a couple of issues on resources and staffing, some of it redundant to what Hub said. We'll build on some of the points he made. Then, we'll talk about planning and budget performance, or, PBPM planning, budgeting, performance, monitoring activities. Again, we'll talk a little bit about external communications. Give you a sense for allocation and enforcement of work and what the work load is. And, then, we'll talk a little bit about some of the insights we get for our work coordination analysis center.

The next slide is slide 23. We've mentioned before that one of the challenges we face is accommodating losses that we've had. I think it's useful to point out that very, very few people have left the agency out of our region. Most of the -- Most of the losses are just normal kinds of rotations and, a number of people taking positions in headquarters, senior jobs in headquarters.

You had a question earlier about, could it

be anticipated. Well, there's -- You recognize it's a complex matter. It's complicated. There's a lot of dynamics at work in this. I mean, the economy is one thing that I think has a meaningful effect on people's retirement decisions. We have all the standard lists. We know the lists of when people's eligibility dates are for retirement and, the fact of the matter is that we're really focused on that list, as I think every organization has been focusing. But, certain things -- A couple of other things happened to us that we learned a lesson out of this.

And, what really happened that drove a lot of the staffing issues that we've been trying to accommodate is the fact that headquarters simultaneously was dealing with expected retirements. So, there is a number of -- a large number of opportunities available for our staff to go down for senior positions in headquarters. And, there's other engines that cause people to be interested in this, not just for career development, but, you have residents who need to move every so often and they're looking for -- they're looking for new challenging assignments.

You know, we look at this and, obviously, we try to discipline ourselves to not sit here and

shake our fist at people, you know, NRR for taking a lot of our best people, or, EDO's office. We recognize that it's a credit to people we've brought on and how we've developed them and, how we've allowed them to develop, that these folks are marketable commodities in the agency. I think, that's something that we're proud of. Also, we continue to see the headquarters organization are folks that have a connection to Region 1, which, in the end, helps us. We're familiar with them, they know us. It makes it easier to interact.

MEMBER ROSEN: Before you get off that. I know you're not happy with having had happened -- It wasn't what you wanted to happen. You certainly want people to be recognized for the skills they've developed here and move on, that's important regular management, as well. But, what happened in terms of the numbers, the 20 percent decline, where you're playing catch up and I know you didn't want that to happen.

MR. WIGGINS: Right.

MEMBER ROSEN: So, the next question is, how do you anticipate that in the future?

MR. WIGGINS: Yeah. That's the lesson we learned and, the we was not just the four regions,

but, NRR, also, which was the principal place where these folks went. So, the five organizations have all recognized that we can't do this to ourselves again. We found out what was happening in NRR, but, we found out before it actually happened, but, not enough time to do some planning. So, now, we know better and we track that. I'm pretty much tied in with the other deputy regional administrators and the deputy director of NRR. We converse monthly in a planned call, I get some -- we get some of the data that NRR uses to manage their personnel decisions, so we get kind of an insight as to what they're looking for, which tells us a bit about what we might be looking at in the next several months.

MR. MILLER: Steve, also, the senior management meetings hit a lot of topics and there's a competition for time in those meetings, but, I made a strong pitch and was able to make a presentation before the senior managers. This is from Travers (phonetic) on down, on the situation and, I think there is agreement that there needed to be federal linkage among the offices and this business of looking ahead. This is what Jim is saying. So, I want you to know that this has been discussed in detail, at the top level within the agency.

MEMBER ROSEN: We don't want to be too self incredulant towards this -- it isn't what we would want to have happening. And, in this area, you're going to have indicators. The other areas you're talking about earlier on safety culture, it's very hard to have an indicator. But, here's you've got a very clear indicator as just the numbers as to the situation.

MR. MILLER: It's also a competition, too, among people around the agency and, you're getting a lot of people hire competitive and one out and more numbers from the Region 1 group. We're looking at a number of people. I'm looking at one right now, a former senior resident from Oyster Creek and Indian Point, who's sitting right there, as a senior assistant, who's visiting us now in her role as NRR. Very talented people.

I have to say one thing. I have to say, also, though, that the people who are here in the region are here for a reason. The thing we have to offer is the outstanding work that the regions do, being on the front lines, making a difference. There's, I don't think, a better job in this agency. And, I was years in headquarters making policy and, I know the ways, but, none of it rivals, really, the

enormous satisfaction, professional satisfaction that comes from being out inspecting, figuring out whether things really are as they're advertised and making a difference in the field. So, that's the one thing that we have to offer and --

MR. WIGGINS: Yeah. It's -- That's essentially a marketing strategy we have and, that's pretty -- that's been successful for us.

We go to the next slide and you've seen this in house presentation. We worry about the gap, also, between the -- When we're saying qualified staff, that's in the vernacular of the agency. It's really certified. Everyone we hire is qualified to do the job. It's just whether they've got the credentials, whether they got the certs. But, we don't have anyone doing a job here that they're not only qualified professionally to do, but, have sufficient certifications through the formal process to be allowed to do it.

We have been fortunate, as Hub said. We have -- Using the fairly aggressive process where we've committed, even Jack Cirlenjak, the deputy director of division reactor safety, spent a substantial amount of his times directly related to recruiting individuals, both at experienced and entry

level. As a result, we've been able to make up this gap through -- through -- through hiring some people with expertise that's important to us. Hub mentioned the individual that we got, that was a prior -- his prior time was assistant engineer that did reactor pressure vessel and inspections. He was the RCS, assistant engineer. That comes in handy. We have a number of those folks who are familiar with design, electrical, things like that, that we're able to get through the initial certification process relatively expeditiously, bring them onto the playing field in a limited role and, that's how we -- that's how -- one of the ways, the principal way, I think, to make up the difference.

MEMBER SIEBER: There was a article in the Nuclear News, which is an A&S publication, a couple of months ago, that talked about the pool, the expected future pool of nuclear qualified engineers and, that is declining. And, it would seem to me, the agency cannot be as [inaudible] as the licensee can, as far as adjusting pay scales and working conditions.

Does the agency take into account the fact that the replacement group of nuclear engineers, or, nuclear trained people is declining, whereas, the work force in the nuclear industry is clearly aging and,

more people are leaving? I think the licensees and the agency would be faced with some pretty demanding situations in the future, where you'll have to do your own training, you know, to provide sufficient background for people to be qualified and certified for these jobs. Do you have a comment about that, Jim?

MR. WIGGINS: I think the agency generally tries to take that into account. Let me just start at the top and, if you view nuclear engineering narrowly like a person in nuclear engineering degree, actually, when you get right down to it, you need very, very few of them on staff in a region to do what the region has to do. We do very little work that requires detailed knowledge of reactor engineering, or, accident analyses from a calculation point of view. That's all -- If it's done in the agency, it's done in NRR and research.

What we need are good, savvy, common sense, fundamental, brass tacks engineers, nuts and bolts people. You get -- Chemicals fit real well in what we do, chemical engineers, cause they're used to processors and are familiar and trained on that, or, mechanicals. We've got a good track record of taking those folks and giving them enough nuclear knowledge

to make them conversant in the technology and, then, with our on-the-job training programs that are part of the certification process we have, it doesn't take long before we can bring, you know, decent engineers with good common sense and they become quite productive.

Having said that, I think it is fortunate right now and, I'm not sure exactly why this is, but, it's fortunate, we've been able to attract folks with current industry experience. We have people with current or past SRO licenses that are still being attracted to us. A lot has to do with what Hub said. We -- We tell our folks and, it's not a lie, it's what we believe, that when you come to work in a region, you get involved in inspection. You get to do a job that you can make a difference out there. It's where the activity really is. It's where the safety decisions are being made. You get a chance to go there and contribute and contribute to an activity that does make a difference for safety. So, we emphasize that and we've been fairly successful so far. When the economy turns, we'll have to see what that brings. But, right now -- And, salary is an issue. You know, I can think of several cases.

Now, we have a lot of flexibility as

compared to standard non-exempt kind of government agency. We are an exact agency, we use flexibilities that are available to us that way to set salary. This isn't a government agency, as you know. A person has to start at step one of the scale. We try to -- We try to meet salaries to the extent we can. It's not uncommon, though, that, particularly, you get some folks with special skills, like, senior reactor operator license, who's a current shift watch stander. When you look at the net, you're talking thousands of dollars difference in what we can -- what we can offer and what they're making. But, we offer different things in terms of quality of life and the -- and the type of work that we do.

MEMBER ROSEN: To what extent do you use contractors?

MR. WIGGINS: We have used -- had to use contractors in this region to make up for the gap as a coping measure. Wayne will discuss that. One of the differences in the region and, this used to be and I'm not sure it's exactly that these days, is why you need contractors. We've been fortunate in this region. For years, we've had technically savvy engineering people, so, when we had to map up as part of the oversight program to do the safety system

design inspections, we had folks that had a relevant background and experience that they've been doing it for us, they've been doing it on the outside for other licensees. We were, overall, probably in good shape relative to the rest of the regions that way.

So, our use of contractors, mostly, is for a numbers exercise. That's not to say we wouldn't in the future have to go to get a particularly skilled we don't have on board. But, that hasn't -- Would you agree with that, Wayne, that hasn't been the driving problem here. But, it's been mostly use of contractors to flush out, fill out some of our team inspections, so we can take the NRC certified individuals and use them to support the holes in the resident program that we need to fill, either short-term or long-term. That's basically how we've been making this gap. We can show this gap and still tell you, we're doing a hundred percent of the ROP. We're getting it done. We've gotten the program done since it started.

MEMBER ROSEN: Could you clear up for me whether you're talking about a pay disparity between your staff and outside in the industry, or, pay disparity between the regional staffing?

MR. WIGGINS: No. I was referring to what

we're competing for in the jobs that are leaving from the private sector.

MEMBER ROSEN: Okay. Thank you.

MR. MILLER: I was going to say. In the area of design, the agency has traditionally utilize contractors to supplement the staff, bring in people with a great deal of expertise, with solid design experience. I think we all know that that's not something that you develop over night and, I suspect we're still utilizing some contractors in that role, in addition to what Jim talked about, you know, providing general expertise in the area of, you know, pulley systems, or, certain areas, we've always used contractors.

MR. WIGGINS: The point I was trying to make is, in our region, we've been fortunate that we've had more of those folks on our own staff. Some other regions, if you asked the question, you'll get a slightly different answer, that they need the contractors to provide -- In fact, several years ago, a couple of RAD cycles ago, the reason why contractors existed, because in the fundamental beginning of ROP was the decision that there wouldn't be any more contractors in the process. So, that didn't work, initially, but, it was really -- NRR had to provide

for contractors to make up for skill set deficiencies while the other regions acquired or built those skills. We didn't have that problem to the extent that some others had. And, like I said, it's a numbers issue for us.

If you go to slide 25, you see a bit about -- This is a demographics study. The numbers in the columns would be added. For your resident inspections, we have seniors and residents. We have an average time in nuclear industry of eight years before they come to NRC. And, our average for residents in NRC is ten years, which is decent. And, you can see for a selection of regional inspectors, you can see that the numbers are comparable. Like I said, aggressive hiring has allowed us to bring in good people and we've maintained highly qualified experienced staff by focusing on their, Hub likes to all it matriculation, and they come in and we bring them into the organization and we continue to look to their development. We'd like to do more. One of the aspects of being short, the gap, we've also had to curtail some developmental activities for experienced staff, beyond those that are necessary for ROP certification. So, we're kind of over aging a bit of our future. We know we have to pay that eventually,

come around to the point where we'll be able to free some people up to do some developmental activities, like I did in going down to NRR several times.

Okay. The next topic is -- I'm sure you've gotten discussions from the agency on planning, budgeting and performance. It's a general process for planning and monitoring performance the agency uses overall in this region. Let me just focus a bit on what we've done in the monitoring area, which is where we've done most of our work.

We've -- We've established -- Obviously, all the regions and all the program officers have metrics and operating plans that they work to. The regions are standard in terms of what metrics we compare ourselves to. How we've developed those additional metrics which we have in this region -- Each of the regions has a core set of metrics that are comparable among the four regions. And, then, there's additional ones that those regions have developed to use in their own -- for their own management purposes.

We, in fiscal '02, put a team together to improve our metric in our operating plan monitoring processes. We took advantage of having a person that was in the agency's leadership potential program and, had her come out and do as her task assignment a

leadership -- sort of a leadership role on a team that benchmarked not just the regions, but, we benchmarked licensees that we knew had fairly well developed performance monitoring systems and, we wanted to go specifically, to learn the lessons they had, so, we wouldn't have to repeat them.

They put together a different program. We've revised our program significantly and, it's been successful. We have a couple of handouts that you can pass around and take a look at, if you want. This is a -- These are two compliments of the monitoring. The first one is what we call windows are colored metrics and, the second one is more budget related detail. That's how we track ourselves. There's other things going on in terms of branch -- periodic branch self-assessments that occur from monthly to quarterly, depending on which branch that feeds up into this process, also. We feel pretty good with this. It's been effective in allowing us to make some improvements overall in meeting agency expectations. But, it's also given us better insight on how well things are going in the region and where we need to put additional attention.

This is a slide on external communications, which is something Hub mentioned

before. We try to break out things between the Indian Point related matters and the other related activities. You can -- You can see basically the greens at Indian Point. Hub went over that. This is a work load, I'm confident, no one -- none of the regions see. Obviously, Davis Besse's been attracting a lot of attention for our friends in Region 3. But, I think we still win out in terms of the extended relation --

The next slide is correspondence, similarly broken out. You can look at that, at your leisure.

MR. MILLER: If I could, just on that. You know, the region is not typically geared up to deal with this sort of thing and, what we found is that it was very inefficient to have a lot of different people dealing with correspondence and inquiries and the like, so, the branch chief for River Valley, let's say, it's a letter and, then, he has to struggle with writing that letter and, you know, the establishment of Tracy's position has been very, very important, because it allows, you know, some expertise, if you will, and, again, it just has freed up a lot of technical people from the need to deal with this onslaught. A huge positive impact to have

that position established.

MR. WIGGINS: All right. The next topic is allegations and enforcement. This slide gives you a sense of the numbers that we -- that we deal with. You want to focus on the rows that deal with reactors. If you look on 31, there's some points on allegations, itself. There, significant activity continues, how a licensee is dealing with concerns.

One of the things that probably disturbed that experiment was 9/11. Since that point, we've had an explosion in a number of allegations related to security base, you know, if you compare prior to 9/11 to after 9/11. Right now, about 35 percent of the numbers that you saw on that slide were security related.

MEMBER ROSEN: If you took those out, if you replotted those without the security, would you in fact see the performances?

MR. WIGGINS: Actually, that's rarely studied, even with that.

MEMBER ROSEN: Even without the security?

MR. WIGGINS: Yeah.

MEMBER ROSEN: You'd still see --

MR. WIGGINS: Security moves on seven, I guess. I'll have to get the background. We'll have

to take a look. But, it's still -- There's still a fairly consistent number of other things coming in.

MR. MILLER: Dan is our coordinator for allegations and enforcement.

UNIDENTIFIED SPEAKER: I believe the number of HNI issues has increased some, as a result of security, but, I don't think it's a significant increase, if that's your question.

MR. WIGGINS: All right. If you back up security, what would the data show, things getting better or --

UNIDENTIFIED SPEAKER: The data in terms of allegations?

MR. WIGGINS: Yeah.

UNIDENTIFIED SPEAKER: You looked at a hundred and 171 there and, you backed out 35 percent of that, you might see a slight increase. I don't think it's -- We can get that number, if you'd like.

MR. WIGGINS: He's going to work some numbers up and provide it to you later.

MEMBER ROSEN: It's a very -- It's very important that ypou look at -- not improved despite consolidation, or, in place of the consolidation and deregulation.

MR. WIGGINS: I think --

MEMBER ROSEN: What I would want to know, I would want to have any proven, albeit, a small graph. It seems helpful that the ongoing maturation and consolidation would rectify.

MR. WIGGINS: Well, I think as Hub said, you've got to be real careful about looking at one number and trying to draw a conclusion without safety conscious work environment from this number alone. There's a lot of things that affect whether a person raises an allegation or not and, it doesn't necessarily have to be related to -- Well, it could be related to a number of things.

The one that is related to your -- to a test on safety conscious work environment are ones that directly relate to how effective a licensee is at wanting people to find problems and dealing with those problems professionally when they come up. You see that in allegations when you get a -- folks come in and say, well, now, I brought this problem up and, I keep bringing it up and I can't get an answer. Eventually, they get frustrated and they come to us. That's one flavor of it. That suggests one problem with the problem identification system.

Another one, when you look at -- Another type of problem which is even worse is, a person

brings up a problem and, then, the person perceives something happened to him or her because the problem came up; the harassment, intimidation, discrimination, those kind of events. That's another bad indicator of a different sort.

It's kind of hard -- It's certainly an element of it, but, as we said before -- I've got to be hesitant to try to pin it on Warren. A lot of other things happen, too. Restructuring causes consolidation of activities. It causes downsizing. Downsizing puts pressure on people, they worry about their jobs. They get more worried overall for whatever -- We discipline ourselves not to get involved in people's agendas. We just take the issues as they come and try to work them. But, the practical reality of the matter is, when you have that kind of an activity going on, every time we've seen a downsizing, you're going to see some -- some --

MR. MILLER: Yeah. At least --

MR. WIGGINS: -- company allegations.

MR. MILLER: -- in this region. Jim's point's a very good one. It's still a dynamic situation, even though a number of these are transfers, you know, a couple of years in the past. I still see it playing out. I think it's going to be

something we have to watch for a little bit longer before we can draw a conclusion about what effect does 9/11 have, what effect has the consolidation, itself, had. Is there improvement or not? Is it becoming ascentotic (phonetic)? Or, is a discussion about industry performance becoming ascentotic with some level that is perhaps acceptable.

MR. WIGGINS: All right. The next line talks a bit about enforcement. There's another area where we -- From a 50,000 foot view, you think that as you look on that reactor oversight process that now seeks to develop findings that are green or greater, as compared to the prior system, where we had to take issues, determine if there were violations and, then, try to score them under a very level system, you would think, oh, well, the way the process is currently set up, there's going to be less of these so-called isolated enforcement actions. It's a very level three and it involves civil penalty cases, things like that. That's all true. Except, one of the things you'll hear later on in the discussion, is, the ROP brings you a certain amount of work to develop, to identify and characterize the findings by color. It turns out, it's not as simple as one might think, or, how it might have been an initially envisioned.

So, the work in enforcement has essentially been a transference from having people discussing severity levels and sitting at enforcement conferences. We don't do that any more. We don't have nearly the number of conferences any longer, that discuss the issues. But, when you look internally at that time, we're still spending a lot of time with, among ourselves, with our headquarters counterparts trying to settle on, what's the performance issue and, what color it is. So, there's still a good amount of work going on in that regard. And, you'll hear more about that when folks later in presentations talk about the significant determination process, some of the struggles that we have and the challenges.

Okay. Getting near the end here.

MEMBER SIEBER: Could you explain what you mean on the previous line by the term, wrong doing?

MR. WIGGINS: Yeah. Wrong doing --

MEMBER SIEBER: Intentional?

MR. WIGGINS: Yeah. I'll give you the dictionary definition, wrong doing is either deliberate acts or acts done by careless disregard and, don't ask me what careless disregard is, that's why we have a lawyer on staff and, even he has trouble figuring that out. It's something that I've never --

It's essentially something that you should have known. By your position, you probably -- you can make a case that you should have known a regulation applied and, you didn't take the time to go check it out, that it did apply and, you ended up violating it. That's essentially careless disregard. But, it's not even near that clear. But, most of the cases we're looking at are deliberate cases, that are wrong doing. H&I is a special form of wrong doing.

MEMBER ROSEN: That's in the reactor area?

MR. WIGGINS: Yeah. But, we don't see too much of that any more.

MEMBER ROSEN: Any what?

MR. WIGGINS: We have many more materials licensees and much more activity going on in there. It's much more frequent than we have the kind of -- those kind of issues we're trying -- We still have a good inquiry of cases that our investigators are looking at. A lot of those are H&I related matters that they're involved in, which I said is a kind of a subset or a special form of wrong doing type case.

MS. WALKER: Another thing that that includes is also fitness for duty cases.

MR. WIGGINS: Okay. We talked about the -- I mentioned the WCAC, our work coordination analysis

center. I'll show you -- This is one of the charts that Debbie Kack (phonetic) produces. At the very beginning of the oversight program when we were coming, actually, getting ready to do the pilot, it's that far back. It was clear to all of us that we needed to substantially upgrade our processes for following where we were and assessing where we were against the program. One of the principal differences, to me, between the prior program and the ROP is, this ROP has a lot more eaches in it than the prior program. The prior program generally, were centered in areas, an inspector, even the program documentation said, the inspector could decide when he or she was done, could kind of decide whether to follow procedure or not in terms of what to look at.

This ROP's got much more mechanics to it, to make it consistent, inscrutable, predictable and all the qualities that we wanted to have in the ROP. In our region, it was important we knew that you can call it contact time, or, somebody said, a lot of it is just being there, for an inspector, being present, watching. So, it was important for us to know where we were in terms of program completion and know where we were in terms of how much actual inspection and inspection-like effort we were -- we were applying,

so, we wouldn't get seduced -- that's my word -- seduced by the mechanics of this program.

You can lose the bubble in the ROP if you focus too much on the mechanics and spend all your time focusing on the mechanics, it will take that time if you let it. You won't spend your time trying to assess licensee performance. So, we needed a mechanism that we can look at where we work and track and tell us whether we're on target or not, in terms of program completion, without having too many people worrying about it and let them worry about what we pay inspectors to worry about what's going on in the field and being able to tell us a story about a performance on a licensee.

So, we put this group together. Randy, it works for him in DRP. He's taken a major role in developing this.

MEMBER SIEBER: How can you tell when an inspector is actually doing his job, or her job, proper?

MR. WIGGINS: I wish it were that easy. You have to -- You have to apply a whole spectrum of activities. You -- You don't measure -- Although, you look at what findings the individual is coming up with. That's not all, because if you look for

findings in a highly performing licensee, they way we define findings, that's going to be difficult. Hub mentioned, we still -- our folks still have observations, they're still valuable things that they come up with.

We have regular contact between -- between the inspectors and their front line supervisors, even the residents and, that's the -- the residents versus region based, there's different challenges. The region based, you don't -- you don't see them for a week or so at a time, as they're off in the field. Or, the resident, they're currently away and, you have, you know, challenges of your communications mechanisms to keep close with those folks. But, we expect our inspectors to communicate with their branch chief frequently and, that's what happens.

The agency has expectations for management business to the site, for inspector oversight. The branch chiefs are -- the project branch chiefs are periodically at each facility, once a quarter. The division directors up in Iowa make trips to go to the facility to help discuss management business in a context of assessing licensees. There's also an element of talking to our own people and getting a sense of what they're doing. So, you apply varying

techniques to try to measure it.

MR. MILLER; I think best -- In addition to what Jim is saying, I think what Randy and Wayne are going to talk about and, of course, there are all facets, taking about one way or another, provides insight on this very thing you're asking about. We worry about this all the time. Are we -- Are we finding the things that we should be finding?

MEMBER SIEBER: Yeah. I worry about it, too. And, I guess that after 35 years in the business, I've seen very aggressive inspectors and not so aggressive inspectors. And, at the same facility, there are individual differences. And, I think the effectiveness of the new program, relies on the front line resident inspector for the most part. And, so, that becomes an important issue in my mind. And, I guess as we get into this later on, if there are metrics that you use that are objective, as opposed to the subjective visit, a couple of days working through the inspectors routine and his files. That gives you some information that is it objective.

MR. WIGGINS: Well, we can come up -- There are some objective measures in that package, but, they don't measure what you asked. They give you an inference. They raise a question that you might

answer. And, you'll see in there, we're tracking findings. We're tracking findings. We've got to be real careful when we do, we recognize it. We're -- We're not tracking findings on the idea that if you have a lot of findings, it's good and, if you have few findings, it's bad, necessarily. There's all kinds of problems that that brings. First, it may not be accurate. It doesn't -- It doesn't, on its face, take into account what the licensee is up to. There's several other issues that, you know, that -- problems that that could cause. But, it does cause you to raise a question.

If we see some difference in findings or observations, what we're seeing in terms of findings and observations doesn't match the discussions we had about a particular plant in either our mid-cycle, or, end of cycle, or, day-to-day discussions, then, you know, once a month, we meet on those metrics and the statistics, we raise a question and we try to get an answer. We try to challenge ourself to figure out the answer.

MR. MILLER: There's daily contact between the inspectors in the field and, the critical person in the whole mix here, that's the branch chief in the region.

MR. WIGGINS: Okay.

MEMBER SIEBER: Do you use your region based inspectors in any way to check on the effectiveness of the licensee based inspectors?

MR. WIGGINS: Not -- Not -- I won't say per se, but, it's obvious that if a region based team comes back with some issues we might understand why were we so far -- why were we -- why didn't we find this earlier. But, mostly -- I mean, that's what we're looking for is the region based inspectors and the residents are complimentary functions. They work together well. We inspect them, work together well. We have fairly regular expectations for how they communicate, how they work together in this region. It isn't a process of, you know, a region based are spying or anything like that, or, measuring performance of the residents.

But, like any organization, if something happens, an event occurs, or, we find a problem and we kind of sense that, gee, we should have found this earlier, we'll do a lessons learned, to try to see what learnings there are for us, you know, and, let the chips fall where they may at that point.

MEMBER SIEBER: Thank you.

MR. WIGGINS: I want to just point out --

MEMBER LEITCH: Can you explain what BI and --

MR. WIGGINS: Yeah. That's where I was going.

MEMBER LEITCH: Okay.

MR. WIGGINS: We just pulled a chart out of something that's in the book. BI is baseline inspection. I wanted to talk about the stack on the far left, which is baseline inspection and, the stack in the middle which says BIP and BID, that's preparation for inspection and, inspection documentation. And, then, you can take a look at the stack bar at the far right. The loose translation, it's total program effort.

Now, each stack bar pairs, the left side is what we call the program or the budget, that's what the -- that's what this year's activity is supposed to be. And, the right side, the darker one is the actuals. So, we look at this monthly and we want to make sure that we're getting adequate coverage on baseline inspection. This is one of the tools that we use to make sure that's the case. We want to keep a handle on our total effort to see why -- you know, whether we're doing -- whether we're near the budget on that. And, if we're over it, what's driving it.

But, the thing that we really focus on these days and it's especially important given the challenges that we've discussed in staffing, is the prep and doc, the preparation and documentation.

Take a look at the next slide, it's kind of interesting analysis that you can see. The top line is the number of qualified staff and, the bottom line is what our percent of preparation only. We separated preparation from the -- from the prep and doc number. If you take a look at the shape of the line, you can see that the slopes are different and, that kind of worries us.

Now, what makes it a little bit difficult is, obviously, we've been doing the ROP now for a while and, as you do the ROP you learn how to do it more. Particularly, when you talk about residents, it gets more repetitive. They're now through the third or fourth time, they're going through the year. So, obviously, there's less preparation time for them in not having to learn some major function of the system, or, say, flooding protection. They now have to become -- They invested the time already to learn flooding protection for regions of the facility. Now, all they need to do is, on the going forward years, is to -- is to conduct inspections, make sure licensee's doing

what he needs to do to provide for flooding protection.

So, there's certain efficiency you're going to gain just by familiarity with the program. But, the thing that worries us is, will we -- are we -- you know, when are we cutting back on preparation because we just run out of time. And, that's -- that's what we worry about, probably. Out of this current program, the ROP, if you look at it from a resource point of view, the biggest struggle and the biggest thing we worry about is making -- is, are we getting an adequate amount of preparation, cause without preparation, this program's effectiveness is going to -- going to be -- going to take a big hit.

The ROP, it is kind of detailed and, remember, I said it's the ROP mechanics. It's a program that you can spend a lot of time just making sure you do all the eaches. But, if you don't get the prepare correctly, then, your effectiveness of doing a particular inspection is going to go down and, your opportunity to find some problems is going to go with it. And, that's a -- that's a problem that we worry about constantly here and keep careful track of this and keep -- keep -- We make sure through all the mechanisms we have, counterpart meetings, daily

discussions, whatever, that it's a still consistent expectation and that our staff gets adequate preparation time to do these inspections in a reasonably effective way.

We'd like to see any differences in the curves be caused solely by efficiencies gained by just getting more familiar with the process and learning how to do it better and faster.

MR. LARKINS: The ROP in terms of the resources, allow you flexibility, if you got, say, more than one or two problem plants? I mean in the plants -- You don't seem to have the same level of flexibility as you did at one time, to move qualified people to handle problem plants?

MR. WIGGINS: That's true. That's true. Because the ROP is much tighter in terms of explicit expectations at what has to get done at each plant. Now, I compare this to -- I've been doing this since 1980. Randy and Jack, I don't know how many programs we've seen. And, I'll give you mine. This is the tightest program I've seen in terms of what you're given in terms of -- in FTE to do it, as compared to what it takes to get it done. So, you're substantially more challenged, if you -- you know, to handle these unexpected emergent things. Now, we've

been successful thus far.

MR. LARKINS: When you reach the point, do you have a clear indication of when you're at that cutoff point, when you can no longer --

MR. WIGGINS: We'll know it. We'll know --

MR. MILLER: It's immediately felt. Now, the agency cannot predict where the problem -- I'll use power plants loosely here -- are going to show up. So, if you look at the agency budget structure, all the regions at the baseline level in terms of plant support or, I guess -- what it is -- plant special inspections, there's a certain amount that even among the agents, that in effect becomes a pool, cause some of the regions are going to have more challenge than others at any one time. There's an expectation that the regions will share resources as necessary to deal with a Davis Besse, to deal with an Indian Point. And, the record is replete with that.

The other thing in this region, honestly and, let's be frank about it, the budgeting has been favorable to us with respect to the number of sites. As consolidations occur, we're still operating with a budget model that was, you know, based upon, you know, a system where there were -- Indian Point 2 and Indian Point 3, for example, were two separate sites. If it

weren't for that fact, I don't think we would have been able to make it over the past several years, honestly. We have utilized that situation.

But, I think that's kind of a case that's special to Region 1, but, longer, bigger picture, I think there's a recognition that the regions and NRR, I should say, has to provide resources as issues emerge that could not be specifically anticipated in a budget that's prepared three years before the time that you --

MR. WIGGINS: The budget for the activities that you're talking about, these plants to the right side of the action matrix, are more or less done nationally. It's more of a national expectation, how many plants at one time would be in the multiple or repetitive degrading cornerstones plant, for instance, let's say. And, the NRR and the regions have recognized that we under predicted, nationally, how many of those plants would exist. So, there's budget corrections. And, NRR has been good. I'm not just saying it cause Laura's here. They've given all the regions plenty of help, us included.

We have -- We have one of the advantages of having folks that were in the region that went down to NRR as qualified inspectors, they come back to us

occasionally to do some tours as backing up for resident positions where the position's not filled and need them to get that done. So, there's been a recognition, there's a budget correction that's been going in. It's certainly in this budget cycle, we'll see where it comes out. It recognizes that we need to put more resources in this account that funds these -- these more difficult to handle plant situations.

MR. LARKINS: I was just wondering if someone is really forecasting well, because at one time when I was in NRR, we had a special inspection branch which provide the resources when needed, sort of like a buffer. A more prescriptive program, I'm wondering how well prepared we are to handle emergent issues. I mean, everybody's getting tighter and tighter.

MR. WIGGINS: My answer is, we're learning. My recollection is, the agency in its budget calculation early on assumed you'd have one plant and multiple degrading cornerstone in the country. That's not true. So, we've had to make up for that. There's measures that had to be put in place to make up for it. A lot of it is NRR providing folks back out to the regions to plug some holes in the inspection program, talk about contractors and how we use them,

make up for differences in numbers. We've had some of that happen. And, Wayne and Randy will talk about some other coping measures that we're using.

MR. LARKINS: One thing this committee has commented on, the license renewal. And, a lot of plants now are -- I'll get the exact number. But, at some point, there's going to be an inspection, an inspection of these plants and I think it was highlighted to the commission in the last ACRS meeting, you know, are we forecasting, looking accurately at what we need to do that.

MR. WIGGINS: Yeah. Wayne might be able to comment more -- more specifically on it. But, we know what the inspection work load is for license renewal. There's three team inspections that we have to do per facility and, that's in the pre-renewal period. So, I think we have a decent handle on that, between DRS and Wayne's folks and the Debbie Katt function and, Randy's in the DRP shop. We pretty much have a -- have a handle on that right now.

Now, the numbers of license renewals are changing. That's a big budget decision right now, you know, do we take on all comers, do we -- do we cap the review at ten, do we cap the review at 12? There's a whole bunch of decisions going on in this budget

cycle. But, once those decisions are made, we pretty much know what the inspection obligation is and, you can build that in to your, you know -- that's the base of what you have to do in the region. So, we haven't had a problem thus far.

MEMBER LEITCH: Jim, our concern, though, was not so much as inspections that you have to do to support license renewal, but, those future inspections to confirm that the licensee has implemented the programs. In other words, our concern is not now, but, perhaps, ten years from now, as we enter the period of extended operations of these plants, there's a very significant, up our way, of inspection activities that are in front of us and, we want to be sure folks re cognizant of that and, I think they are.

MR. WIGGINS: I think they are. It's worthwhile to worry about it. I don't know that it's a lot of specific thinking right now on, you know, how much, or, what it will look like, or -- You know, fundamentally, I'm sure it will come down to whatever the reactor inspection program is when this happens, since we change programs every five years or so. Whatever the program is, you know, one of the considerations I would hope when you develop that fall along program is, how do you accommodate these renewal

plants.

I mean, one of the bases for license renewal is, there's not much difference the day after the renewed license is effective than it was the day before. So, you know, folks have to be doing the same things. So, our program ought to be sensitive to the, you know, what it's sensitive the day before, it should be okay the day after. That's kind of a -- Maybe, that's a pipe dream.

MR. LARKINS: That's an over simplification.

MR. WIGGINS: Yeah. It's an over simplification.

MEMBER ROSEN: There are a lot of things licensees are permitted to do before they enter the license renewal period. And, that is a burden for the regions, because they will do them or not do them.

MR. WIGGINS: Right.

MEMBER ROSEN: And, when they did them, did they do them well and in the context of the license renewal. That's probably what Graham's referring to.

MR. WIGGINS: Yeah.

MEMBER ROSEN: I'm a little uncomfortable with the idea that at least some preliminary thinking, we get into the planning and budgeting cycle for that,

because, clearly, if you're going to get into that period and have not dealt with it in the planning and budgeting cycle, you're in trouble already.

MR. BLOUGH: The way I understand the status now is, that headquarters is working on what those just-in-time inspections will be and, then, from that, we'll know what the magnitude of them is and, there's a memo working to the process. So, it is a byway, but, we don't -- we don't know the size of it and, it could be larger than --

MEMBER ROSEN: If it isn't, then, you're okay.

MEMBER BONACA: It's actually becoming even more challenging now, because the standardized process that is in place that licensees are going to rely on this approach. And, the way the reviews are being done right now for the approval is that for whatever the plant states, they are consistent with the report, the staff does not perform any inspection now. They simply say that, you know, are the inspections proceeding, entering into license renewal, then, we will inspect them, verify that they're consistent with us. So, that's putting off to the future what they used to do now. So, there's really quite a work load. I think you have to look at it.

MEMBER ROSEN: The subcommittees or this committee labor 30 percent of our time on those things. When you get into pre-consulting from us and a lot of -- a lot of commitments are being made on their behalf.

MR. MILLER: This meeting is being transcribed and, so, there will be others, who will be in a position to focus on that and, we'll know of your comments. We appreciate that perspective, though, because you can't forget the inspection piece of this, is what you're telling us.

MEMBER SIEBER: One of the problems I think you'll find is that, you know, a lot of the aging management programs are covered by all, but, some are not and, some are unique to the specific site. The licensees today are consistent with what they were many years ago, they will tell you, I'm not ready yet and, I don't have to be until such and such a date. Then, you can come and inspect me. So, all this is going to come at a -- at a -- probably your worst opportune time. And, it's going to require, since these are much needed programs toward the bulk of the program it's going to require individual analysis to be able to inspect them. And, I suspect that's what's going to happen. And, even though this is the tail

end of the license renewal process, it seems to me, the thing that's driving the question of how many a year are we going to do, besides the fact that in three months, wants to get the advantage of lower write-down costs as quickly as they can. I think the problem in the NRR budget manager time and staff review time, is driving it, because there is a great amount of work that goes into the writing of the SCR at NRR. So, that's -- That's where today's FTE crunch is. But, that is going to drive the inspection requirement five years, ten years from now. And, by then, you aren't going to have any choice.

MR. MILLER: We hear this concern and, I'm glad you're raising it. I believe that headquarters is aware of this. It sounds like you've been making this issue through the ACRS meetings on license renewal and, it's a timely thing to be raising. There's a great deal of questioning and concern, actually, being raised by industry about whether or not there's enough agency resources being devoted to this. And, what you're saying is, don't just look at the front end, look at the inspection and recognize that it will all come due at the same time. I understand the concern.

MEMBER ROSEN: When it comes due, you'll

have to have procedures that are different than you have now for inspection and, people trained somewhat different than they are now.

MEMBER SIEBER: We think we're making the point and I'm nervous enough about it that I try to make it every day that I'm engaged in this business.

MR. WIGGINS: I guess I should have said, I don't know enough about it to really comment completely. But, I'll add another concern. We actually worry also about what the inspection looks like and how much of it is inspection versus some type of a licensing decision in the field. We've had some experience with that, that isn't the greatest in the world. I think if you look -- In my opinion, if you look at what we did overall with motor operated valves, I think in the end we had a good program. But, it didn't take us ten years to finish it -- I think the way we did it, we evolved -- we evolved how we approached the issues. And, in effect, we were making licensing decisions through the inspection process, which has not been the most efficient or effective way of doing it. It's difficult to maintain consistency and, it puts a different burden on the folks that are doing it as an inspection versus what we typically do as an inspector. Your points are well

taken. I guess I'll have to get much smarter on the issue.

That completes what I was presenting.

MR. MILLER: That slide is, if you want to show the last one, this is source of great pride for us. It shows that even this staffing challenge, clip the resources, they're in the field, it starts and ends there. But, the previous slide, the one that showed the prep time is the slide that I used at the senior management meeting as kind of an attention getter. That this is easy to track. The thing you're really worried about is the quality. And, we have to give our people the time to prepare. So, we throw that out just to let you know, this is a challenge. It's on our radar screen. And, we've got an obsession with, you know, finding ways to, you know, assure that there's quality in inspection and, that we're monitoring it closely.

MEMBER ROSEN: Help me with the acronym, DIE.

MR. BLOUGH: Direct inspection effort. That's essentially inspection hours.

MR. MILLER: The time you're actually doing the inspection.

MR. BLOUGH: Doing the inspection.

MEMBER SIEBER: Let me ask just a couple general questions that would require an opinion or an answer and, I guess everyone will have a different point. But, do you believe that the ROP is an effective tool for regulation of performance and the safety of the fleet of reactors, they way it's applied today?

MR. MILLER: Yes. And, in my talk, I mentioned that there -- it has to be applied -- the best word I can use is aggressively. And, I think that's the question you have when you -- that's the question you have for the whole day here. That's a good question. And, I hope that as the day goes on as you hear from others, they'll offer you their own individual perspectives on this. But -- Maybe I should go last, not first. But, I think, yes, but, no program by itself does the job. It's how it's applied.

MR. WIGGINS: I would give it a yes thus far. I'll talk about this region. My opinion in this region is, we haven't needed to deviate from the ROP to deal with any performance issue. That's kind of a backwards measurement. But, one of the things you have to look at is, you know, did you -- when you looked at the issue that you were dealing with and, a

lot of us have experienced dealing with performance issues and, you decide -- you see what the ROP tells you to do with it. It hasn't been wrong. We've been able to implement the program and attack the issues that we thought needed to be attacked. So, thus far, you know.

MR. MILLER: We've had one deviation that Brian will talk about, Indian Point and it's not a major deviation and it has to do with the current status that come out of this back end of this action matrix. It goes from multiple degrading cornerstones and out. So, there has been that deviation. But -- In making my comment, do I sit here, or, do I not lose sleep at night? I'd lose a lot of sleep at night. But, I would be doing that if it were the old program, or, the new program, or, some other program. And, most of the people here, I think, lose sleep along with me.

MEMBER SIEBER: If you could change one thing -- Let me rephrase that. If you were forced to change one thing in the ROP to make it better, what would that be? You may want to think about that and tell us after.

MR. MILLER: It's a good set up for the next couple of talks.

MEMBER SIEBER: Okay.

MR. MILLER: We were, I think somewhat -- planning for a working lunch without an agenda, because we knew that this would have this kind of -- take this kind of course, though we've had presentations and a lot of good discussion, hopefully, helpful to you. At this point, the plan would be to have Randy begin his presentation and, I'll leave it up to you, really, when you want to -- you think it would be a good break point for lunch. I think if we just look at the agenda and help me out here on the plan --

MS. WALKER: Lunch is ready. It's 11:45.

MR. MILLER: We can do it now, or we can get partly into it. Or, we can take a break and then start --

MEMBER SIEBER: It sounds like, if it's ready, now is a pretty good time. And, a working lunch is not a bad idea.

MR. MILLER: So, if we can take a break and, then, have Randy start to make a presentation after some period of time.

MEMBER SIEBER: All right. Fine. What time would you suggest we start?

MR. MILLER: Well, do you want to take 15

minutes to kind of gather up lunch and, then, he can start his presentation at that time?

MEMBER SIEBER: I think that would be fine.

(Whereupon, a recess was taken.)

MR. BLOUGH: Before that, I was a Naval officer for six years. With NRC all my time has been in reactors, except for two years in '97 and '98, where I was in charge of the region One internal Safetty Division. Otherwise, I've had resident and senior resident inspector section chief and most of my time in reactor projects in the ROP.

This afternoon, the rest of the presenters will tell you everything that I'll forget to tell you and, if we don't, we'll blame each other. Actually, my part is to talk about the program and, then, to give you some assessment results and, Wayne will talk about the inspections and inspection results, as well as a little bit on STP.

I've got about 20 slides here. The first slide just shows simple one, flow chart of the ROP. We use this during our annual assessment meetings, just to explain the concept and, it show the concept is very simple. The details are very intricate and, that's -- the kind of point of this is, we've been very much involved in the ROP since the development

stage. It's still evolving and Region 1 is very much involved in those requirements.

I believe the ROP is sound and, we've done a good job in Region 1 in supporting the ROP and, also, helping our staff work through all the issues that they had to work through to understand the ROP. And, I think now we have a good number of compliance to the staff. And, one of the things that contributes to that, in my view, is the fact that there was a lot of concern early on about how constraining the ROP would be. We all had some misconceptions early on about how constraining it would be and, it's really not as constraining, perhaps, as many thought when we were just discussing its concept and not actually involved in the implementation.

The cross-cutting areas, I think, are vitally important and, it's important that throughout our efforts we're assessing licensing performance in our own oversight efforts and, that we're looking for what the comments are on trying to discern the meaning from the -- I'm still on the previous slide.

MS. WALKER: Okay. Sorry about that.

MR. BLOUGH: Trying to discern the meaning from the information that we're getting. I already

mentioned that we've been heavily involved -- Is there a slide --

MS. WALKER: What's the subject?

MR. BLOUGH: Simple concept, intricate implementation. Okay. Actually, I was speaking from a slide that didn't get into the book.

To summarize what I had said was, that the cross-cutting areas are important. It's been important for regional folks to be involved in the development and evolution of the process and, then, just comment from that, I would say that it's been particularly important for Region 1 to be very involved in the ROP because of the Indian Point case and, here's a case where there was no precedent within the ROP for a plant whose issues were not necessarily episodic, but, they were chronic in developing over a long period of time. And, therefore, the recovery required -- broad based recovery -- after it proceeded for a long period of time.

And, the first -- the first iteration of our assessment process had actually envisioned a plant whose recovery was probably more -- more narrowly -- It didn't need to be as broadly focused and was accomplished more quickly than Indian Point. So, we had to be very much involved in developing the ROP as

it applies to the plant in that sort of situation.

Now, I think we're back onto the slides here. This slide, I just want to talk about our approach to inspections and a little bit of philosophy. You've seen all these slides before in Hub's presentation. But, this is what we tell ourselves and what the dialogue is around here about the philosophy. In order to have value for safety, we need to do those things and, they're centered around finding problems while looking in important areas and, having found a problem, put that problem into safety perspective and communicate effectively.

MEMBER ROSEN: I know you mean finding problems that the licensee doesn't already know about, because in an earlier spot you said you didn't want to find any corrective action --

MR. BLOUGH: Absolutely. Absolutely. And, it runs the gamut. But, some element of the problem that a licensee isn't aware of. But, it may be a problem that they knew of, but, the problem that we point out is that they're not dealing with it properly, or, they missed relevant considerations.

MEMBER ROSEN: Or, they misjudged the problem.

MR. BLOUGH: Right. Again, the most

valuable ones are the ones where the inspector completely comes upon an issue that's a problem that the licensee is unaware of.

Communicate effectively has always been important for us. And, under the ROP, we're actually writing less detail, you know that, the inspection report, itself and the assessment documents are not like they were in the south era, but, nonetheless, the written -- a written word is important and it's watched closely. And, verbal communication is also very important. And, in fact, the program endorses a level of verbal communication on those issues and things -- well, actually below the threshold that the inspection reports and the assessment reports and, we take that responsibility very seriously. In fact, consider it a matter of professional ethics to communicate with the licensee, because we don't operate the plants, they do. And, we should not be sitting here with information that we think would be useful to them in any way.

MEMBER ROSEN: If I heard one criticism of the process from the licensee's side it's that inspection reports now are not -- don't have the richness that they used to in terms of things the licensee management and senior management need to know

about to get under way fixing some sort of underlying issues. That the inspection reports are now somewhat more sterile in that sense.

So, the thing you're talking about which I think is the professionalism of communicating effectively below the threshold of what's in the report. I can't over emphasize that, in terms of its importance to the licensee.

MR. BLOUGH: We agree, that's important. We also recognize that we carry now the responsibility of trying to test whether that information is being transferred within the licensee information, because what we're freed up from under the ROP is writing at grade level, because there are some issues that the inspector will find that require an extraordinary amount of context when you put it into writing, into a written document that everyone can see. And, it will be taken out of context, or, even exaggerated if we don't go to pains to get it in proper context. We're freed up from some of that writing and we carry an extra responsibility with it.

Of course, the other side of that is, there should be only one regulatory process. So, we should not be expecting or requiring licensee action when we tell them issues verbally, we should expect

them to take the information and consider it and, we'll continue to conduct our inspections and see where it goes. And, if we have issues below the threshold even in documentation and we discuss it with the licensee, at that point, we are at a level where, truly, you might expect it before something significant happens, the issue would progress at least to the point of green findings, or a cross-cutting issue that would get in the assessment report before you have a serious problem.

MR. MILLER: In this area, which has no real clear, you know, detailed guidelines, it falls below the level of what prior procedure gets documented. Again, I think we're talking team. I mentioned that a number of times this morning. These messages get sent by the individual inspector, but, very importantly, they get sent by branch chiefs and, then, by regional management for a number of reasons. Sometimes, it needs that extra emphasis and a higher hat placed on things to really make sure that some of these things that are fine below radar, but, that might be early precursors, in fact, are making it through to senior management.

I understand that some licensees do have a sense of loss. It tends to be the more senior

people who are not in all the exit meetings, because the exit meetings, I think, we fairly thorough and the inspectors are quite thorough in what they pass on. It's the higher levels of management that are feeling the sense of loss. And, so, we have always put this premium in this region on the significant presence in the field, the site visits, that hasn't lessened at all. It's only been amplified. The reason and the necessity for doing that has only been amplified by this new program. Make sure that a lot of that important stuff is assessed properly, communicated effectively and gotten to levels that can really use it.

MR. BLOUGH: Hub had said earlier that it's very important that we have an aggressive mind set with respect to inspection and, we think continually questioning is a real watch phrase for us and, it's something we need to reenforce constantly.

This slide is an excerpt of information from the NRC on reactor safety talk. Dr. Powers is often one of the presenters for this course. And, we share this sort of information with all of our inspectors. An interesting point on this slide is that that course is teaching continuing question as an element of defense and strategy. Likewise, another

important principal for us is that we are continually assessing.

Now, the ROP has the assessment process as a continuous process. Whenever thresholds are crossed, once we finalize a determination that a threshold has been crossed through a significant determination process or PI, then, the assessment categorization changes and the NRC's action can be -- can be brought. But, more than that, we have also a number of continuous processes to supplement that.

PI and R inspection, inspection licensees corrective action process is a continuous issue. There is relevance to that is that it's a part of every inspection and, often, each inspection will deal with some elements of problem identification and the other phases of corrective action. But, often, it's problem identification. We have a -- We have now a revision to the program have been in place for about a year and a half perhaps, called PI Stambles (ph) where, in addition to corrective action being applied at every inspection, we'll come back on low level events, or, issues that we think are fruitful and look within a month or two, to see how a licensee has done in evaluating that issue. And, we call that -- That's another element, a continuous process of problem

identification and resolution inspection. We call those -- Here, we call those PI and R samples. And, then, of course, our assessment process and our biannual PI and R team inspection is another element in the inspection process.

MEMBER ROSEN: Randy, at Peach Bottom yesterday, we heard about the PI and R team in the field there and, also, about the sampling process. And, I asked about whether the sampling process was general, or, just in this region. Is it in your inspection menu?

MR. BLOUGH: It's part of the program and, that was a change since the initial implementation, where it's always been an expectation that every inspector will spend a portion of that inspection looking at this area. And, we have periodic team inspections, we added this element that we call PI and R samples.

Now, we may spend more time trying to coordinate that with the other regions. I don't know if we've benchmarked other regions. But, lots of times issues that are discussed in our in our coordination meeting at 8:00 a.m., will get put on the board. We'll send an immediate evaluation and once it's resolved and on line to correct, the immediate

issue, transfers to the other side of the board for consideration and a PI and R sample. The branch chiefs in both divisions are then involved in deciding which wants to go out and look at and whether it's best done by the resident or some specialist. It's a long answer to your question, but, it is part of the program.

MR. MILLER: Randy's more modest than I am more humble. I'll brag a little bit and say this region pushed hard early on in the formation of the program, to get more time, real time following corrective action issues. The periodic teams are important. But, it's very difficult at the end of the year to go back and look at a list and take issues that are nine months, 11 months old and try to find somebody who can even talk to you about what happened, as opposed to go in fresh, kind of while it's happening and, without obscuring the experiment, we're very careful not to get involved too soon. Give the licensee system a chance to operate. There's a lot of judgment when you enter in. But, going in more real time, there's great insight and, those issues are fresh.

So, the program was in fact changed to go to a biannual, as opposed to an every year team

inspection and, we got additional hours to do this more continuous sort of thing. Catch these issues kind of closer to the time when they're happening.

MS. WESTON: Am I understanding correctly that this is tied to the corrective action program of the licensee?

MR. BLOUGH: Yes. It's a way of checking how the corrective action process is dealing with issues.

MS. WESTON: Do you look for any trends when you're doing that?

MR. BLOUGH: In that element of the PI and R inspection, the samples, not necessarily, unless there's a trend associated with the issue, itself, that caused us to go in. The biannual inspection would be more likely to look at trends and, in fact, the most recent change to the biannual inspection, I think, has strengthened, if you look at trends.

I'll continue on here with --

MEMBER APOSTOLAKIS: Let's go back to --

MR. BLOUGH: George wants to go back to the previous slide.

MEMBER APOSTOLAKIS: How do you assess the cross-cutting area?

MR. BLOUGH: The cross-cutting areas are

important because to some extent, the performance there largely determines what we might call the safety culture of the plant, but, not entirely. We've got some additional views on that, but, it's important from that aspect, so, we come at it in a number of ways.

One, the inspectors are trained to look for cross-cutting aspects in each inspection and, to discuss those and document those. Secondly, it's a matter of discussion amongst ourselves. Whenever we talk about plant performance and whether it's in preparation for licensing management to come in to talk to the regional administrator, or, make provisions for a site visit, or, what we're seeing during a site visit, or, any part of the assessment process, but, most notably, the semi-annual mid-cycle assessment, which happens halfway through the assessment cycle and the end of cycle assessment, which is at the end of -- after the end of the ROP.

That's of very great focus. In fact, we may spend more time talking about those common themes and whether there is a trend in cross-cutting area than we do discussing the actual cornerstone.

MEMBER APOSTOLAKIS: [inaudible] What kinds of themes [inaudible].

MR. BLOUGH: Well, first of all, is, the opinions of the inspectors are important. That's a matter of dialogue for us in all the cross-cutting areas and, the themes and what they've seen in terms of the inspection finding. In the area of safety conscious work environment, one of the things -- one of the things that happens is that unless there is a confirmed problem, perhaps, with an office of investigation, investigation that finds harassment and intimidation, it tends to be -- So, it's a matter -- It's a matter of discussion in all our assessment meetings. It would not be documented as a theme in an assessment letter, unless there were issues that led us -- on the docket type level of finding. And, often, that comes out in the office of investigations.

MEMBER APOSTOLAKIS: And, if we look at the other one the performance, the social scientist who works on the culture --

(Fixing microphone.)

MR. BLOUGH: While you're doing that. We do get input for our assessment process where the agency allegation advisor, who looks at the statistics and the number and nature of allegations per site, will give us typically a paragraph of assessment on three or four plants and what they've seen from

looking at the allegations in the plants and, the possibility they should be looking at requirements for specific things.

MR. MILLER: You can always take it down to a real practical level. Real overt situations where somebody's been flatly discriminated against because they raised a safety issue -- I mean, I've seen maybe a few, but, they're typically the kind of thing that takes an incredible amount of office of investigation resources to figure out what the full story is, to hear the story from one individual and, then, the person who was the supervisor and so on. Most of the time, it's a much more subtle thing. And, so, the practical kind of example is the one that -- Let me go back to the one that I gave earlier at Indian Point in 1997, standing in the off-speed pump room and listening to the inspectors tell me one story after another where there is rationalization about an issue.

So, the obvious question, why is that? Management was narrowing the right things in terms of what they expected, but, there was another emphasis on keeping a plant on line. Recovering quickly from an outage and a problem, there is not a, go do the wrong thing. And, so, how do you measure that. I think it's what Randy just said, it's the -- it's the

experience of the inspectors, it's what they see being there day in and day out. It's the professional judgment, the feeling, in effect, that they get about a place that is very telling about the health, or lack of health in a -- in a system.

I removed an inspector years ago in Region 3, when I found out that the inspector, the regional based inspector, would go to the resident's office, ensconce himself in the office and ask for regulatory affairs, who were very willing to do his bidding, go out and collect information and bring it to him. Now, there's a thousand things wrong with that picture. Most of all, it is the loss of the contact that that individual has with people in the field, where you can go in and talk to the engineers and, after you're done having them explain to you the calculations on torque and the like, you can step back, push back from the table and say, how are things going?

It's amazing, when you ask that question, people will tell you how things are going. But, you have to ask the question. And, so, you know, you ask a question here and I'm giving you kind of an answer that is moving around a bit, but, it's a real practical thing. It is the contact that we have, mostly through our inspectors, with people in the

field. They will tell you. Do they feel pressure?

Now, there's production pressure at all the plants. But, when does it cross the line and when is it excessive and, when is it too frequent? So, much of this ends up being a subjective thing. And, anything we might do to try to write a rule and write a formula, I feel would be counter-productive. Or, in fact, be counter to -- to safety. I know it drives some people nuts that we don't have some simple formulas and, I suppose it's a little unsettling that there's still this dependence in this program on a human element -- now, I'm speaking of our side -- but, the human element is still there. We are still -- In this program, we're all the advancement and the betterment, it is still a function of professionals and it's a function of our people doing an effective job.

MEMBER APOSTOLAKIS: This is very enlightening.

MEMBER BONACA: I have a similar question I'd like to ask before -- We were at Peach Bottom yesterday. We had -- We asked information about this scram that took place in December 21st, where they had, essentially, a failure a scram and, then, yesterday, the licensee engineer listed eight

additional malfunctions, was a number of malfunctions. I know he promptly sent a team to look at the event.

Now, counting eight additional malfunctions gives you a real concern about what's taking place there. That's why he sent a team. Now, apparently, they performed an evaluation, determined that the safety significance was slow, because I believe the CDF increase a fraction of [inaudible].

What happened at that point? I mean, do you -- Previous times, before you had this significance examination process, you still would have to pursue the issue for the fact that you had so many additional malfunctions. Now, do you drop the issue, or, do you -- You don't. How do you handle that issue?

MR. BLOUGH: When an event happens, there's several phases of review. One is real time and, that's what we call incident response. The inspector and ourselves, often, and the region follow an event to make sure the plant gets to stable condition. Then, we'll look at the significance of the event, to determine what type of follow up inspection is needed. And, typically, we'll look at what type of inspection is needed before they start up and, then, you make an inspection to make sure that the licensee has learned

all that they can from that event. And, events are important. You learn a lot from events. And, licensees should learn all they can and, so should we from events.

In this case, we had a special inspection team. The special inspection team had a number of green findings, but, it's -- it's true, that they chronicled all the equipment malfunctions that happened after that scram. And, they were included in the inspection report. That report, even though it only had green findings, had a significant impact on the company. When they read it, it did get to the senior management and, we've had discussions, also, you know, that this is indicative of, you know, what appears to be a trend in equipment reliability, not the front line equipment so much, but, equipment across the plant and, the company now wants to meet with us to tell us what their program is for improving equipment reliability.

So, it's -- And, then, of course, we would look at all the inspection findings through our assessment process and decide if there's something formal and substantive there that we would highlight in the assessment letter. So --

MR. MILLER: There never has been a simple

way to do this, but, we're trying to read the licensee's reaction to these things. And, it is significant that after -- We were also down on a management visit at the site, not long after that happened, even before our inspection. We -- the issue with the senior management team there. And, their response, I think, the first step is good and, that is that they're going to make a presentation, not just on that event, but, on equipment reliability at Peach Bottom. Because, in some of our management visits and inspections down there, we've seen problems with diesels and some other things that we think might be indicating a bit of a decline, solid plant overall, but, you know -- And, so -- I think we'll make judgements after we go down there and hear what they have to say. But, I think what we've seen in this case is a reaction to our letters and the mission.

MEMBER BONACA: Yeah. I was curious because that could be the beginning of a trend in the cross-cutting issue and, that means that you have a tolerance of, you know, some malfunctions, they're not safety significant, then, you get more and more and, then, you have tolerance on the part of personnel. And, that's interesting to me also, whenever you speak about this significant determination process, an issue

that I've been bringing up a number of times, where you have an event you determine is not safety significant. Then, you have another one which is just like that and you determine it's not safety significant, which means repeat events.

Now, these are list at old times we used to view as important, if you just fix it, it was a statement regarding your corrective action program. You didn't learn the lesson, so, you may have fixed the specific problem, but you didn't learn the lesson.

How is it being dealt with? All we've heard until now is that during the inspection process, we will take notice of that. But, is it possible for the resident inspector to really keep a log, or, does he keep a log of possible repeat events? How do you look at this behavioral --

MR. MILLER: Randy can give an example of how we have dealt with -- Mario was talking about with multiple cases when there's a cross-cutting issue event?

MR. BLOUGH: A number of the cases where we created a cross-cutting issue are Seabrook is one. Likewise, Salem, when we did a special inspection of the diesel turbo-charge failures there. We determined that there had been prior failures, that corrective

action hadn't been implemented in some cases for that. And, that became actually the issue that we associated with the white finding there. So, likewise, at Nine Mile recently, there was a degradation in the reactor close to the cooling system and, when we look at it, we see there are prior -- prior opportunities to identify and correct the scope of the piping degradation there, so, that becomes basically the issue.

But, then, again, those are issues of importance and they rise to --

MEMBER BONACA: Because they're of a cross-cutting nature. That's why I mean, from the isolated event, you have a cross-cutting tendency to have a behavioral element develop.

MR. MILLER: I think you're talking about a situation like this, there can be an off-speed pump one day and be a diesel the next.

MEMBER BONACA: Absolutely.

MR. MILLER: And, that's the Seabrook case.

MEMBER BONACA: Okay.

MR. MILLER: Seabrook had a case that was -- Was it a white on off speed?

UNIDENTIFIED SPEAKER: Off speed.

MR. MILLER: A green on off speed. But,

you take that, coupled with the white on the diesel and, we identified a cross-cutting trend in our -- in our -- in our assessment letter, which by these days, there aren't that many that get these, that has impact and, so, that's how we intend to get at just the thing you're talking about. Every time you come up, you come up green or white, what's it mean?

MEMBER BONACA: Or, even if you don't. You may in fact have a significant determination evaluation that says no problem with this issue. Then, there is another one, no problem with this issue. Now, you may have many developing that way and, you know, your guy throws in the corrective action program and, some day, we'll fix it. And, what you're fixing is a individual issue. But, you're not fixing a behavioral and systemic problem beginning to develop and is not being -- is not being captured by the significant determination process in place now, it just is not, because that process only addresses one individual issue.

Now, if it raises to the level of a white, then, I have no concern with that, because they pay attention to it. But, if it doesn't, how do you capture the repeat situation? That's --

MEMBER APOSTOLAKIS: It seems to me that

this is what is the judgment of the inspectors and the senior people.

MEMBER BONACA: I'm concerned about that, because, I mean, the inspector is just a human being. He's not going to have -- you know, his mind is metrics, oh, yeah, I'll keep it in mind, I'll log it in. He may, but, he may not. And, again --

MR. MILLER: Mario, this is why, at the risk of sounding like Johnny One Note, I'm going to keep coming back to this concept of team. There's no inspector, there's no manager, who, by him or herself, can put this into a perfect, you know, a perfect issue. There has to be a team and, collectively -- Randy will talk about the process of the periodic assessments and, these are, what, three days long --

MR. BLOUGH: Typically, it takes us three days to do all the plants on a semi-annual basis.

MR. MILLER: And, it's just -- just to get at what you're talking about, so, there's not an individual sort of thing. We would fail, if it were just all individuals.

MEMBER APOSTOLAKIS: Is there anything -- part of the Seabrook example that you can give us, because that sounds very interesting.

MR. MILLER: I think Seabrook is an example

of where there were a number of instances where we feel that the company was not picking up on issues that they had seen precursors reference to the diesel that failed, there's an off-speed bump, there's an off-speed bump, but, a seal or a bearing that went bad.

MR. BLOUGH: We can provide Seabrook example --

MEMBER APOSTOLAKIS: What your feeling might be --

MR. BLOUGH: These end up getting summarized in our assessment letters and, my notes here which could be correct, say that in Seabrook on June 1st, 2001, was the assessment letter that told them they had a issue, cross-cutting issue in the area of problem identification resolution and the common theme was inconsistent pursuit of resolution of degraded equipment at the site of the diesel failure, the events associated off-speed pump failure event that was a loop of off-site power and that that was a repeat.

But, before that, the special inspection report, as well, chronicled this and there would have been discussion. So, it was kind of a theme develops. Now --

MEMBER SIEBER: All of those are on your web site.

MR. BLOUGH: Pardon?

MEMBER SIEBER: All of those are on the agency's web site.

MR. BLOUGH: Right. These are on the agency web site. But, we'll be happy to provide anything that help -- anything that helps.

Now, Mario was saying that if you have issues that are all below the green threshold, that they set a pattern and, there's an example where they have repeat issues from similar behavioral cause. One, of course, we expect the company to be looking for those things. If we think we see something like that, it would be a matter of discussion between the resident inspectors and the company of the resident inspectors and regional management, regional management and the company.

But, the way the program works is, we wouldn't -- it wouldn't get in our formal assessments, unless there are at least green findings that have that element to it. I think when we get ahead to slide 50 or so, we'll talk -- we'll show you the criteria we use.

MEMBER ROSEN: I'd like to close with this

one question about the other cross-cutting area that we haven't talked about, this human performance. When you have an event that clearly involves some sort of human performance deficiency, what sort of questions are you asking yourself about -- you identify a human that didn't do what maybe was expected.

MR. BLOUGH: What sort of questions --

MEMBER ROSEN: What sort of questions are you -- are your residents asking and are you following up with management? The question that I'm asking is, cross-cutting areas are a part of this, I think everybody understands this. So, how much are you involved in the human performance issues, or, is it like safety culture, where you only do it as kind of part of something else? Let's take a specific case where you have a clear human performance deficiency.

MR. BLOUGH: Yeah. This is Sam Hansell, a senior resident from Susquehanna.

MR. HANSELL: Last year at Susquehanna we had eight --

UNIDENTIFIED SPEAKER: I can't hear you.

MR. HANSELL: Last year at Susquehanna, we had eight green findings that were tied to human performance in the cross-cutting aspect. So, after three -- document three findings and, then, tying on

to them in performance cross-cutting aspects was not part of procedures. We got the utilities attention, they did their own internal evaluation and found out they had 27 human performance errors that they looked at and, found some real causes to that issue. In mid-cycle assessment, we had four human performance cross-cutting issues documented in our reports, green findings. Gave that to the utility at the mid-cycle assessment.

In the mid-cycle, end-of-cycle they didn't do much with it. They found four more additional human performance cross-cutting issues tied to four green findings. So, we had eight green findings that were specifically human performance cross-cutting issues at the end-of-cycle, extensive cross-cutting issues for Susquehanna put in the end of cycle letter.

So, for each one of those eight findings, we took the time to look at the human performance aspect, documented them in the report, a separate paragraph and, that's how we then used the cross-cutting issues to get their attention at the end of the year. It worked very well.

MEMBER ROSEN: I think that's very good. I think what we're talking about here is, people who don't do the right thing when they're called upon to

take some action. If you really get into that, there's a tremendous window of what's going on in the safety culture at the plant. For example, tell me something about the behavior, assuming that that's -- You can make the assumption that one person does it, it's kind of like confidence. If you don't find one confident, there's going to be a lot.

One person has a bad behavior pattern with respect to his job, or her job, that person has really no experience and is going the job, a complex job for the first time without any supervision or help. If that person is doing a complex job, a safety-related job with no training, if that person is doing a complex job which requires inter-departmental talking with no coordination. And, clearly, if that person is doing the job without procedures. I mean, these kinds of things can be a tremendous recall into -- what I hear about is the safety culture. And, so, I'm glad to hear that, you know, we had a discussion of that, but, the encouraging part of this ROP gives you the opportunity to do that. To use human events, human performance as a window into the safety culture and, I encourage you to do that.

MR. MILLER: There's a parallel thing that goes on here. Our inspectors are very sophisticated

and they really work hard and we tease through these issues in our periodic counterpart meetings, feature examples of where inspectors stand up and give case histories, a little bit like what Sam did here, to try and learn from each other. So, we're looking for our people to be looking in a sophisticated way a lot of these things. Like the fact that it's very seldom, just an individual deciding not to do the right thing. There are typically a lot of set ups. It's training. It's for control process. It's production pressure. A lot of things.

So, we expect our people to devise in their mind, or, to try to develop a story in their mind on what they think is behind it. So, that as we do our inspections, we can be -- biasing our inspections to be looking in those areas, not to turn around and give it to the licensee, here's our assessment. Here's what you should do about it. But, to bias our inspections, as well as to prepare ourselves to react to their assessments and, judge how thorough their assessments are, to assure their assessments are sophisticated and not just sort of one dimensional, shoot the guy, as opposed to see that there's something behind it.

So, it's -- I should let Randy talk. But,

I think it requires regular sophistication, that kind of comes back to my point, that the program requires this strong human element and a lot of sophistication and professionalism in the people implementing it.

MR. BLOUGH: I listed on this slide just a number of things we do to try to foster a questioning approach and continuous assessment. And, you can see the examples there. I tried to recognize a good variety -- to senior staff on the weekly executive director of operations staff call, when we have an inspector finding that we're particular proud of. We also use things like small awards, instant cash, e-mail distribution. And, the other agents do a similar thing. So, we're actually look at the systems of the other regions, to recognize good findings and, looking at the more rigorous ones to see if we can take some of their examples. I know they recognize good findings.

We have a daily meeting, a DRP, DRS coordination meeting. We use this to kind of set the tones, set priorities, talk about coordination and progress and follow up of events and issues.

The inspector seminars semi-annually. We have all the inspectors here for about three days. We've got things like breakout sessions. Probably,

the most well received part of these seminars is the finding session, where inspectors talk about a particular finding and, what techniques they used to come up with those inspection findings and, then, get questions and quotes from their peers, which is your toughest audience.

We do -- In Region 1, we value getting out in the field at lot. I have a slide here that shows just a few statistics. And, the program requires us to get out. We get out more often than required and, these visits, we use them to interact with the inspectors, but, also, tour the plant with the inspectors, interview a cross-section of licensee managers, talk to people in the field and, as kind of a cross-check on the inspection process. We provide feedback to the company. We also provide feedback or guidance to the inspectors as a result of this.

I actually brought some agendas which Tracy will pass out. This isn't all the briefing materials, it's just the agenda from three recent site visits. So, you can see thumbing through it, the type of detail we go through on a site visit.

I bullet there events, events. I already mentioned, it's important to learn all we can from events for the NRC and for the companies. Not just

the big events, the smaller events. Some of these will result in what we call PI and R samples. Others follow up by the resident with some support from a specialist. But, it's important to take plant events, large and small and, learn what can be done.

Our assessment meetings and, I'm talking now the internal assessment meetings, the mid-cycle and end-of-cycle assessments. The briefings materials and preparation materials are distributed well in advance. We have really a board of folks that describe discussing plant performance. We'll take about three days to discuss the performance of all the plants. We're discussing the performance of the cornerstones, what issues the cross-thresholds, but, we're also discussing what we see as common themes, what could be evidence of a substantive cross-cutting issue, as you've asked a number of questions about. And, we -- The program tells us -- gives us an agenda for these meetings, but, it also says that at the discretion of regional management, you may discuss other topics that you wish.

What we do is, we ask a number of questions. Beforehand, we give the inspectors questions to answer at the assessment meetings. The questions are varied, but, they all -- they all are

gathered around, you know, what common themes do you see that are below threshold. What reason -- What do you see that worries you about the way things may be heading in the future, that sort of thing. It's different ways of asking what do you think.

MEMBER APOSTOLAKIS: The problem with the safety culture is are we going to be intrusive? I think what you gentlemen have described today makes perfect sense to me. At this point, you rely on the subjective evaluation of a group of people, who reach certain conclusions which then are presented to the licensee and, then, naturally, the licensee takes some action, which I think is fine. One possible reaction to this whole thing about safety culture might be to look at the third rule up there and maybe make sure that we are helping, developing the literature that will help these individuals make these judgments, maybe, easier. For example, if you had a [inaudible] or a year-end report somewhere -- or other examples from other regions and what became available and, maybe, that part of the seminar and, maybe, other things from, you know, other sources. Maybe, that would increase accessability of inspectors to issues like that. So, you won't be relying only on their judgment and experience, but, also, you will enhance

them by using your own collective experience of the four regions. And then, it seems to me, would also have a chance of being approved by the commission.

MEMBER ROSEN: Well, now, I think we're talking ACRS --

MEMBER APOSTOLAKIS: We might say that's not necessary.

MEMBER ROSEN: The difficulty I have with that, George, we have described for us what sounds like a process of the safety culture area {inaudible} PI and R. But, Davis Besse happened. That region was not doing terribly effectively what these gents and ladies are describing. Do we back away now, because --

MEMBER APOSTOLAKIS: No. No. No. No.

MEMBER ROSEN: -- Region 1 thinks --

MEMBER APOSTOLAKIS: This may be a good first step to everybody. Now, then, the next question would be, why did Davis Besse happen and so on. But, it seems to me that this is an important bullet.

MEMBER ROSEN: You know, I think you're right.

MEMBER APOSTOLAKIS: Because --

MEMBER ROSEN: And, if we could be sure some how, that all of this was happening routinely and

generically in all the regions and, in fact, it was visible to us, not that it was transparent. Maybe, we could use that. But, we're talking about --

MR. MILLER: I'm going to caution you, though. I want to caution you. If there was a simple way to write into this program a formula that you follow, that would avoid what happened there. It isn't just Region 3. Any of us could fall into this trap. We'd do it. I think that almost all of the things you can talk about, especially, you get more and more into the behaviors and things that really collectively constitute safety culture, the more we have to write that down and make that an explicit part of our program, I think is the extent to which we're going to start driving things in ways that we don't intend. There would be an enormous number of unintended consequences of that.

I think if we just recognize that in the end there is this human element. And, I don't think it's all one where, you know, for absence of a lot of prescription, you can't reliably count on it working. I can't -- Davis Besse happened. I cannot argue with that. But, I don't think the solution necessarily is adding a lot more prescription. I think it's just emphasizing these things that we've talked about here,

this aggression. This aggressive approach. It's this training we're talking about here. Excuse me. I'm offering an opinion here, but --

MEMBER APOSTOLAKIS: We want your opinion.

MR. MILLER; We're passionate about it, because we think that there are a great many pitfalls, if we start down a path of trying to write explicitly the formula for safety culture and --

MEMBER APOSTOLAKIS: That's exactly what I find out hearing about, what you said, it's a corrective judgment. So, I don't have to put formulas down. I don't have to have indicators. And, I find I'm building because all I'm saying is, give them more information --

MR. MILLER: All right.

MEMBER APOSTOLAKIS: -- as background and, then, you are helping them, you know, formulate --

MR. MILLER: That's why we have these seminars.

MEMBER APOSTOLAKIS: I understand that.

MEMBER BONACA: This morning, I asked if you had adequate guidance to inspectors for those kind of issues. And, you said yes.

MR. MILLER: And, I said yes in the sense that we can't think of a formula to make it more

prescriptive. It still has the subjective element.

MEMBER ROSEN: We're talking about something that wasn't a number or a list of things at each plant that can be checked. It seems to me too facile. And, it leads you to give up and say, okay, well, there supposed to happen - it's comparable history and go on with the program we've now evolved.

MEMBER BONACA: For example, the --

MEMBER ROSEN: Warning, the next time one of these events happens.

MEMBER BONACA: For example, the --

MEMBER ROSEN: -- the safety culture, if we don't get something more tangible.

MEMBER BONACA: The Challenger disaster, you know, of 1986, has been used as a lesson learned for everybody. I mean, every technical area, because it's a situation that is not so unusual where you have technical information come in, you have a management decision that somewhat over rides it and, as a minimum, just reading that story makes you sensitive about how, you know, how difficult it is to make certain decisions and, you can neglect certain technical insights when they're available.

So, I'm saying that if you had, you know, multiple examples that people can read, would it help?

MR. MILLER: As soon as Davis Besse occurred and, as soon as the first report which I think was the AIT came up, we made that mandatory reading in this region and we had a stand down across the region to have folks in meetings, sit and talk about what do we learn from this. And, now, we don't do that for all issues, cause all issues aren't, thank God, at that level.

Tom Early, years ago, put together a chart on safety culture. This is what a good plant looks like and, here's what a bad plant looks like and, there were a number of features. It had to do with, are resources plentiful, are there excessive production pressures, is there a questioning attitude? He had a number of things. And, I think that's as true today as it was at the time he wrote that. And, all of us could probably write them.

I don't think we're in a position where we don't pay attention to these things, we do. It's just that what I'm saying is, I don't know we can write this into our program. And, I agree with you, we shouldn't give up trying. It's just that trying to make those now features that we're going to go and explicitly look at, the next expectation is that we have criteria that say what's good, bad or not --

what's good and bad against that. The next thing you know, you've got to document it. And, then, where are you?

I think that you'd be down a path that's going to be counter productive, I believe.

MEMBER APOSTOLAKIS: Let me -- Let me make a hypothesis about Davis Besse. Let's say everybody there knew that the symptoms were there, but, due to coolant leakage -- What would they have done? Would they have done? So, the answer is no. So, it's not then that they put safety at a lower level than other things. Maybe, the issue is technical knowledge and it's not cultural. I mean, that's an interpretation that comes to mind, that they didn't know.

MEMBER ROSEN: Well, the explanation I've offered is, they thought it was coming from the flanges, which --

MEMBER APOSTOLAKIS: That's not the culture issue, is it?

MEMBER ROSEN: It's a cultural issue --

MEMBER APOSTOLAKIS: Why?

MEMBER ROSEN: -- because they don't question the attitude. No one said, yeah, that's possibly where it's coming from and we've had a long history. But, it could be from some place else more

significant. No one said that, or, if they did, they didn't get an ear.

MR. MILLER: Let me suggest an approach here. I would suggest that you ask the inspectors this afternoon, if they -- if they think they can spot a situation where there's a pattern of a licensee too quick to dismiss issues, or, there's a pattern of finding the first plausible explanation. Do they think they're in a position of spotting that where it exists? I think that's the starting point right there. All is lost, if we can't have inspectors who can, just in being there, pick up whether there's a strong pattern or not at the station.

MEMBER ROSEN: Jumping on an answer that happens to be convenient without saying, yeah, that's one possible answer. But, what are the other ones that are also good?

MR. MILLER: And, on occasion, that will happen. The question is, whether there's a pattern of that. And, I would ask the inspectors. Let them give you their opinion.

MEMBER APOSTOLAKIS: Steve, it comes down to multiple (inaudible) does it not?

MEMBER ROSEN: Yes, it exactly does.

(Several people speaking simultaneously.)

MR. BLOUGH: Someone asked a question about regional consistency, so, I do want to make some comments here. We have worked more closely with the other regions and headquarters under ROP than ever before. We have frequent counterpart meetings. Headquarters is very much involved. Headquarters is involved with every assessment meeting that we hold and, we -- So, there is an aggressive effort to try to assure consistency. I would say on the subject of cross-cutting issues, though, that you'll see a range. We have been told by headquarters that we go into more detail and spend more time in our assessment meetings than the other regions. They haven't pushed us to conform with the other regions. That's been an observation.

In the area of cross-cutting issues and assessment letters, early on, we were sort of an outlaw because we tended more to document cross-cutting issues, cross-cutting themes in an assessment letter. The last annual assessment letters which went out the end of February, early March, Regions 1, 3 and 4 each had, you know, three, four, five plants where we highlighted cross-cutting issues and, Region 2 had none. So -- And, the question then is, you know, is that -- is that because of the performance of the

industry in the various regions, or, is there something else going on?

So, we discuss these issues and we are pushing to try to make sure we're consistent. You know, I would say, you'll still see a range on these, just like you'll see range of opinions on PI and R inspections. Before the ROP was actually first implemented, I think an early draft of the ROP did not have a PI and R inspection, based on the theory that if there were problems in that area, they would manifest themselves in crossing thresholds over the low level, technically white, and, then, there would be time based on thresholds crossed for everyone to evaluate the issue and for the appropriate regulatory intervention.

So, even before we -- the first issuance of the ROP, the PI and R inspection and the issue, you know, assessing cross-cutting issues came in, but, there was that opinion that there still is out there, perhaps, to some degree. So, I'm just trying to give you kind of complete information. Where there were -- Our approach on assessment and some of these things we're talking about right now is, we've been trying to advocate a certain approach and, so, our peers -- in discussions with my peers, I'm trying to sell a

certain approach here and, to some extent, you know, we're lobbying you right now.

The issue -- The issue of what are we missing and what is everyone missing is something that always has to have everyone on edge. And, I think it's a very -- it's a very tough issue. It requires thought all the time.

I want to just briefly mention unique sites and, it's just important -- it's just, you know, important in understanding Region 1 and, you know, how we fit the reactor oversight program model. The model has single -- has inspection programs tailored to single, dual and triple unit sites. In the dual, triple unit sites are for dual and triple identical units sites, in essence. We think we've done a good job in adjusting in cases where our plants don't fit that model and, headquarters has been quite supportive. Nine Mile and Beaver Valley are sites where -- are dual unit sites, but, the units aren't identical. There's vintage design, organizational, procedural and, to some extent, happen, even program differences at those sites. So, there's a slight adjustment upward in what we do there. And, in fact, at Nine Mile Point, we successfully petitioned headquarters to have N plus 1 inspectors at Nine Mile

Point. So, we have that now. Beaver Valley's just on the other side of that line.

Now, there's no budget adjustment for these plants. But, the other -- the other units up there were actually multi-unit stations, where we treat the inspection projects as separate projects and, Hub had mentioned that there is some efficiency there. You don't have to inspect, certainly, the security program, or radiological environmental program separately from Salem, it's the same program. And, we take -- We're taking a number of those efficiencies and looking for places where we can take more efficiencies as the companies get better in operating some of these sites more like a single -- single site.

So, what we have to do is to get an adequate licensee performance, that's what the program's designed to do. But, we need to try to do that efficiently. So, those are unique sites.

You've heard about inspection program challenges. The bullets here are all -- they're all related. We've done a good job of bringing in new talent to -- to replace those who have been promoted. We've had to work at it, though, both in the training and development and, also, in the continuity of each

site. The site you were at yesterday, Peach Bottom, both inspectors are turning over in the near future and, so, that's a worry for us. A number of things we talked about in terms of management visits, the branch chief oversight, the things we do. In addition to tasking the inspectors with good turnover and making sure there's some face-to-face turnover. Those are things we need to do to assure continuity at the sites. And, the goal, of course, is to complete the program with high quality.

With Indian Point 2, another external staple on our demands, we've been challenged to do that. We've done a number of things to try to monitor quality and, also, just to make sure we get the program done. We call those coping measures, I think. I hate to say Wayne's going to cover it, but, I think Wayne's going to mention that. We've had to encourage inspector over time at times, to forego some training, discretionary training for the more senior experienced inspectors for a period of time. And, these are all things that there's a cost associated with that. And, in the resident program for last year, 2002, we -- headquarters endorsed and we took the one-time measure for about two-thirds of the sites. Each inspection procedure has what we call a sample range and, the

minimum and maximum and, the inspector's supposed to look at a certain number. We target it closer to the minimum, at about two-thirds of the sites for 2002. We think that should only be a one-time -- one-time measure. We don't think we should be doing that year after year. We have not taken that step for 2003. We hope we don't have to. Although, you know, headquarters will tolerate it another year, if that's what we have to do.

This slide shows some statistics on resident turnover. Even though there's a seven year tour rotation, with the promotions and what not, we've seen turnover of two-thirds of the senior residents and, almost 60 percent of the residents, within the last two years. That's part of what we're trying to manage here.

MR. LARKINS: Can I ask a question on the pipeline for RI's and SRI's. Is that coming on the interim program we started 12, 15 years ago? What's the main feeder group for RI's and SRI's?

MR. BLOUGH: So far, it's been -- We are hiring interns, so we have been all along. So, the typical path is an intern would come into the region, go through the intern program and qualify as an inspector at the same time. So, within two years

they'd be a certified inspector, graduate of the intern program. Typically, they'll spend some time in DRS before going out to be a resident inspector. So, the pipeline for the resident program has been the experienced hires, plus the interns after they've had some time at DRS and, that's not -- that's not universally the case. There may be some interns who went out earlier than that, but, that's typically -- and the latest group of -- the latest group of interns are none of the ones we hired within the last two years is out as a resident inspector yet, although, the third resident -- one of our interns that has been selected to be the third resident inspector at Davis Besse and, she'll be heading out there within a couple of months, in August.

MEMBER ROSEN: What is the approach we're now taking in this cite process -- To what degree do the interns get to the grounding and ERA technique, certainly, understanding this modeling process. How it arises as a result at this influence the inspection program and so on.

MR. BLOUGH: They have -- They have a course -- What's the basic course?

UNIDENTIFIED SPEAKER: P105.

MR. BLOUGH: P105 doesn't have a title?

PRA basics, which is -- How long is that course? Two weeks. One week.

(Several people talking simultaneously.)

MR. BLOUGH: So, they get some introduction to the PRA basics. They study the SPP. They work through cases. They get their training that the inspectors get at the seminar. It's a skill you develop over a period of time.

MEMBER ROSEN: Well, you know, PRA's useless to you, unless you also understand the systems. So, you've got to get exposure at the same time. And, if you just get the systems and no PRA, you're not really up to speed in the enviroment your operating. Now, if they had been okay ten years ago, it's not longer okay.

MR. BLOUGH: So, I would say early on, we're probably still more heavily towards the systems and the inspection technique and working in the basics for the PRA and, then, working through that with experienced inspectors as they prepare for inspections.

MEMBER ROSEN: Well, I encourage you not to send inspectors to the field without some sort of grounding in PRA. They'll really be at sea, even if they think they understand the systems.

MR. BLOUGH: No. I haven't given a real complete answer. Does anyone want an amplified answer? Okay. Thank you. We'll take that comment.

I wanted to talk about the assessment results for the plants and I have current information, plus some history of the ROP cycle that we've had thus far. The point is, we have, through the ROP, we've seen some reasonable differentiation in plant performance. This slide shows the plants that are outside the regulatory response. At this point, with Nine Mile Point 1 and Salem 1 haven't been recently having white issues in mitigating systems that have been recently finalized. In addition, several plants in Region 1 have current substantive cross-cutting issues.

The next slide just talks a little bit about what we've been talking about, what a cross-cutting issue is and, as you see from there, this is right out of the manual chapter. We're looking for not only a number of findings in certain areas such as human performance, or, PI and R, but, also, that they have a common causal theme. So, that's a lot about what we'll be talking about. We expect the inspectors to be looking for common themes at the site and, that's a matter of discussion before -- before they

have a master point where they actually are highlighted in assessment letters.

The next couple of slides mention the plants to which we've currently highlighted substantive cross-cutting issues. And, counting Salem, Hope Creek, separate inspection projects like we do now, there are a total of five right now. Indian Point 2 are ongoing. And, the other four which have been highlighted for the first time, based on the end-of-cycle meetings that we held this February and, the letters we sent at the end of February or early March.

Over the history of the ROP, we're in our -- we're almost halfway into our fourth cycle, if you will, of the ROP. This shows some historical results. In addition, Indian Point, which had been in multiple degraded cornerstone, now is moving from degrade cornerstone to regulatory response. In addition to those, we've had three plants in degraded cornerstone for a period of time and, the plants and the issues are listed there.

Typically, we've had a number of plants in Region 1 in the regulatory response, either a single white issue, or, multiple white issues, but, in separate areas.

MEMBER ROSEN: Hold on a minute. Could you go back to that?

MR. BLOUGH: Yes.

MEMBER ROSEN: I guess I'm astounded to see how many of the plants in Region 1 are in the regulatory response column. Is that atypical? One-quarter to half --

MR. BLOUGH: that's -- If you look at -- It's atypical. I have here the -- I have here some of the results from three years.

MR. MILLER: This is over three years. This is not a snapshot of now, right, Wayne?

MR. BLOUGH: Well, the degrading cornerstones are historical. If you look back through, we typically have several plants in regulatory response column. At the end of the last cycle, at the end of calendar year 2001, we actually had 11 plants out of 26 in regulatory response. One in degraded cornerstone, one in multiple degraded cornerstone. This is more than, on average, more than the other regions.

MEMBER ROSEN: That's fine. I saw that number and I thought it really sticks out.

MR. MILLER: This is a point of confusion for a lot of outsiders, who want to look at this and,

almost a credit to the old cell, we had cell one, cell two, cell three. And, we were kind of -- It's kind of an integrated assessment and, people look at these columns now and say, well, I guess that must be cell one, cell two, cell three, when in reality, you can be in a regulatory response column for a very discrete issue, where, before, you wouldn't be made cell 2.

MEMBER ROSEN: I understand that. Even so, regulatory response is not -- you're not -- you're not anywhere near the edge of the cliff. But, still, one-quarter to one-half is higher than my expectation, based on the other regions. It's higher.

Now, I'll have to ask the follow-up question.

MR. BLOUGH: We have a lot of case -- We have a lot of cases of a single white issue and, there have been a lot of issues in the EP area, for example. I think the ROP has been good in that emergency planning was an area that, perhaps, where industry attention to it had waned in the years just before we started ROP and, then, by looking at it in a different way, we come up with these issues. And, also, in the emergency planning area we had a number of white issues associated with the --

MEMBER ROSEN: Do you understand, you're

not answering my question?

MR. BLOUGH: Okay.

MR. MILLER: We can't give you an answer that we can prove. And, I want to suggest a couple of things. My reason for talking at the beginning about the historical context of this region is, a lot of these issues are legacy issues and, in the years working at it, it's still tough to do a turn-around. And, I think what you're dealing with in the plants in the northeast is -- are plants, many of them that got off to a less than good start. There was a lot of learning as nuclear power developed and spread across the country and, we're still dealing with that.

The other aspect, I think, there's some -- We're aggressive. We're aggressive. Now, I'm going to say, we're more aggressive than the other regions. All I'll say is, we're aggressive. And, does that plan do it? I can't say. I do know that there is these single stand alone units are a very difficult thing to manage. And, a lot of the performance is still -- What we see today is even rooted in some of those

old --

MEMBER ROSEN: I think that's possible. And, we're all just speculating.

MR. MILLER: Right.

MEMBER ROSEN: I think that's a possible explanation. I rather don't think the other explanation you offered, that you're more aggressive, will very well --

MR. MILLER: No. No. That's why I'm not saying that. I just know we are aggressive. I think the others are aggressive. What is the answer, I don't know.

MEMBER ROSEN: Okay. It's useful to ask questions, even if the answer isn't --

MEMBER BONACA: I think it would be interesting to look at it. I mean, even historical when the process was in place. The difference was very large between Region 1 and Region 2, for example, on the reg. And, the other observation I could make is, a lot of problems were self-identified in many of the Region 1 plants. Are certified in other regions, I don't know. We have a very interesting issue when you look at culture and, how regional culture may affect operation of plants. I guess this more of a search issue, but, certainly, it's an interesting one.

MR. MILLER: It's one of those issues that you'll never have an answer to, but --

MEMBER SIEBER: One way to sort of get it

is to ask people who are working either as a contractor or -- I think there is a difference in the cultures from one region to another, as far as licensees are concerned and working all four regions. There is a difference and you folks have a challenge.

MR. BLOUGH: I've got a couple of slides, I guess, one slide just on the history of cross-cutting issues of Region 4. This is for all four ROP up till now and, this is a total of -- at one point or another, we've had ten sites with a cross-cutting issue, highlighted. Many of those, we've closed and, some closed in as short as five months; some for over two years.

But, we think highlighting, even though it's only a few sentences in an assessment letter, plus all the other things we've talked about that we do along with it. We think they have been useful and highlighting by company attention on these areas.

And, I think -- That's all the information I wanted to present. We can move on, or, we can take questions, additional questions.

MEMBER SIEBER: I would have thought, by now you folks would have had enough questions. Why don't we move on.

MR. BLOUGH: We had Indian Point next on

the agenda. Wayne Lanning was going to talk about inspections.

MR. HOLIAN: Good afternoon. I'm Brian Holian. I came to the region as deputy director, division director safety in June of '99, following two years with Chairman Jackson, on her staff. Prior to that I had been in NRR's reactor projects for six years. Prior to that at Calvin Cliffs in engineering and operations organization, where I had SDA and SRO and I spent a few years there.

I don't miss the DC beltway traffic, although, the mall traffic gets tough around here, but, it's been very good in the region.

Next slide. Indian Point, just some general comments to start with. It has been a very challenging case. You've heard some of that. We could have taken another plant to give you some specifics, following up on Randy's discussion. But, as you'll see in a couple of slides, Indian Point presents a good picture of not only cross-cutting issues, but, also, some inspector findings and the way we work that through the action matrix.

It did -- was an issue as we went into the ROP, on how we would span the old and the new processes. We did have a very strong inspection

history prior to the ROP and, we wanted to make sure that that was carried over, even as we started the ROP. So, that was one of our issues as we looked at that.

As we went into the action matrix, we did pioneer quite a few of the issues there. The escalation as we took old findings and tried to apply them in there and make sure we didn't lose that. You'll see that with one yellow finding I'll talk about. De-escalation, primarily, on the issue on how long we could finally open. They chose four quarters when they started. They took that as a good example. We had to prove, at least at Indian Point, that we needed some flexibility on that and, that was granted, you'll see.

It has been a significant impact on, not only DRP, but, DRS. We've taken people from Dianamis (phonetic), folks in this room, almost everybody that's been impacted some how by this case. Just look around. Wayne Schmidt -- we lost one of them. He was sitting over there. When you talk cross-cutting issues, we made it a point to try to keep some consistency on some of those inspections, so, we freshize (phonetic) or mixed in, but, Wayne Schmidt, who was on the 95/003 inspection, also led three of

our problem identification resolution inspections. So, he could track very well the issues and, even personnel and different pockets of what he was hearing at the licensee. One other gentleman in the back is Dave Lou, he's down in rotation at headquarters. He was a branch chief. When I talk about the red finding, I just wanted to highlight a lot of the work that he did. He was division director safety as a branch chief.

Next slide, please. This is just an agenda slide. I will take you -- Our goal is not to take you through three plus years of history, but, once again, to apply some of the aspects of Randy's on Indian Point. I will just spend a little time on performance history and, the bulk of time, on two charts that you have in there, on how the action matrix was applied.

Next slide. Once again, plant data, unit 1 is the old -- old plant up there, on the left there, out of seven spent fuel pools, there's all the spent fuel is in one of the seven old pools there. I just mention that, that does still raise some interest with the people there and, they're looking at dry cast storage for all these units in the next year or so.

Year two and three, near identical plants,

but, once again, as Con Edison was the owner early own, a reminder, they sold unit 3, put up the fence and that really affected issues between those plants, unit 2 and unit 3. Unit 3 was on the watch list in the '80s time frame with their own issues and problems. Unit 2, since then, in late -- early '90s, has had significant issues also. Not much communication across those two sites, between Con Edison and NIPA, in the history. But, pretty much identical sites.

Next slide, please. As I mentioned, why is this important. I just want to highlight that Cannon was making a difference even prior to ROP. We've had a lot of factors that have come into play since then, that deregulation, we've had a new owner. But, the inspection findings that the region was pushing in late '90s, '96, 7, time frame, really put a thumb nail on this plant. They were working themselves through low result scores and, a couple confirmatory action letters. Some of the plant events that you have there over the '96, '97 time frame, there were about eight plant trips and/or four shutdowns. These were for issues, main steam safety, relief valve problems, inoperable pressurizer, code safety valves. They had repetitive DV50 circuit

breaker problems. This might bring back some memories. Hub mentioned off-speed pump roots and issues. We're seeing that at Point Beach now, in another region. Talk about precursors.

This plant, in the '97 time frame, had three main feed red valves failed to close on demand and, they found out that it was grit that was left over from working the high pressure turbine in the '95 outage. And, it affected a high pressure -- a heated frame pump in that outage, but, they never tracked it all the way to the feed red valves and caused an issue then, in '97. Over that time frame, you had about a half -- $500,000 in civil penalties from '97 to 2000, that were levied pre-ROP.

One of the issues as we talk about this, when we went into the ROP, was what would happen when ROP started? Would they all of a sudden be all green in the eyes of the public and/or, even the NRC?

I'll go to the next slide. One of the ways we dealt with that and, Tracy, you might have to use a little red mouse there. I think it's up top, to help along.

That yellow finding on a mitigating system -- This chart, first off, just to start, this chart up top, explanatory notes follow, I should have taken it

off of your slide. This chart does get sent out on our six month annual assessment letters. We send out our assessment letter, a chart like this for the licensee to track and, then, on inspection, plan for the next year.

The yellow finding there in that first quarter of the ROP in 2000, you'll see the note at the bottom of the page, 8/99 event was pre-ROP. It was not an official yellow finding. This was the issue from the August '99 complicated plant trip that they had. They locked up safety buses, one diesel, also, had a separate problem. They ended up running a battery down, went into an unusual event for losing about 75 percent of their annunciators.

MEMBER ROSEN: When was the steam generator rupture?

MR. HOLIAN: I'll touch on that next. I'm going to get that next. February 2000.

So, that yellow finding was an issue that we put in a commission paper and, we documented it. Here's a plant that's pre-ROP, but, we have a lot of significant equipment issues. If we were to color it as a problem, it would have been yellow, as risk. It was never finalized because it was a pre-ROP issue. But, it eventually got tied to the very similar issues

that are in the steam turbine two failure. So, I might have mentioned and highlighted that.

Go over a couple of columns there. You had the event, the tube failure -- I'm sorry. The bottom of the slide, I did add some items to the slide that we send out. These arrows at the bottom of the page, I put in just for your reference. It's a time line of significant events or milestones at Indian Point. There's the steam tube failure event.

It was a lot of work done on that issue and event, not only an equipment issue with tubes that they had missed in the '97 outage, but, also, corrective action, they had some indicators, once again. In the '97 outage time frame a more thorough assessment of their corrective action process and looking at, even, some of the CR's that they wrote would have pointed to issues with that. That ended up as a red finding in quarter three.

Back onto the EP area. In the event of steam tube failure, they did eventually, first degraded cornerstone for them was three white findings resulted to the -- as a result of the February 2000. It dealt with emergency response, organization, accountability. Once again, their augmentation of staff during the event. And, then, they had some very

difficult problems with joint news that have carried on, even again lately in our last drill here to a lesser degree.

Finally on that, we did carry those late findings, you'll see. We had to face ourselves with them, even going past the four quarters. We looked at that. We targeted a remedial drill in June of 2001 time frame and, they did put some -- Con Edison did put some resources in that area and, also, you know, Entergy was just coming in at that time at Indian Point 2. But, Con Edison did a put a lot of resources in there. We were able to clear that degraded cornerstone.

MEMBER APOSTOLAKIS: Are these inspection findings or performance indicators?

MR. HOLIAN: You do have a couple of performance indicators, where you have a PI there. I wasn't going to touch on all of these. I'll take questions, though. You did have a yellow PI that was related -- You had one on reactor trip frequency. The very integrity was related just to the tube failure, itself. You'll track RCS leakage, so you have a tube failure of a hundred 20 degrees. It kicked itself in as a yellow, just for one quarter.

You had -- You had another white PI for

diesel unavailability there. You had one for reactor trip frequency.

Go ahead.

UNIDENTIFIED SPEAKER: What's MDC stand for?

MR. HOLIAN: I'm sorry. Down at the bottom of the page, that's the matrix columns. And, once again, they entered a red finding by itself, will put in you multiple degraded cornerstone. So, that's multiple degraded cornerstone. DC is degraded cornerstone.

MEMBER APOSTOLAKIS: Both these whites --

COURT REPORTER: Speak up.

MEMBER APOSTOLAKIS: These are what, inspection findings, right?

MR. HOLIAN: Yes, they are. We had an extra fourth one there. We were tracking a white right as the ROP started. They had a drill and corporate team, where they missed making classification at times. We have one white finding, right as it started there. Then, you had three white findings that came in as a result of our inspection, our augmented inspection team, result. And, by the way, the HRS was briefed about the August time frame in 2000, two AIT's that we held. We had the briefing

at the same time, we came down with the two AIT team leaders, Ray Larson and one of them moved down to headquarters now. But, we briefed both the AIT for the steam tube failure and the August '99 event.

White findings, as I mentioned, I don't want to go into specifics again, but --

MEMBER APOSTOLAKIS: White now is the determination if it's white depends on some quantification, doesn't it?

MR. HOLIAN: Yes. In the emergency preparedness, it's not such a quantification in emergency preparedness as risk. It's a quantification of, did they identify the issue first.

MEMBER APOSTOLAKIS: See, that's my problem.

MR. HOLIAN: Yes.

MEMBER APOSTOLAKIS: Is this a white?

MR. HOLIAN It's a --

MEMBER APOSTOLAKIS: When it comes to the PI, or, even there, we have a problem with it. Let's say, you have indicator systems. I can believe the yellow finding, based on CBF and changes to CBF. When it comes to EP, how much of the white is a white?

MR. HOLIAN: Yes. We follow that discussion in the industry. I know they're looking at

that now. You heard Randy talking a little bit about there. He was answering what has made a difference on some of the Region 1 plants. He started to give an answer about, in fact, maybe, EP was a strong program, strong to some degree here, but, maybe, he hit it last and, Randy was mentioning that our ROP has picked up and made a difference on some of their EP's. So, there's some truth there. I know they're looking at that and calibrating, where's that white compared to mitigating systems white and the risk it was.

MEMBER APOSTOLAKIS: This is --

MR. MILLER: George, you try to take all of these things. There's a range on all of these things, as you'll hear Gene talk about the calculation done for the Salem diesel one, where it stands, you know, yellow, white or green. And, you come up with a -- with a -- with the best estimate. You stand back and you try to ask yourself, does that seem right? In this case, on those whites, emergency preparedness. At Consolidated Edison, at the time we made those findings, that was white. They had problems. I have no problem with that being a white. They had issues. They lost and had fallen behind in terms of doing the things that they should have been doing on emergency preparedness.

So, my sense is, those were valid concerns that we had.

MEMBER APOSTOLAKIS: Another issue, I think, is the issue of consistency.

MR. MILLER: Sure. Right.

MEMBER APOSTOLAKIS: The IE's, the EP's.

MR. MILLER: Yes.

MEMBER APOSTOLAKIS: Some are based on the list and some are based on, you know, poor judgment on the -- others are PI's.

MR. MILLER: The staff is looking at that. The staff is looking at just that issue.

MEMBER APOSTOLAKIS: Good.

MR. MILLER: What's the right threshold? Are they set properly.

MR. HOLIAN: The staff at the region. DRS challenges us on a lot of EP findings.

Once again, just a couple more items on this chart. Somebody -- Mr. Rosen, I think you asked earlier about when did -- my special project that the region had put together. We did -- As we took the red finding past full four quarters, once again, that was a significant issue, not only dealing with external stakeholders, but, internal stakeholders. But, that red finding, the first aspect you just had -- I just

want to highlight this again -- in the public it was, this is not a red finding. This is not an isolated steam vent tube or, in this case, it was more than steam vent, it was corrective actions and, what we had seen at the plant.

But, to the public it was, this is a red plant. This is -- You know, it was very hard to disassociate from that. And, how can a red plant be operated? That was another issue we had to deal with. So, the public, that didn't make sense to them, as you had a red finding of plant. So, that delved into our external stakeholder work load.

But, what you had there was, we took it past four quarters. We obviously saw, just as Cooper Plant in Region 4 now sees as they entered in, that they're going to be there for a couple of years, I think. We saw that the issues were longstanding. That 95/003 inspection in January of 2001, a 14 person inspection, inspectors from around the region with contractors highlighted numerous green items and, many broad areas. Once again, engineering, corrective actions, human performance, recognized EP and the fixes that were ongoing, but, recognized that as still an issue.

We stepped into a significant inspection

aspect at that time. And, so -- But, at that time, we saw that the utility had come in. Con Edison was looking at selling Indian Point 2. We had a lot of issues -- It was about that time, there was a six-month period where I was able to pull back and let the project's organization work with division director of safety a little bit more. And, then, you'll see at the end of the year as we get into an operator recall, a new yellow finding. We started stepping back up.

Randy and I split the plants in RDP just for item emphasis. I would maintain the Entergy plants to continue to track.

MEMBER ROSEN: You have an operator recall high failure rate. But, you also have mitigated systems. What was that about?

MR. HOLIAN: I'm sorry. Mitigating systems, yellow?

MEMBER ROSEN: You have two yellows in mitigating systems.

MR. HOLIAN; Yes. We had -- The one yellow is the one I've been tracking the whole time. That yellow was not an official yellow. That was the August '99. We tracked it and when we talked about the red finding, we talked about the red and yellow. We kept -- The issues from the August '99 were

equipment issues. They had the tap changer nuts. They had diesel settings not set right. They had some human performance errors in there. Those track very well with the issues in the red. And, we kind of -- We coupled those together as findings and, that's what that is. The second yellow is the operator recall.

MEMBER ROSEN: Mitigating systems.

MR. MILLER: Yeah. Those operator recall, operator recall falls in that category. You're going to talk about the multiple findings and so on. What we did to establish themes, so that we didn't end up piecemealing.

MR. HOLIAN: That's part of what I was getting right there. The red and yellow findings, it was, as we looked at closing the findings. We mention, again, precedent setting issue on Indian Point 2, what does it take to close a finding? They replaced the steam generators. Some people said the utility. We replaced the steam generators, closed the red finding. And, that was a simplistic view back here in 2000.

You see internal NRR, where we've got a plant to fix, the Ebb and current (Ph) inspection by the next inspection. Is that enough to close the red finding? We had themes, as I mentioned in these. We

put them on annual assessment meetings and, in the 95/003 inspection, that dealt with those areas I mentioned. Weaknesses in engineering design, human performance and corrective actions. And, it was substantial improvement that we wanted to see in those areas, similar to what Cooper is now patterning themselves after IP2, to close those findings.

So, as it turns out when we go to the next chart and let's just go over there now. You had the red finding open for nine quarters. You had the yellow finding and operator recall open for seven quarters. The white findings in EP for open for at least six quarters. And, you're tracking a white finding now in control room fire wall, that probably will be open for about --

MEMBER APOSTOLAKIS: How do you decide what to close. You mention two or three --

MR. HOLIAN: I mentioned two or three?

MEMBER APOSTOLAKIS: Well, you said some people argue that --

MR. HOLIAN: Yes. We didn't take those first two.

MEMBER APOSTOLAKIS: You didn't take them.

MR. HOLIAN: No. We didn't take those two. Part of what we added in feedback forms to NRR in that

were better criteria especially for a plant coming on --

MR. MILLER: Wait, there has been recognition that -- And, we've been learning all along in the ROP. There's been recognition that the guidance needs to be more explicit with respect to what we learned from Indian Point and other sites since then, about how you close out these findings. That it's unrealistic to think that somebody can get into a level of performance that causes them to multiple degraded cornerstone and expect that we can snap your finger and in short order be cleared, you know, of those issues. It's not realistic, especially, when you're talking about a spectrum of issues and not a discrete issue. And, so, we've learned a lot and that's now being reflected, I believe -- Roy's not here now -- in the guidance.

MR. HOLIAN: Yes, it has. Some of the words we used even in our assessment letters, where we were looking for substantial improvement in these areas, that was a look at findings, what other findings you had, a lack of, you know, significant findings, operational systems being out of service. And, a lack of, also, the need for in the action made, to use such items as scales for entering information.

Some of that guidance has been put into the ROP.

MR. MILLER: Brian, if I could emphasize just one thing. This goes to the question that was asked earlier by Mario and some of the other questions this morning. And, that is, how do you avoid piecemealing things and, how do you assure that you are not just, you know, sitting and watching one failure occur, treated it as isolated, move on to the next, ever happening again and again.

The program, literally as it was written, would have had us take each of those findings and deal with them each discretely. A big part of our plan identified the cross-cutting themes and our whole effort was less on, did they employ new techniques for any current testing that were more robust. Or, deal just with the specific issues at EP. But, rather, what did they do with the broad area of human performance, design, corrective action and, these themes that we had and, all of our efforts were aimed at tracking progress against those themes, as opposed to follow up on discrete issues.

MR. HOLIAN: Once again, a reminder for those who might not have known, we're tracking now the new yellow that cropped up at the end of 2001 in operator recall, four of seven crews failed operator

recall and, that has just closed now. And, that finding was kept open, again, with a necessary look back at operator recall at the end of their cycle. The utility did a good job in high-intensity training, pulling crews off of shift. And, it also branched into their initial licensing aspect. We had some separate information from allegations and other areas, but, we team that as a necessary area from when our inspectors were showing us, for verification that their training program was handling both of those areas well.

MEMBER ROSEN: Brian, I didn't quite hear what the original recall failure rate was. Did you say it was seven crews?

MR. HOLIAN: Four of seven crews.

MEMBER ROSEN: Four of seven.

MR. HOLIAN: That's correct. That comes out as a yellow.

Once again, on this slide, one item as Hub mentioned, not discrete items as you'll see here. We were closing a red finding. You still had a yellow finding open on operator recall at that time. It had been nine quarters. I mentioned Wayne Schmidt on his 95/03 inspection, he was on several problem identification resolution inspection. We were able to

do those supplemental inspections at probably about eight month intervals over this time frame. So, there were three of those that we did track very well and, also, have some separate design inspections in there.

What you have, though, at the -- You're about ready to close the red finding and, you did have another isolated white come up. I call it isolated. It came out of -- Entergy has now come in. They put some significant resources in. They've done their own self-assessment. They, themselves, admit that as they're doing due diligence on a plant like Indian Point 2, they're a little closed out on almost what they're buying. And, they get in there and did a detailed review and, have found out that they had some significant holes in their control room wall. This was a fire boundary. You'll hear a little bit about that from Roy Fuhmeister, in the session later this afternoon.

That white finding is still open now. A supplemental has been done. It really goes back to original design, but, it also has a corrective action piece in it. There were some pieces there that they could have and should have fixed that wall better, even when it was identified, even with the new owner. So, what you have here, though, is an issue here, as

Hub has mentioned. We look at it in concert for themes. They did show substantial improvement. Somebody asked cross-cutting issues earlier. You heard one of the senior residents. We didn't bring the Indian Point residents in, keep them on the site. But, it was easier to make a cross-cutting issue at Indian Point about a year ago. There were 12 findings of human performance. All had been tagged by the residents through the year.

This last end-of-cycle assessment, there were four to five. Still, you have to have a theme, that they're there. It can't just be somebody makes a mistake here and somebody makes a mistake here. So, it is getting a little tougher. There is progress made. We engaged the utility. They recognize that, yes, the red might be cleared, but, they still have a human performance and a corrective action cross-cutting issue, with some progress being made, at least set out in our assessment letters, that, okay, you still have it. We're still following it. And, we recognize that progress when they make it, even in the number of findings.

UNIDENTIFIED SPEAKER: Has the ROP matured enough, that we can clearly delineate multiple degraded cornerstone is a regulatory response problem?

Can we communicate that in terms of risk communications?

MR. HOLIAN: We worried about that, absent the yellow finding coming up on operator recall. We worried about that from a region, because we worried about this plant going from red to green. You know, we worried about it and, rightly so, not only public perception, because if I only had the tube failure red and, at some point, because of the broadness of the issues at Indian Point. Now, if I have an off-speed pump and that causes a red finding, it's a little easier to explain to the public and, a little bit of risk accepted. They had a problem with a strainer and, they fixed that and, that's it.

But, on this -- It's not just a tube failure red. It's broad issues that go back to the August '99 event, with equipment and human performance. So, we did worry about that issue and, we were getting ready to face that communication aspect, primarily, to the members of the public. It was more gratuitous than anything that you had a yellow finding and, in this way, you did step down.

MR. MILLER: Much of the challenge has been doing the, first of all, doing the right thing on Indian Point. And, the second thing is communicating

it effectively. There are a number of people in this room, who can attest to this. We made iterations, or, we produced a document on Indian Point because of the hypersensitivity and the challenge of making clear what our basis is. We're not playing games in this. There is a process. We're following that process. Then, there's some judgment and with respect to those judgments that we're making that we've slaved over and, I think have done a fairly effective job of explaining why we've done as we've done it. As we escalated initially and as we de-escalated.

I think that you just have to look at the record. The record is fairly complete. These letters on Indian Point are always longer than the other letters.

MEMBER APOSTOLAKIS: So, if I have a red and if you have some important piece of equipment, but, you have already assessed that the fundamental cause was human performance. When do they remove the red? When they fix the equipment, or, when they do something to the human performance problem?

MR. MILLER: The second.

MEMBER APOSTOLAKIS: The red?

MR. MILLER: The second.

MEMBER APOSTOLAKIS: Even if they fix the--

(Several people speaking simultaneously.)

MEMBER APOSTOLAKIS: It was still red.

MR. HOLIAN: But, it was very well communicated on that. It wasn't just the tube failure. It was corrective -- As a matter of fact, the violation was a corrective action violations. It wasn't that you had a mechanical failure. You had four tubes that they should have plugged in the outage. So, that corrective action piece, it's a correct description for them to understand the issue and, really, even the public.

MR. MILLER: George, if you go back -- if you go back and look at the slides that we used at the many four and five hour meetings in New York, I wish there were many, the public could sit there and see exactly what we were tracking, exactly what we were doing. We always talked about how they're going to fix these generators and at some point, they'll restart the plant. But, these are the issues that we're tracking and, we did that for internal communication purposes, as well as external communication purposes. And, we made it clear from the beginning, that were not going to let it go, until we see -- In fact, we wrote, Brian, didn't we in the letter on 95 '03, we needed to see a substantial

improvement on those fundamental issues, before we would clear the record.

MEMBER APOSTOLAKIS: First of all, I do agree with you on that's the way it should be done. But, it's not clear to me, how you decide that the human performance issue is closed. How do you decide that the operator recalls is not there any more?

MR. HOLIAN: The corrective action -- Let me mention a little bit here. We do have some cross-cutting issues, so, those are still open. I mentioned that -- I said findings. I have a cross-cutting issue is now raised to the issue of the red finding. On the red finding, it was a corrective action violation. We, as I mentioned, Wayne Schmidt was on three corrective action supplemental teams, that went out at about eight month intervals to check progress on that. At any one of those inspections, if we saw adequate enough progress, one, that they were not taking the findings at each one of those inspections and, we said, hey, you're still not doing a good job in a timely method of fixing your own problems.

Once again, I already mentioned, if you have 3,000 CR's and they're generating 12 to 14,000 CR's. And, still languishing with the back log of issues. Go ahead.

UNIDENTIFIED SPEAKER: We still have been running 95/003 as well, supplemental inspections. And, that's really where we found a lot more problems than we knew about on the initial red inspec -- initial steam tube 2 failure inspection. So, the supplemental inspection raises some new issues that needed to be dealt with before the red finding was closed.

MR. MILLER: But, it was with that 95/003 that we established the baseline for all of our oversight. And, everything tracked back to that. That's where we categorized the issues. That's where we said, there are numerous events, but, when you haul it all down, here are the teams we're concerned about. We then refer -- The company put in place a program of improvement that addressed those themes.

Now, they established and, here, we're going in a lot of detail at Indian Point, but, I think it's useful for your understanding, generally, how we approach this.

They put in place a number of indicators. A lot are leading indicators. There were a number of times that they had, that they were tracking personnel errors rates. They were tracking back logs. They were tracking a whole lot of things. And, part of this

oversight, this technical coordination team with Pete Esolgroff (phonetic), who's the branch chief, working with Brian, the resident inspectors, periodic meetings on site to track progress against those indicators.

And, here, I'm going to throw at you my mosaic answer again. There is no simple formula that you can use. It was a collection of things. It was their indicators of which there were numerous. It was the inspection findings from the follow-up inspections that were done. There were the management meetings that we did, the site visits. And, in the end, we made a judgment that they had crossed the line and, it was a weight of evidence that they had finally at least substantially addressed the issue, not to say that there aren't continued problems. Not to say we still didn't have cross-cutting issues. It's just they had made enough progress to move them out of this very weighty area of a multiple degraded cornerstone column.

MEMBER APOSTOLAKIS: Are you taking them -- Are you just eliminating the red, or, you're going down to --

MR. MILLER: We had -- The yellow is still out there. We still have the yellow.

MR. HOLIAN: At the bottom of the matrix

column, you'll see they go from multiple degraded to degraded, because you have a yellow open. But, at one point, you know --

UNIDENTIFIED SPEAKER: But, that was sort of a lucky break.

MR. HOLIAN: It was gratuitous in a way, that's right.

MEMBER APOSTOLAKIS: My question is, not whether another yellow occurred. Do you go from red to yellow or white?

MR. HOLIAN: No. You'd have to follow the action. I mean, we faced that early on. I mean, for columns, you do that. Now, you could do a deviation. Just to follow through on the logic here. At this point in 2003, we did do a deviation to the action matrix. As Hub mentioned, it was a minor deviation. But, we did look at seeing that they operated yellow, they were making progress. We had looked a couple of times through that year. We left it open for a final verification on recall results.

As we looked at it, we knew we had this white on control fire wall that had design issues. We did a deviation to the action matrix for one inspection and to continue some significant management meetings to track their performance indicators through

2003. We almost said, no matter what column you're in, we're still going to do some things here, management-wise. We're going to have you in to look at these performance indicators that we've been tracking for two years and, we want to see that continued progress go on.

And, in particular, on the white finding, I'm just going to branch to next, it's tracking, although it's a control fire wall and it's an isolated area, they're tracking multi-year efforts under Entergy now. They go back and re-verify circuit analysis and other things. And, so, we're going to take them through 2003 in a public forum and follow some of that progress.

MR. MILLER: Bill Shack just picked up on something that most people have not picked up on and, you said it was gratuitous that you have a finding there.

I think that we're making judgments and, we clearly made the judgment that we were not going to close that finding out in four weeks and had an additional five.

That yellow were not sitting out there, would we have cleared it even as early as we did? May, maybe not. And, so, there's an element of

judgment. We may have held it open just a bit longer, but, we knew we had it there. And, that's not -- That might sound like, you know that's some how inappropriate. But, I don't think it is. I think we're still having to use judgment in this program.

MEMBER APOSTOLAKIS: You leave it open as a red?

MR. HOLIAN: Yes.

MEMBER APOSTOLAKIS: It would never go down to a yellow.

MR. HOLIAN: It doesn't give you flexibility to go to yellow. We would have left it open as a red and given the reasons why we left it open.

MEMBER APOSTOLAKIS: So, that why it didn't work into the third quarter of '03, is --

MR. HOLIAN: That white is a new issue. It's a new issue. That was the control room fire wall right there.

MEMBER APOSTOLAKIS: The yellow go to white.

MR. HOLIAN: No. That's right. That's a new issue.

MEMBER APOSTOLAKIS: It's not the previous one.

MR. HOLIAN: That's right.

UNIDENTIFIED SPEAKER: That white is a new white.

MR. HOLIAN: That is a new white issue. It should track. You know, all four of those should go together on the same line, maybe, to make it more --

MR. MILLER: This was an issue that related to corrective action, to be sure. And, there's also an issue that related to design control and, an issue that we had seen roots of in all of these previous events. And, we knew that it was very important for the company to continue to invest the money that they're having to invest, to get a much better handle on the configuration of that plant than they had. And, so, we've held that open and, we'll hold that open to get a little bit more confidence that they're going to see that through with some quality.

So, there's still an arc in this. There's still aspects of this being an arc and, we shouldn't -- we shouldn't hide that fact.

MR. HOLIAN: Two items, just to follow on. Somebody asked what do the teams look at for human performance early on. One of the aspects, Wayne Schmidt did on his last problem identification resolution team was to have an open trailer down by

the waterfront and, you give an open time for any employee to come in to tell you, are you having any issues raising concerns. Are you discouraged from writing condition reports and that. So, that was an aspect that that team looked at on their own initiative, to sample. They sample employees left and right as they're going through the plant and, you ask for interview of people. But, this was an open time, advertised, even, in the newsletter. So, I wanted to bring that up.

One other item on this -- on this plant, you talk about human performance issues. They did it for fatality in July of 2002, with a contractor on site. You might have heard of that issue. Control of contractors has been an issue here. And, finally, at the end of the year in 2002, you've probably seen the press before, it's very public security issues that came out through the allegation process. It's still visibly in the press. One individual was on Sunday morning press with the chairman on this, this previous Sunday.

So, those issues took a lot of attention by the region. You don't see findings here. In general, those allegations were not substantiated. However, there were a couple of areas that were and

we've got public inspection reports on those issues.

MR. MILLER: I want to ask a question here. I'm anxious to have you be able to interact with the inspectors. Maybe what we can do, Brian, is just, on the next slide, just give them the real high level. You saw those clips. You read the news. You know how much on Indian Point is in there. The limelight has been crushing. The impact on the region and, maybe, that's the main --

MR. HOLIAN: Yeah. I didn't want to spend time on the charts, just to walk you through it. But, once again, that oversight, stakeholders. Obviously, very involved public up there, you've heard that River Keeper well financed group that continues to issue items, very much taking on reports, the track two reports, end of year report. They continue to put brochures out. The NRC said this. The NRC, how can you say this? Congress -- Statement counties, folks had a congresswoman at some of the meetings list a conditional report that says, reactor protection system is not white or bright. How can you say the plant's safe when somebody faxed me this to my office. Very visible issues that we've had to deal with up there.

MEMBER APOSTOLAKIS: I think the second

bullet should be special. I think two out of the three eminent --

MR. HOLIAN: Next slide. Once again, much interaction with what we call the technical coordination team. Early on in this process, we were asked by Union Christian Scientist, why didn't you put Indian Point 2 in the old 350 process, similar to what Davis Besse is in now. That is something that we looked at square in the face when they were replacing their steam generators in that lengthy eight month outage after the tube failure. For a while, you remember, they were going to operate with the old one, still. And, we were working with NRR that we looked very carefully up to re-start on that aspect and, what we needed.

At that point, we made this technical coordination team, involved a lot of people here. We still use it with formal meetings with the EDO rep and research and insert and NRR available as needed.

Once again, much still to come. We have had our own independent oversight. There's been two GAO reports, both on EP. There have been two IG reports, a very extensive one on the steam tube failure and, one just recently that took through a lot of this history and said, kind of, where was IP2 under

the salt process and that. We're tracking it well through the ROP and, it's a very good report. Brings up the corrective judgment system allegation that I just mentioned.

Next slide, please. Ongoing challenges from here. We do still have these cross-cutting issues that we have been tracking. Performance has been better. Site integration between Indian Point 2 and 3 is taking quite a bit of management's attention and, it is something that we're watching as it impacts both of those cross-cutting issues. I mentioned the design basis initiatives. And, finally, site security EP. Site security they do have a force on force exercise coming up that will get a lot of press here in the coming months. Emergency preparedness, you probably are aware that FEMA has that, but, is working very closely with us and, we anticipate some action by FEMA shortly.

MR. MILLER: We're not going to lie to you. You raised a question about what impact does a problem plant have on a region and, I will tell you that every person in this room has been touched in significant ways, as much as we have attempted to utilize schemes that try to wall people off and have a dedicated group and the like. This has consumed this region. And, it

is the sort of thing that, I think, that's known. I know it's known throughout the agency that when these kind of things occur, regions have to be given help. And, we have to step up and ask for it, certainly. But, I'm getting, right now, enormous help. The chairman, personally and, the commission, more and more. You've seen the current situation is something that certainly goes beyond what we can deal with, alone, here in the region. That's Indian Point.

This point, Wayne -- Need a break, or, just keep plowing through?

MEMBER SIEBER: Yeah. Why don't we take a -- Why don't we take ten minutes.

(Whereupon, a recess was taken.)

MR. LANNING: I have about 30 years with NRC. I was first at headquarters in a number of positions, most offices at headquarters. I've been in the region here for the last ten or 12 years.

In my presentation, I'm going to address some of the issues and challenges that were overcome in the inspection program in the region. Then, discuss some of the inspection findings that made a significant difference in improving licensee performance and overall safety.

We completed the -- We had an oversight

program at each of the 18 sites. This was a significant accomplishment. You're probably saying to yourselves, wasn't that the expectation? Well, the answer to that is yes. But, this effort required extraordinary efforts and respective sacrifices, to overcome a number of the challenges that we had to overcome in order to complete the program.

The most significant challenge is the scheduling and starting of inspections, which is a complex, multi-dimensional task. As background, each year, we plan and staff about 1,800 direct inspection hours at a single unit. This includes both resident and region-based hours. On average, for all plants in the region, we plan and staff about 30 team inspections, with a team of three or more inspectors. In addition, we license about a hundred operators a year, which requires another, about, 15 teams to complete that effort. And, those hours are not included in the baseline hours.

This year, because of the 9/11 event, we've had an additional 15 teams to do, the security hours. So, if you add all those up, we had to plan and schedule about a little more than one team a week in this region. Even with a stable number of qualified staff, this effort -- It's a huge task.

We've already talked about staff turnover and the most adverse impact to maintaining resident inspection coverage and, staffing of teams.

Randy showed you a slide of loss of resident inspector staff. What he didn't tell you was, when you lose one resident inspector, that results in a domino effect of at least three other changes in the staff, typically, five other staff changes and, it can be as many as seven, depending on where does staff come from, where does staff go, promotions and so forth.

But, the point is, when you lose or change 20 plus inspectors, resident inspectors in the region, it creates a crisis in planning and staffing of the inspection program and, when it's put in jeopardy, it won't get the program done.

We've already talked -- Back to my slide. We've already talked about external demands. I won't say anything more about that, but, just remind you that there's a significant cost associated with those external demands and, it directly impacts our ability to get the inspection program done.

We've already talked about the additional impacts to the region due to the -- to a plant in degraded cornerstone. Not all regions have a plant in

multi-degraded cornerstone. Another significant impact on our ability to complete the oversight program.

Another impact of the events of 9/11 was a security inspection program was changed completely. They've issues three orders now to reactor licensees. Associated with the first order is additional inspections to complete. And, those are not just limited to security inspectors. They include emergency preparedness and operations aspects. So, we need to identify staff to do those inspections, in addition to what we had already planned.

The implementation of the determination process are significant challenges we've gone through implementing the program. We'll say more about that later. Go in more details and provide some examples.

The following slide, significant events, the region response. Re-staff these reactor inspection teams with our best inspectors. Independent of what they were scheduled to inspect. But, nevertheless, we've had six of these this year already, special inspections. And, that presents an additional challenge to us to get the program done.

MEMBER ROSEN: Excuse me. How many plants are there and how many units are there?

MR. MILLER: Twenty-six units at 17 sites.

MEMBER ROSEN: And, you've got six special inspection teams.

MR. LANNING: Yes. Recently.

MR. MILLER: Seventeen. Are you talking about fiscal year or calendar year?

MEMBER ROSEN: Fiscal year.

MR. LANNING: I think you now have a good appreciation of the impact of staff turnover. I want to speak briefly on the coping measures that we had to take in order to deal with the transition of staff and, other of those demands on the program.

You asked earlier about out use of consultants or contractors. We did, for the past year, for example, we have used contractors primarily on engineering team inspections, safety system design inspection. We've used contractors on seven of nine of those inspections. So, that was one way that we coped for missing qualified inspectors.

We've gotten a lot of support from headquarters and other regions, that's been in terms of both staff and contractors. NRR oversees the support contract that provide us the contractors. We have expedited the basic qualifications of those inspectors. We've already talked about that somewhat.

The matter of fact is, by giving these people basically qualified earlier, they start immediately carrying some inspection.

We encourage staff to use overtime. Our overtime numbers significantly increased. We delayed inspections to cope. We delayed teams, spent one fiscal year into the next. And, a lot of that is based on the fact that we had hired a number of experienced staff in anticipating getting those staff qualified, so we could pick up the extra burden the following year.

Finally, we made very effective use of examiners. As part of that, we have been very successful in convincing all Region 1 licensees to develop their own initial operator licensing exams. That saves us about 400 hours per exam. And, because our inspectors are cross-qualified, in other words, they're also certified examiners and qualified inspectors, we were able to use some of those examiners in performing some of the inspections. And, they're particularly helpful in providing site coverage.

But, it wasn't always good, because the deregulation and consolidation, the new owners almost immediately scheduled additional operator training

classes and, they were larger, larger than what they had been with the prior owner. So, when you get a larger number of examinees, it requires additional staff effort and ...

Next slide. I think we've already covered this pretty well. What we've done in terms of hiring more staff than the budget calls for. Let me mention the fact that we reached out and rehired a retiree and, we're close to hiring a second one. The first one was both an examiner and inspector. The second one is a very experienced SRI team leader. So, that's -- that has certainly helped us cope for some of the challenges we face.

While we're on this slide, let me just stress just a little bit, you asked about skills and whether or not we track a member of staff after we needed to do the ROP program. Well, I'm passing around an update. And, we've been doing this for a number of years. And, what we've been doing is, we've been assessing what it takes to get the ROP done. We've been assessing what skills are needed. And, we've been comparing that and identifying various improvements based on the skills of the staff that we have. And, this is an evolving process and we've been doing this and, it helps us to anticipate losses, if

you will. Anticipate areas where we need additional expertise.

And, what you have there is, the first sheet is just talking about sort of how many we need internally and, that's just for the allocation of FTE among the branches in the division.

The next page talks about team inspections, more or less. How many FTE is required to do team inspections and which branches are coming from. We in DRS sort of rely on matrix organization. So, that's why you see the responsibility is distributed among several branches.

The third page there, we start talking about inspection activities to areas in the ROP. What we've done there is, is listed most of the areas in the ROP, how much DIE, FTE is required to do that inspection. How many staff needed to do it, how many we have. And, whether or not some of those staff will be eligible for retirement, either early, no, or late, within the next year. So, this helps us to staff, to manage and to make sure that we have enough qualified staff to do the reactor oversight program. But, you asked the question.

The next slide. We have overcome a number of challenges in implementing the SDP and, there are

still challenges. But, most of these challenges are included in the ongoing SDP improvement program. And, I'm sure we've gone over that and know what some of the areas are. And, there's been a number of problems in the SDP's for emergency preparedness, implementation and fire protection, but, we already know that.

What you probably don't know is that we in Region 1 have been a strong supporter of the changes to those SDP's. For example, me and Pete were on the forefront, because we had such a large number of EP findings. So, we've had a very important role in helping headquarters change the SDP's.

The SDP process is complex. You know, considerable efforts are needed to define the input parameters for doing a risk assessment. It's pretty to multiply those out in the end. But, it takes significant resources, both pedicel and risk wise to be able to define the inputs for doing the risk assessment. And, later on, we'll show you some examples of --

MEMBER SHACK: Are there some parts that you think work well? You know, when you say SDP, that covers a lot of ground.

MR. LANNING: I think, you know, to speak

boldly a second. The SDP processes work well. We've been able to assess the risk significance of --

MEMBER SHACK: Does it need more work?

MR. LANNING: Sure. This is Gene Cobey. He's one of the regional SRA's.

COURT REPORTER: Microphone, please.

MR. COBEY: The SDP is what Wayne is referring to, there's a brief there, phase 1, phase 2 and phase 3. In general, it's recognized that the significance termination process in this area has been effective, but, there are some challenges that have to be addressed. And, the area in which it's been most effective, which is the question I'm trying to answer here is, the phase 1 process. It's a screening process which is designed to separate the wheat from the shaft. Okay?

Ninety-five percent of inspection findings are screened out in the phase 1 process and, it does so appropriately and efficiently. The phase 1 process has been effective in the safety area.

For most of the discussion about complexity comes into play is when you transition from phase 1 into either phase 2 or phase 3. Okay? And, that is the area, really, that's the subject of this aspect of the discussion. Okay?

MR. LANNING: The risk assessments are assumption, you know, what assumptions you make, how you assess the success criteria, what's the root cause. All those things play an important part in doing the risk assessment. Inspectors, you know, the initial envision was the inspectors were able to be able to use the SDP on their own, to do their analysis.

But, what we're finding out is that they get two opportunities to do that, they're fewer and greater that we can find these to evaluate and, it's a type of process that you need to work through to be familiar with. So, what does that mean? It means that the SRA's are required to complete analysis on phase 2. And, we're doing that and, that seems to be working well.

As we go through the --

MEMBER ROSEN: That means, you take the residents out of the process.

MR. LANNING; No. Not at all. Not at all. The residents provide the technical part, if you will, for doing this risk assessment. They are -- They have the knowledge of the systems. They have knowledge of history, so forth and so on. They have an important role in doing this risk assessment.

MR. MILLER: They're also not neophytes when it comes to -- That's for the schools. They've had it and they can do it, it's just, can they do it alone. Can they, with authority, go through that process and --

MEMBER ROSEN: This guy can do it in a flash --

MR. LANNING: That's exactly right. They are not cut out of the process. Actually, it's done more in a mentoring role. I work closely with them. I provide them assistance and guidance and, they're certainly not cut out of the process. When we go through the next presentation on significant determination process, the case study of Salem, you'll see that both myself and Roy will keep you in the discussion. Roy was the team leader for the inspection. Okay? He was involved from the beginning, all the way through to the final dispensation and most of the risk work was done by --

MEMBER ROSEN: That will make sense.

MR. LANNING: As we go through the SDP process for assessing risk significance, we do gain insights from these PRA's. In addition, we benchmark our tools against the licensee PRA. And, we have identified shortcomings in their PRA's, such as some

of the laws they're are using, some of the theories they're using.

So, as a result, we know that there is a spectrum of quality in licensees' PRA's. And, we know that for those on the lower end of the spectrum, the weaker PRA's, it takes a lot more time to complete the risk assessment.

We were very influential -- I'd like to calim all the credit, but I know I can't do that. But, we were very influential in increasing the quality of one licensee's PRA in this region. Based on our comments as we did risk assessments of his findings and bench marking, this licensee expedited their efforts to redo their PRA.

UNIDENTIFIED SPEAKER: As a matter of fact, George, our recent letter on PRA quality, I don't think we put this in through that letter, as a reason why we thought the PRA quality should be improved, because it certainly facilitates the inspection and the assessment of significance. In other words, it makes the NRC's job more effective, more efficient.

MEMBER APOSTOLAKIS: Okay -- I --

UNIDENTIFIED SPEAKER: I don't think we called this one.

MR. LANNING: Okay. The next slide lists

a number of green findings we've had in the region in the last couple of years.

UNIDENTIFIED SPEAKER: Are you using any slougher models?

MR. LANNING: We do use slaugher models, yes.

UNIDENTIFIED SPEAKER: Do you find they've been satisfactory?

MR. LANNING: Yes. Yes. And, we can talk more about that in the round table this afternoon.

UNIDENTIFIED SPEAKER: In the next presentation, I'll talk about slaugh models. I will also answer any questions asked at the round table.

UNIDENTIFIED SPEAKER: I don't think this requires a lot of addition explanation. But, I do want to make the point that our SDP results have always been timely and have been challenged by the licensees.

MEMBER ROSEN: That's for this region, right?

UNIDENTIFIED SPEAKER: That's just for this reason.

MEMBER ROSEN: That's not necessarily true of the other regions.

UNIDENTIFIED SPEAKER: I don't know for

sure.

MR. MILLER: I think that -- One thing that's bothered me is the sense that some how it's bad for some change from the initial assessment and the final. And, I know you're not suggesting that I know, in fact, has come up from time to time, we've had one case, I think, there we've had -- at least one case, I know of, where we reduced the significance. In fact, I think that was in the EP area. But, we're open to the fact that these might change and we're trying to, from the very start on these, to come up with the right answer.

Erring, if we're going to err on the little of the side of, you know, firmness, if you will, but, I think it's dangerous to compare regions, because every case is different. And, how effective the licensees are working with the region, there are a whole lot of things that enter into this. And, I know people have tried to make this comparison, but, I think that's something you have to be real careful about. I'm proud of our SRA's and our technical staff. They've come to good answers and document their basis. And, there hasn't been a lot of argumentation, ultimately.

MR. LARKINS: This is different than what we heard last year. The main reason was that the

score models were not as complete, or, as inclusive as the licensees' PRA's.

MEMBER ROSEN: Last year we heard, when we were in Region 2, that the significance determination process phase 2 was taking an inordinate amount of time of residents and the SRA's and, that, in fact, it was having some impact on the willingness of inspectors to draw findings, if it was a marginal case. Because, they knew that they'd be chewed up in this process for months, or something.

MR. LANNING: It's still resource intensive. I mean, if I didn't make that point strong, I'll make it again. Applying the SDP is still resource intensive. I want you to get to the boundary conditions, but, also, to communicate to the licensee and resolve those issues and so forth. It's working.

I'm trying to cover time.

MEMBER ROSEN: Okay. I'd like to pose a question for the next question, because I want to talk about it.

MR. LANNING: Next slide. We'll talk about some of the more difficult inputs that we had to evaluate in order to do the risk assessment. And, I was, you know, more pass -- to go through these things. You've heard about -- It took us a

considerable time to establish the failure rate for the tube failure. And, also, complete the large release frequency assessment. We're going to get into experience. You get into is a leak uncovered and so forth. But, that took us a long time. I'm really simplifying this and trying to save some time.

But, those two problems alone, that took us months to arrive at an acceptable answer. And, we've had two significant diesel failures recently in Region 1. One is Seabrook, where you've had failure catastrophically. The other one at Salem and, Gene's going to talk about Salem a little bit more in detail. But, at Seabrook, the uncertainties and the -- and the duration of the exposure time, what the root cause for the failure was and, that fact that the failure occurred during an outage resulted in some significant challenges as to how we handle that. So, I think, also, Seabrook was one of the more contentious SDP results.

The previous chart showed that we had seven greater than green findings in emergency preparedness. Three of those involved the alert notification system, or, Sovriegns (ph), mixed among various things. Also, indicated that the EP, SDP was one of those that we've been on the forefront of,

trying to modify that. But, the generalized the basic problem with the SDP, initially was over-estimate the significance of the event. So, we had to work with headquarters to resolve that and make it more realistic.

In addition, the EP has additional challenge of coordinating with FEMA. FEMA has approved many of those alert notification systems. So, we had to do a lot of coordination with those issues.

Next slide talks about the fact that we in the region believe we have highly motivated staff and we have them focus on what's important to safety. I think we talked about most of those things already. And, I won't draw on those.

Let me just elaborate on the very last one a little bit. We place a very high priority, emphasis on continuing to develop our staff. This is such an important resource. You can view that a number of ways.

But, one that's really been very effective for us and really has increased staff capability is, we've provided this advanced SRA type, it's really PRA type training for inspectors. And, that gets into some statistics and so forth that they wouldn't get in

one week. And, we found that that's been -- that's paid back the time it's taken to train those folks in terms of being able to explain the risk and why it's important and, why we're focusing on such things. So, this is a footnote there.

Finally, I want to get to highlight some inspection findings. You know, these made a positive impact on safety. At Nine Mile Point, the inspectors identified a precursor involving the reactor building close (inaudible) system. They were -- They were effective in ensuring that the licensee took adequate corrective actions to ensure that the system could perform a safety function and, not become a transient initiator. Historically, this licensee had taxed the system, hadn't really looked at the recall condition. And, the inspectors logged down part of this system. This system is in the bottom dry well. Moderately high area. An area that's not frequently traveled. Inspectors did those.

MEMBER ROSEN: Why are we looking at these pictures?

MR. LANNING: I want to explain this in just a second. That's a system. That's a safety system you're looking at. That's the one we're talking about. Yes. Let's just go through those

pictures real quickly.

This is the piping, a threaded safety system. It was badly corroded. You know, we believe the information that this was broken, really, by bending the pipe in one's hand. It was that close to failure. Now, the failure of this system has been resolved in a loca (ph) in loss of high pressure ejection. It's a very significant event, if it occurs.

The second picture, this one here, this shows another view of the piping connection there. And, the third picture shows what the residents found after they did a walk down, after the licensee says, we've completed corrective actions. We've done the conditions. Everything's okay. They went back and found the system was leaking. They made a difference.

The residents found that they were doing preventive maintenance on the main steam isolation valves prior to doing the surveillance test, they were pre-conditioning, essentially. Consequently, the surveillance test could merely provide information. Another good finding.

We had a team there that found that -- this engineering inspection, that there was inadequate flow through some safety related tubes. Now, because

the finding was made in the wintertime, when the lake temperature was cold, the system remained operable. But, had this been found during the summertime, it would have been a much more significant finding.

Millstone -- I'll skip those two and add one. At TMI, we had an HP identified that the licensee had found floric acid in a fan cooler and they hadn't adequately dispositioned its source. We started asking questions and, as a result, the licensee took prompt action to characterize an unidentified leak in the container.

Now, what this show, not only did the inspector make a difference, but, it also showed that he, apparently, had learned a lesson, much better than this licensee had. Made a difference. And, there's -- We can go on and on about inspection results and what the inspections have found.

MEMBER ROSEN: Where was the leak at TMI?

MR. LANNING: Well, it turned out to be in a another part, a make-up part of the system. It was not from the head. But, it wasn't until the licensee would know that for sure. We could not rule out the fact that was not a leak to the head.

All right. I'm going to stop.

MEMBER LEITCH: Wait a minute. Nine Mile

Point number one, those pictures, it looks like it's scheduled 40 screw pipe. That's not normal.

MR. LANNING; You're right. That's not normal, but, that's what it was.

UNIDENTIFIED SPEAKER: Actually, that was one of the problems -- when you cut down the wall of the pipe and, then, they had a general erosion in it. It erodes through it. That was the source of the problem in the system.

UNIDENTIFIED SPEAKER: Why is it so corroded on the outside, leaking continuously?

UNIDENTIFIED SPEAKER: I suspect, it's the humid atmosphere and the fact that --

UNIDENTIFIED SPEAKER: It was cold water.

(Several people talking simultaneously.)

MR. MILLER: Where we are in the agenda right now is, that Gene Cobey's going to make a presentation on SDP and, the round table will follow that. But, what I want to do is, I want to step away along with my colleagues here from the table and, allow the staff to come forward who are involved in round table. They're sitting out there, we can flow right into Gene's presentation and, I think there may even be an opportunity to have the staff, as well, participate in that presentation.

MR. COBEY: Good afternoon. Today, the purpose of this presentation is to give you a perspective, if you will, of how typical issue is processed through inspections and all the way to completion to the characterization of the issue. Give you an idea of what is involved and the challenges that the staff facts.

Today, we're going to use the Salem Unit 1 catastrophic failure of the One Charlie (ph) Emergency unit generator turbo charger, to give you this perspective. It will be our case study example, if you will.

The specific discussion about the inspection will be given by the team leader, Mr. Roy Fuhmeister, to my left here. And, basically, Roy led the inspection team and was involved with the technical work all the way through this process that we already went through before. I'll turn it over to Roy now.

MR. FUHMEISTER: Okay. There's a -- There's a picture coming around and that picture shows the actual turbo charger mounted on the front end of the diesel generator. So, that's where it's located. This is a picture of the exit wound, if you will. The turbo charger air inlet is here and, this is the inlet

housing coming down from the roof. They have a red rubber wrapped around and strapped down with about a 12 inch diameter host clamp. The turbo charger compressor lost a blade. It came out through here, knocked of -- you can see the imprint here from the host clamp, knocked off the host clamp, impacted right here. And, this is a little pipe nipple sticking out. And, it knocked a half-inch pipe plug out of the threads as it came out.

Based upon the rotating speed and the diameter, we figure that this blade came out doing something just over 600 miles an hour. This is the blade lying on the floor where they found it, finally. It is precipitation of cast stainless steel alloy and, you can see the one corner is bent up here. This gives you an idea of how big that chunk of metal was coming out.

This is the compressor for the turbo charger. Here's where the blade came out and was fatigue fracture along the filler at the root of the blade. You can see that this is in two pieces. The lower portion is cast aluminum and, the upper portion is the cast stainless steel alloy. And, you can see here where the blade damaged several others as it was leaking.

MEMBER LEITCH: Step back, so we all can see.

MR. FUHMEISTER; You can see here several other blades that were impacted as it came out and, they're bent and twisted a little bit.

All right. The time line here, it started out in late August, early September of last year. The resident inspectors had a concern and they were fixing a fuel oil leak on the 1R cylinder, again. This was about the fourth time in five months, that they were repairing that fuel oil leak. And, that's where we really got started is, with that, we evaluated that through the manual chapter 8.3 process, which is how we determine -- it's a procedure that determines how we respond to an event.

The concern was that this engine may have been unable to perform its functions since April time frame and, that had the potential to be risk significant. And, when we went through the process, it told us we should be doing a special team inspection.

As we were getting ready for that inspection on Friday the 13th, surprisingly enough, the diesel generator failed during a surveillance test. Monday, the 16th, we reported on site. We were

on site for one week. We observed the activities of the licensee's root cause evaluation teams. They had two teams going. One for the turbo charger failure and, one for the fuel oil leak problem. We identified a number of issues and, we left at the end of a week, because we were actually getting ahead of their root cause team. We found that we were asking questions of their engineers before the root cause team and, root cause was getting kind of our left overs, if you will.

So, we came back to the region and waited for them to complete their root cause evaluations. The second one arrived in December of last year. We exited on the inspection on the end of January. We got the report out and we completed SDP evaluation and, finally, this past month, we got the final issue of the white finding.

MEMBER LEITCH: Roy, that was primarily due to the length of potential inoperability?

MR. FUHMEISTER Yes.

MEMBER LEITCH: The length of time?

MR. FUHMEISTER: Yes. The reason for the special inspection?

MEMBER LEITCH: Yeah. The reason for the white finding.

MR. FUHMEISTER: Actually, I'll go through

the characterization process in a moment. But, the initial characterization of the potential significance which led to the special inspection was due to the assumption that the diesel generator was incapable of doing its function from approximately April through September. We did a couple of sensitivity studies based on the assumption, whether it had just an increased higher failure rate, or, whether it was truly unavailable for that entire period of time. But, it all indicated that potential risk significance was higher than our threshold for doing reactor inspection. Because it was a repetitive failure, it met the criteria in our management directive to do a reactor inspection.

MEMBER LEITCH: But, that decision was based on the fuel oil --

MR. FUHMEISTER: Right.

MEMBER LEITCH: That was based on the fuel oil leak, not the subsequent turbo charger failure.

UNIDENTIFIED SPEAKER: This was added to the scope of the inspection because it occurred in the retesting phase, subsequent to the fuel oil.

MR. FUHMEISTER: We actually went back and modified our analysis to include turbo charger failure to see how it affected it and whether or not we needed

to raise the special inspection to higher level. Okay? And, we determined that the risk significance was higher than the diesel failure, but, it didn't warrant a further elevated reactor inspection, such as a ultimate team inspection.

UNIDENTIFIED SPEAKER: We fatigue these things to failure in our testing program, is that the idea?

MR. FUHMEISTER: I'm sorry?

UNIDENTIFIED SPEAKER: We see these things to failure in our testing program?

MR. FUHMEISTER: When we reported to the site on September 16th, the initial word from the licensee was that this was the first turbo charger failure and, by Friday, they had determined that there were four prior turbo charger failures in service. These are Alcoa diesel generators. These are the only Alcoa diesel generators in nuclear service in the United States of America, which have experienced failures of the turbo charger in service.

UNIDENTIFIED SPEAKER: That is not the only Alcoa --

MR. FUHMEISTER: They're not the only Alcoa diesels in nuclear service, but, the only ones that have experienced turbo charger failures.

UNIDENTIFIED SPEAKER: They're also a unique design for the turbo charger standpoint.

MR. FUHMEISTER: They're the only Alcoa engines using this particular turbo charger model.

After the 1998 failure, they had a failure on blading on the turbine end of the turbo charger that was determined to be the result of reverse engineer blades provided someone other than the original supplier. That was determined to be a vibration induced fatigue failure and, they decided after that, that they would take vibration readings and track the vibration on the turbo chargers.

Unfortunately, they never established a common operating point to take the readings at. So, any time they ran the engine, they went out and took turbo charger vibration readings. So, since the readings were taken at different engine loads, you couldn't compare the data.

UNIDENTIFIED SPEAKER: Different speeds.

MR. FUHMEISTER: It provides different speeds on the turbo charger at different loads.

MEMBER SIEBER: I take it, there is a resident of frequency somewhere in the operating phase.

MR. FUHMEISTER: At normal full power, this

turbo charger turns about 17,000 RPM. With the engine at idle, they figure somewhere around 2,000. During the 110 percent overload run, the turbo charger is turning about 19,000 RPM. So, it will change the vibration significantly, depending upon the engine load.

We started looking back through the history. We found that after the 1990 failure, the 1990 failure was attributed to fatigue and it was a failure on the compressor end. After that failure, they decided that they would, every four refueling cycles, take the turbo charger out and do non-destructive examination of the turbine and the compressor, to see if there was any indication of cracking. They wrote the procedure. They never scheduled or actually performed the procedure.

The subsequent failure was 12 years later and, that would have been four operating cycles on all of the engines. So, they never actually performed the corrective action that they planned.

MEMBER ROSEN: Why?

MR. FUHMEISTER: Part of it was because they changed the computer system for their work planning and scheduling and, it didn't get put in the new computer system.

MEMBER ROSEN: Why?

MR. FUHMEISTER: They still don't know. It fell off the end of the world, quite honestly. They lost it.

MEMBER ROSEN: How many other things have they lost?

MR. FUHMEISTER: Four that we've identified. Four that we have identified.

MEMBER ROSEN: If they don't know how they lost it, how many more activities did they -- have they lost? Can they provide us a certain percentage? Just a thought.

MR. FUHMEISTER: So, as a result, we came to a conclusion that the corrective actions for previous turbo charger failures had been ineffective at preventing additional subsequent failures. And, it's important that it's characterized that way, because we need something -- you need a performance issue before you can venture a significant determination process. So, depending upon how you characterize the issue makes a difference whether you can or can't do an SDP.

MR. COBEY: What Roy's alluding to is a subtle difference in the process that was referred to earlier. When you have an event such as Peach Bottom,

okay, had a trip, it was complicated by multiple equipment failures. Okay. We determined what the condition core damage probability for that event was and, if I remember, it was in the low, either minus six order of magnitude. Okay? But, the equipment problems that occurred, if there was a underlying performance deficiency associated therein, those underlying performance deficiencies were then independently processed through the SDP and their risk significance evaluated separately.

The SDP evaluation risk significance of performance deficiencies, whereas, management directive 8.3, if you will, goes to -- establishes a process by which we evaluate the significance of events. So, we, in this particular case, for Salem, initially coming in, we evaluated the significance of the event. Okay. We decided that a special inspection was warranted. As part of that special inspection, we had a charter task item to evaluate the significance of the condition, which we did. It just so happens that the performance deficiency in that particular case was directly linked to the underlying conditions, so, the end analysis was the same analysis, wherein, Peach Bottom, they were not. Okay?

So, we process on to the SDP. The

inspection staff has developed a performance deficiency and they engage the SRA's in the region. Basically, the first thing you have to do is, you have to take the performance deficiency and translate it into assumptions that can be used for the analysis. All right.

The first assumption is, why did the turbo charger fail? Well, it failed due to a fatigue failure of the inducer blade. Now, there's still a lot of uncertainty about what caused the fatigue failure, but, we do know a fatigue failure occurred. What we can assume is that the failure mode, since it was due to fatigue, was a later function of the cumulative run hours of the machine immediately prior to the failure. Okay? It's not a good assumption for the life of the machine, but, for the period of time immediately proceeding the failure, since the fatigue is a cyclic failure mode, that's roughly equivalent to the cumulative run hours.

From this assumption, we would deduce the period of time in which the diesel would not have fulfilled its mission. So, the next step is or we have to determine is, what is its mission? Well, the diesel generator's mission is to provide emergency AC and power given of off-site power. Okay? So, we have

to figure out, well, what's the mission time for the diesel?

The way in which we did that is, we used a methodology that's inherently built into the spar models. And, that methodology is, it takes each of the loop classes, plant center, grid related in severe weather and, determine what the recovery probability, the 95th percentile of recovery with a five percentile non-recovery is in time. So, for plant center at Salem, that would be about two and a half hours. For grid related, it's about six hours. And, for severe weather, it's about 85 hours.

And, then, it takes an infrequency weights those time periods based on the probability of each of those loop classes. And, that frequency weighted average is approximately 14 hours for Salem Station.

So, we said, okay, the diesel generator mission time is 14 hours. So, we know that the diesel would have to have run for 14 hours to fulfill its mission in PRA space. So, we have to determine now the period of time proceeding to the failure of which, if a loop were to have occurred, it would not have been able to perform its function or run for 14 hours.

MEMBER ROSEN: A hypothetical, not the worst. The average --

MR. COBEY: That's correct.

MEMBER ROSEN: The average.

MR. COBEY: The frequency weighted average, if you will.

MEMBER ROSEN: Which is not a real thing. It's fiction.

MR. COBEY: It's a PRA modeling technique.

MEMBER ROSEN: It's an analytical fiction, which is used to facilitate the analysis.

MR. COBEY: That is correct. It's, I guess, an inherent uncertainty built into that.

So, we actually looked at the run times of the machine immediately prior to the failure and, because of the recurring fuel oil leaks that we had actually initially gone out to look at, they have had multiple runs, about four runs in the ten days leading up to the failure, of various lengths of time. So, they accumulated 14 hours of operation on the machine in approximately 11 days leading up to the failure. That's atypical. Had they not had this performance issue associated with the fuel oil leaks, it would have been months prior that they would have accumulated the 14 hours of run time on the diesel by normal surveillance operation. Okay?

So, we determined that this 283 block of

time was the period in which, if a loop occurred, that the diesel generator would not have been capable of performing its function. And, lastly, our assumption was that because it was a catastrophic failure of the turbo charger, they would not have been able to recover that machine, if another loop occurred.

Is a screening process -- And that screened us to Phase II, because we determined that the diesel is not capable of fulfilling its function for greater than the tech spec allowed outage time for that machine, which is approximately 72 hours for the tech spec'd AOT. And the enclosure time was 283 hours. It kicks you to Phase II.

We performed a Phase II SDP evaluation of this using the SDP notebook, which has been revised recently. The benchmarking activity has been done. So we felt comfortable that that SDP notebook accurately reflected the operation of Salem. It indicated the risk significance of this finding was white, due to internal initiators.

In review of the benchmarking activities, we identified that the diesel generator was one of a few components at Salem that the notebook under estimates the risk of. So there is the potential, based on the benchmarking activities, that the risk

significance could have been yellow, due to this finding. So we decided that we needed to perform a Phase III evaluation of this condition, which we did.

So we used the NRC SPAR model, Rev. 3.02, which was a relatively recently issued revision to the SPAR model, to perform our Phase III analysis. And, George, hopefully, this will go a little bit to answering your question about how we use the SPAR model, because this is typical of how we do it.

And we ran a condition assessment, assuming the one Charley emergency diesel generator was not capable of fulfilling its function for 283 hours, using that model. We got the results from that model and we evaluated the results to determine whether they made sense.

In that process, we identified a number of things that we needed to address. The first thing was that the loss of off-site power initiating event frequencies and recovery probabilities were outdated. Okay. They were reflective of new rev. 1032 values, which have been updated over the past couple of years, most recently by new Reg. CR-5496, which is the new reg which evaluated loss of off-site power events from 1980 to 1996.

The conclusion reached in that new reg was

that these events occur less frequently than what was previously assumed; however, the recovery is much more protracted. Okay. So we modified the NRC SPAR model to include plant-specific data for Salem, from new Reg. 5496.

The second thing that we had to address was the rec cooling pump seal behavior. Salem, on three or four rec cooling pumps has low temperature O-rings in the seal packages, in the second stage. And according to the Rhodes (ph.) model, that this would result in failure of the seal package in approximately two to three hours, due to high temperature. The second stage would fail, you get high BP across the first stage, which would result in its failure, and the third stage, which is not a pressure retaining boundary, would ultimately fail.

So, if you did not recover AC power and provide cooling for the seal package within two hours, the certainty of the reactor cooling pump -- there is a certainty of the reactor cooling pump seal failure. So we updated the model to include the Rhodes model for reactor cooling pump seal failure.

MEMBER APOSTOLAKIS: Is that a diverse of your accepted model for a cooling pump seal failure?

MR. COBEY: NRC Office of Research

specified that the Rhodes model for Westinghouse pumps, actually, for all PW air pumps, is the one that we were going to use. These were Westinghouse pumps, so the Rhodes model, at this point in time, is the model that the NRC has endorsed. There's some question about whether it's appropriate for reactor cooling pumps with other seal packages, such as Byron Jackson, etc. But since we didn't have to deal with that, in this particular case, it was not an issue.

MEMBER ROSEN: And Salem has no capability of cooling seals with -- with a blackout?

MR. COBEY: Not at this particular time. They had actually installed a -- or after this failure, but between now and then, they've installed a cross-tie to the opposite unit, to allow the positive displacement charging pump to provide cooling to the seals.

What's interesting is they haven't incorporated it into the station blackout procedures, they've only incorporated it into the fire procedures. And there are some reasons behind that. So, even today, even though they have this cross-tie capability procedurally for a station blackout, they -- they don't use it. It would only be for a fire scenario that they need to cool the seal packages. And -- and

there's some reasons that they've identified, that they're reluctant to do that until they've finished their evaluation.

But, I think the answer to your question is, at the time, no.

MEMBER APOSTOLAKIS: Gene?

MR. COBEY: Yes, sir?

MEMBER APOSTOLAKIS: This was done on the basis of -- was it not?

MR. COBEY: Yes.

MEMBER APOSTOLAKIS: You had one going -- filing for the initiating frequency.

MR. COBEY: That is correct.

MEMBER APOSTOLAKIS: Okay. Now, if one could use themselves in this -- uncertainty, in the -- the failure of the initiating of -- so on -- a number like 8.64 -- to -6 could become -- to the -5, could it not?

MR. COBEY: Oh, most certainly. Absolutely.

MEMBER APOSTOLAKIS: Would they still be worried?

MR. COBEY: Well, you're -- you're raising a very interesting question and one I was going to get to a little bit later.

MEMBER APOSTOLAKIS: You will --

MR. COBEY: Okay. And, unfortunately, when -- when you talk about these things, we use point estimates, okay. Right now, our tools do not allow --

UNIDENTIFIED SPEAKER: Unfortunately.

MR. COBEY: Okay. Do not allow meaningful uncertainty analysis. It's beyond the capability of the tools. But from a -- from a theoretical --

MEMBER APOSTOLAKIS: Did you use SPAR --

MR. COBEY: Yes, I did.

MEMBER ROSEN: It's the SPAR tool you're talking about that you don't have --

MEMBER APOSTOLAKIS: So you don't have the capabilities --

MR. COBEY: As they currently exist, because not all the parameters in the SPARs have distributions. Some of them are only point values. And so you're somewhat mixing apples and oranges.

There -- it's my understanding that Research has on its list of things to do in the next fiscal year as part of the next iteration with the SPAR models is to address the uncertainty aspect.

But once you've got an analysis and you can do the uncertainty calculation as part of the SPAR model, then you have to determine how you're going to

implement the result. If you get a result, say, of 8.6, even/minus 6, per year, Delta CDF, with a 5th in the 95th percentile say at 7, even/minus 7 --

MEMBER ROSEN: Right.

MR. COBEY: -- to 2.4, even/minus 5, what are you doing to call it? Are you going to call it a yellow because at the 95th percentile, it was in the yellow, or are you going to call it white. So there is a lot of --

MEMBER ROSEN: It's not up to us to tell you what to call it. It's up to you to tell us what to -- what to call it.

MR. COBEY: Exactly. Exactly, so, I'm --

MEMBER ROSEN: In other words, you're supposed to assess the uncertainty and factor it into your decision.

MR. COBEY: You're exactly right.

MEMBER APOSTOLAKIS: Let's not forget, though, that the mean may move. You are not going to get the same mean.

MR. COBEY: Oh, exactly right.

MEMBER ROSEN: That's right.

MEMBER APOSTOLAKIS: So the mean, itself, can be above the 10 to the -5, in which case, both of you have a good argument to saying that it's yellow.

But, in the other case, where you have, say, 15 percent mobility, that it's in the yellow region, then -- but, you know, the thing, today, though, has been that we don't want any formulas. We don't want any rules to give them. It's really the judgment of experts that decides, you know. And I think that's what they would have to do, to consider, you know, what the whole thing means and whether it's appropriate to take action.

MEMBER ROSEN: What you're going to have to do when you do that is consider the sources of the uncertainty.

MEMBER APOSTOLAKIS: The source, yeah --

MEMBER ROSEN: And make the judgment based upon your beliefs.

MEMBER APOSTOLAKIS: Exactly.

MEMBER ROSEN: You know, about the uncertainties, individual uncertainties --

MEMBER APOSTOLAKIS: Exactly.

MEMBER ROSEN: -- that add -- that roll up to the answer.

MEMBER APOSTOLAKIS: It seems to me that we, yeah, we were remiss in that part of -- the SDP depends a lot on this --

MEMBER ROSEN: This is where the agency --

MEMBER APOSTOLAKIS: -- but I understand you're getting rebuttal, so --

MEMBER ROSEN: So you need me to write a refile? Shall we write a revision to the letter?

MEMBER APOSTOLAKIS: Huh?

MEMBER ROSEN: Write an addendum to the letter.

MEMBER SHACK: I don't think so.

(Simultaneous speech)

MR. COBEY: This is -- this is based on 1174, George, the comparison is with the mean.

MEMBER APOSTOLAKIS: Yeah, but the mean, itself, can be moved.

MR. COBEY: Well, he has to find the mean. But, I mean, if he has the distribution, he can find the mean.

MEMBER APOSTOLAKIS: But I think, also, Gene is raising an interesting question. What if you have a significant part of the distribution --

MR. COBEY: Correct.

MEMBER APOSTOLAKIS: -- about the 10 to the -5, I mean, you have to discuss it.

MR. COBEY: That's right. You have to -- I think you have to provide that.

MEMBER ROSEN: It's true, it's true.

MEMBER APOSTOLAKIS: -- included in the decision making process. It's never --

UNIDENTIFIED SPEAKER: Yes, that's true.

MEMBER APOSTOLAKIS: -- let's do that.

MEMBER ROSEN: If you do an integrated decision process, you eventually discuss the sources of -- before you make the decision.

MEMBER APOSTOLAKIS: Which they're already doing in more cases, I mean --

MR. COBEY: Yeah. And we actually -- we actually did a little bit of discussion on certainty and I'll get into how we dealt with that a little bit later.

MEMBER ROSEN: Gene, while you were doing the fumbling around in the licensee's PRA, I mean with the PRA, wasn't the licensee telling you what the answer was?

MR. COBEY: Actually, in this particular case, I'll -- this licensee is a little bit unique. They take a position that the SDP is the NRC process. They're not going to do their own evaluation. Okay. And what they did do was they responded to each of my questions. And I attempted to engage a utility to make sure that I had the right risk contributors to the right reasons, okay. Were my sequences valid?

Were my cut sets meaningful, etc.? And they provided me feedback. However, they did not do their own analysis for me to review, to risk inform me -- my analysis. Okay.

UNIDENTIFIED SPEAKER: Do they have a PRA?

MR. COBEY: Yes, they do. And --

UNIDENTIFIED SPEAKER: Oh, that's the --

MR. COBEY: Let's say, when I get to this next bullet, I think you'll see a --

MR. MILLER: I have to interject one thing, because, if this -- that's true, what Gene said, those are strong statements, that they chose not to do their own PRA.

Management spoke to us, spoke to me, personally, the highest level of recently, and I -- I think that, to be careful here, that may not be their current approach. But -- continue to be their approach.

MR. COBEY: I don't think they'd be happy with the outcome of this case.

MR. MILLER: Okay, defaulting to us and not being active in this.

MR. COBEY: So one of the things that we found, when we started looking at our results, were our emergency AC power success criteria in the SPAR

model was they needed two of the three emergency diesel generators to be successful for providing emergency AC power, given the loss of off-site power event. And that was predicated --

MEMBER ROSEN: Excuse me. Excuse me. Doesn't that violate the single -- criteria?

UNIDENTIFIED SPEAKER: They have three.

MR. COBEY: No, any -- they require --

MEMBER ROSEN: -- two of three pieces?

MR. COBEY: Two of three. They had three. Their buses are incrementrically loaded. But they -- their EDG (ph.) success criteria, as well as ours, was that they needed any two to be successful.

MEMBER ROSEN: I didn't realize they had three. Okay, fine.

MR. COBEY: Excuse me. So, we were getting station blackout sequences at a much higher frequency than what the utility found to be acceptable. And they -- they were under the belief that even though that is what their model reflected as well, that they needed two of three emergency diesel generators for success, they though in LOOP cases, or loss of off-site power cases, they really only needed one. And the reason is because that success criteria is predicated on needing service -- two service water

pump trains to provide adequate cooling.

Well, in a loss of off-site power event, they only need one service water pump train to provide cooling, if they get isolation of the non-essential service water loads from the essential service water loads. Well, because of the asymmetrical loading of the buses, they either need the Bravo train or the Alpha and Charley train to get that automatic isolation.

So we modified the success criteria in our model to say they needed either the Bravo or the Alpha and the Charley emergency diesel generators to be successful, given a LOOP, rather than just any two diesels. Okay. And that did make a fair significance.

Well, needless to say, that was indicative of their PRA. That was the level of their PRA. They had found previously that level of detail to be acceptable, just the most conservative, any two of three, until it was not in their benefit. But they never have gone back and revised their PRA, by the way.

So they were -- that yielded a result of approximately 8.6, even/minus 6 per year, Delta CDF, for internal initiating events.

So the next phase in the SDP process is to evaluate the contribution to external initiators. And this is quite a bit more difficult to do because of the relative lack of information compared to internal initiators. And the way we did this is we started with seismic. Because the performance deficiency involved the emergency use generators, the initiator of concern is a seismically induced LOOP, or loss of off-site power.

Well, actually, this is one of the first seismic induced initiators of concern, because the insulators in the switch yard are -- have the lowest HIP (ph.) book value, if you will.

However, we determined that for the Salem station, due to its location, the likelihood of a seismically induced LOOP was approximately three orders of magnitude lower than the likelihood of a randomly occurring LOOP for the Salem stations. So we screened that issue out qualitatively because, while it was a contributor, it was about three orders of magnitude less of a contributor than internal initiating events.

So we moved on to high winds, floods, and other external initiators, and used a similar argument. There are high winds, floods, other

initiators, which ca induce LOOPs, but their likelihood is more than four -- four orders of magnitude less than a randomly occurring LOOP. Therefore, they were not significant.

Then we moved on to fire events. Initially, the licensee indicated that there were no -- no fire induced loss of off-site power scenarios at the Salem station. This was documented in their IP-EEE submittal to the NRC.

One thing that we identified shortly after they gave that information to us was that they had done an evaluation in June of 2002 to support a fire route removal project, which had concluded that there were nine fire zones in their station that had fire induced LOOP scenarios. Okay.

That information had not been translated from the engineering group that performed the evaluation to the risk staff, who could have incorporated it into their risk analyses tools. So the engineers or PRA staff were unaware of that information, until we raised it to their attention. So they had no input, if you will, as to the risk contribution due to fire -- these fire scenarios and these fire events.

We attempted to pursue it, but they did

not have the information by which we could do the evaluation, mitigates system, equipment cable routing, frequency of the fires in that particular area, severity factors, etc.

So, what we were able to determine is, qualitatively, these fire scenarios were a contributor. How much, we didn't know. It was uncertain in an upward direction.

So, at this point, we've concluded that internal initiators are approximately 8.6, even/minus 6 per year, an increase in core damage frequency, and fire events are a significant contributor, but we do not know how much.

The next step is to evaluate large early release frequency. The Salem station has a large dry containment. And for large dry containments, the initiators are a concern for large early release frequency or inner system locus (ph.) steam generator tube rupture. Because for findings associated with the emergency diesel generator or loss of off-site power scenarios, LERF was not a contributor, and we were able to qualitatively screen large early release frequency out.

So that leads us to our conclusion. What we did to establish our conclusion is we went through

each of the input assumptions and we did sensitivity studies. We evaluated the impact of including the -- the more recent new Reg. 5496 data for loss of off-site power initiating VEN (ph.) frequency and LOOP non-recover failure probability, determined what the impact was there.

We determined what the impact was associated with including the Rhodes model. When we went through each of the assumptions, we evaluated each assumption by changing the parameter to gain a sensitivity for how large a shift you would see in the mean --

MEMBER SHACK: What was the alternative to the Rhodes model for the leak sealing -- seal leak?

MR. COBEY: There was a -- a built-in assumption in the SPAR model. It's based on old data, and it was a previous -- that I think they assumed the failure rate of .2 and .8, if I remember correctly. And we could have -- and we just went with base for our model evaluation in that case.

In this particular issue, the licensee had the same Rhodes model values in their model, because they recognized that three of the four pumps had low temperature O-rings.

The licensee had also asserted that they

should get recovery credit to manually isolate the service water valves in the event that they only had, say, the Alpha diesel available, that the operator could go out and shut the other valve that would be power to the Charley diesel or the Bravo diesel manually.

We chose not to give them that credit in the analysis for a number of reasons. We didn't feel that the -- their chance of success was likely at all. But we did a sensitivity study to determine what would be the impact, if we did give them credit. And what we found was that the -- by manipulating each one of these parameters, the mean range, if you will, shifted from about 70, even/minus 7 per year, on the low end, to almost 2, even/minus 5 per year on the high end. Okay. And then with most of them all being in the lower direction, low even/minus 6.

And then we said, well, on top of that, we have this uncertainty associated with the fire, okay, that's going to shift it up. Well, what do we know? New Reg. 6544, which was done as a study to inform the ASP (ph.) program about external initiators, has indicated that the risk contribution due to fire events is roughly on par with other internal initiators for this type of scenario.

So, if we looked at all of those things in balance, those sensitivity studies, and applied our best judgment, we thought that a white characterization of this finding was most appropriate. And that's what we concluded.

MEMBER ROSEN: What if -- what if you were going to recharacterize it, you would recharacterize it higher, rather than lower, am I correct, in what you say? If it were to be recharacterized based on some of the things that are excluded and the uncertainties?

MR. COBEY: No. We actually included that as part of our decision making process, when we did conclude white. We felt that given the uncertainties, when we went through each one of them and looked at them, that with the exception of the fire, most of the other uncertainties were in the downward direction.

The only one which you could argue was in the upward direction was not giving them the credit for the diesel generator modified success criteria and saying they just needed two of three, which we felt was overly conservative. And we felt that what we ended up giving them was reasonable. And but we went ahead and left it at -- in the sensitivity study of needing any two, and that's what gave us the low

yellow characterization.

So when we looked at each one of those and tried to put them in perspective and establish confidence on each assumption, we came up strongly in the white characterization and we felt that that was appropriate. That's how we went forward and that's how we dealt with uncertainty in this case, given our lack of ability to -- to deal with it in a quantified manner.

So what's that tell us? Well, as Wayne indicated earlier, we have challenges when we implement the SDP process. This is a typical case, okay. It's not indicative of all cases, but it's typical.

The typical challenges we see are characterization of performance deficiencies. This starts with the inspector. They have to not only just identify a violation, if you will, but they have to put that violation in context and determine what the consequences of that violation are, so that it can then be translated into, if you will, as assumptions in to the risk analysis, which ultimately characterize the significance of a performance deficiency. Okay, that is the charge of the inspection staff, okay.

And the inspection staff is, you know,

works very hard at trying to do that. That's where I, if you will, provide assistance and help --

MEMBER SHACK: Now, he has to do that even for the I analysis?

MR. COBEY: That's correct. That's right. And in the old process, pre-ROP when you had enforcement, you'd have to -- you had a violation, you went to a supplement in the enforcement policy, it was Severity Level I, II, III, or IV. Okay. You just can't stop there now. You have to determine, okay, I'm this violation, what does it mean? Does it mean I have a loss of safety function? If so, under what conditions, etc.? So that they can then be evaluated. Okay, so that's a challenge for the inspection staff.

The second thing is, given that, you have to establish --

MEMBER SHACK: Well, did you ever do one where you gave it to three inspectors and found out they did the I analysis, we all got the same answer?

MR. COBEY: Where they would -- where they would establish different consequences?

MEMBER SHACK: Well, they would -- the characterization, the performance deficiency, I assume, if you had the same characterization or the performance deficiency, you get the same answer, I was

sort of figuring, whether you --

MR. COBEY: Actually, I've never done that as a trial. But what we've done in Region One, to try and establish some commonality consensus is all inspection findings that are green or above, even if there's green in Phase I, go through the SRA. So that's a Region One, PRS policy, and that's to establish consistency within the division. And I know some of the other regions don't do that, but we do that because we think it improves our process.

MEMBER SHACK: Thank you.

MR. COBEY: And it also mentors and helps raise the level of performance, if you will, of the inspection staff.

MEMBER SHACK: Well, what's -- what's the frequency then of false negatives in the -- in the Phase I screening?

MR. COBEY: False negative?

MEMBER SHACK: You call it green and it really isn't. I guess it's not -- it's very difficult to tell since you have so damn few higher than green anyway.

MR. COBEY: I wouldn't say that we have the information to say.

MEMBER SHACK: Yeah. You'd be sitting

here for a long time before you'd know that.

MR. COBEY: We actually, in this region, do have an example where we had different people do it and came up with similar results. With the -- .2 control room wall a year ago, Jim Trappe was a senior act RENOS (ph.) at the time, and he and I both did an SDP analysis on that wall, using the fire protection SDP. We used a little bit different assumptions and boundary conditions and we both came up with similar results.

MR. TRAPPE: And Phase I is a fairly simple -- what is it, greater than the LCO and less than the ICO, so it's very unlikely that you'd have any -- any differences in the people coming in.

MR. COBEY: Assuming you had the same performance deficiency going in.

MR. TRAPPE: Right, yeah.

MR. COBEY: And that's the difficult -- that's the challenge.

UNIDENTIFIED SPEAKER: You've got, I think, a different event, that's why you'd quite likely come up with a different --

MR. COBEY: The next area that's a significant challenge is quality of NRC and licensee PRA tools. Okay, this goes to SPAR models. The SPAR

models are getting better. They're much -- these rev. 3.01, 3.02 models are much better than the 3-I models which are light years above the rev. 2 models. But there are still issues with them.

Okay, we use them every day. Most of, in the past, they were recognized as being used for ASP analysis, for those type of purposes. But in the regions, we use them everyday to evaluate the significance of findings and to evaluate events that occur at the plant, to determine whether or not we need to respond -- inspection in accordance with our management directives. So quality of NRC tools is very important to us.

UNIDENTIFIED SPEAKER: Now, do you have a 3.01/3.02 model for every one of your plants?

MR. COBEY: No, I do not.

UNIDENTIFIED SPEAKER: You don't.

MR. COBEY: I have those for about half the plants in the region and the rest are 3-I's. And I expect by the end of this calendar year that I should have 3.01 or 3.02 models for all the plants in the region. It's my understanding also that in next fiscal year, Research is going to be starting a project for the next iteration of SPAR models, but what's going to be budgeted and how much is going to

be within the scope has yet to be determined. We're -- we're lobbying, of course, for as much as we can get.

The second piece of this is licensee PRA tools. Because this is not -- you can't go into a silo, and sit down with a SPAR model, and come up with a risk result, and want to take it to the bank. What you want to do or what I want to do is I want to compare it against the results of the utilities model, which should be more detailed, more complete, compare the results and see if I get similar results for the right reasons or the same reasons.

If so, then I have a higher degree of confidence that the characterization is appropriate. If not, I need to understand why the differences exist.

And, quite frankly, every -- for every time the SPAR model has an inadequacy, I find that usually there's one found in the licensee's model. So we have a concern that while we have a PRA quality or spectrum of PRA quality in this region, we have some that are better than others, even the ones that are better, you know, when you go through reviewing cut sets, as you would in this type of evaluation, you find issues.

So this is an ongoing issue for us, quality of PRA tools.

The next bullet is lack of tools to evaluate the risk significance of external issues. This is a major issue for us. In the significance determination process, we're required to evaluate the risk contribution to the external initiators. Yet, most facilities in this region, we have a few that have fire PRA's and -- PRA's, but they're -- they're the minority, you know.

Region Four has more facilities that have this, at Diablo, Psalms (ph.), or the testing South Texas project, etc. Okay. In Region One, most of our facilities do not have this level of information.

And so when we get to evaluating the significance of these type of issues, we don't have internally good tools and the licensee doesn't have good tools, either.

The next bullet is treatment of uncertainty in SDP risk analysis. We alluded to that, earlier.

And, lastly, is this bullet about licensee support for the SDP process. We've done a number of these evaluations in this region and the timeliness and the effectiveness of the process is significantly

driven by the cooperation, if you will, of the involved utility. Because it is a -- it is an effort that involves the input from the utility to effectively get through the process in a timely manner.

A lot of the times, it involves engineering calculations on their part to validate changes to their models, etc., testing, take a -- take a condition that existed, while it did meet design, well, what would it really work. So they take it out to a lab and test it, and they provide you those results.

That type of cooperation and how well they provide that information significantly affects the timeliness and effectiveness of our SDP evaluation of the condition.

And I guess that's all I had prepared. I'm certainly prepared to answer any questions that you'd like to ask.

MR. ROGGE: All right. I guess we're ready to move into the roundtable. The roundtable participants fill in the holes that's left -- we were thinking we would start with some brief introductions so you know who we were -- and we've arranged on the way to the bus for you to stop -- by the way, to start

the introductions, I'm John Rogge, currently the Acting Deputy Director advisal -- Deputy Director of -- I work for Randy Blough -- the agency reporting two years, prior to that five years -- half my time has been in Region Two and half in Region One.

In Region Two, I was senior resident -- Jim?

MR. LINVILLE: I'm Jim Linville, Chief of the Electrical Branch in Region One. I have oversight of matters of electrical, also fire protection, meter inspections. I've been in the region 23 years. The last couple, in the Division of Reactor Safety. Twenty years before that, I was a senior resident -- inspector and branch chief in the Projects division, had most of the plants in the region at one time or another. Before that, I worked for a couple of years for an architectural engineer and was in the Navy for a number of years before that.

UNIDENTIFIED SPEAKER: One thing I'd like to add relative to this Salem case study we just presented on the white finding, in a way, that was kind of confirmatory of our previous concerns that were -- that lower threshold relative to performance, particularly relative to the corrective action program.

It so happens the very week that Roy's team was there, I had another inspector there doing a follow up or a 95001 supplemental inspection to a white PI for a number of down power transits, which followed on the heels of a previous one for a number of trips at the other unit at Salem.

And also, at the same time, Roy was embroiled in doing an extensive SDP evaluation of relative to that fire protection issue that had to do with a fire wrap cross-tie, which is a long-standing fire protection issue there. And after an extensive analysis, that issue turned out to be green, relative to the operability of their CO2 systems.

But all of those had the current corrective action issues associated with them. So, at the end of the year, we had a significant cross-cutting issue, because of these recurrent corrective action issues. And we were in the process of developing this, when it didn't come until later where they actually had a white finding, the issue -- this year and actually put them in the singulatory response column.

But we had a lot of indications of, you know, the --

MS. WALKER: I'm Tracy Walker. I'm the

Communications Coordinator for Region One. I have about 21 years experience in the industry. I was in the shipyard for about 4 1/2 years as a shift test engineer, and then I've been in the region for about 16 1/2 years, most of that time as an operator licensee examiner. I've spent some time in enforcement. And, most recently, I've been in the Division of Reactor Safety, mostly doing fire protection inspections. I'm also one of the people that did go through the advanced PRA training.

So one of the points that I wanted to make, following up on some of the things you talked about, is the importance of the characterization of the performance deficiencies. We've talked about it in detail with respect to how it impacts the SDP process, but also when we were talking about Indian Point (ph.) and how we were characterizing the Red, you know, the issues that led to the Red finding -- it's a key part of our assessment process on how we characterize those performance deficiencies at the individual finding level and then as we work up through and were assessing those things, that we have a good handle on what that is and what we're assessing, so that we know how to quantify its -- determine its significance and also how -- how we're

going to follow up on it, when we're going to decide the licensee's made sufficient progress and back off a little bit.

MR. PINDALE: I'm Steve Pindale. I work in DRS, okay. And I've been with the NRC for about 19 years. Last five, I've been in DRS, in meeting and participating in PIR inspections, that's the problem identification and resolution problems, and the design inspections. And prior to that, I was in DR key (ph.), and I worked in various sites as -- in the resident inspector program -- Beaver Valley and all the plants in New Jersey.

MR. SCHMIDT: I'm Wayne Schmidt. I'm the other SRA in Region One, along with Gene. We work in DRS. I've got 23 years experience in the industry, as a shift test engineer for about 6 years. After that, I was in the resident program for 14 years as a senior resident inspector. And I've been in DRS here for three years, leading team inspections mostly.

And I had the -- the honor, I guess, if you will, of being on the team that identified the Red finding, and also leading the team that closed the Red finding at Indian Point. So that was one -- one thing here was consistency. You know, we had the residents all the time, but we also had consistency within the

region here, within DRS, to understand the issues there, and get them addressed, and get them closed.

MR. FUHMEISTER: I'm Roy Fuhmeister. I'm a senior reactor inspector in the Electrical Branch. I spent 28 years now in power plants. I spent five years in a Navy nuclear power program. I spent a couple of years as a start-up test engineer, at a commercial reactor construction site. And next month, I'll have 18 years in the Nuclear Regulatory Commission.

I've been a region-based inspector. I have been a construction resident inspector. I've been an operations resident inspector. And I did a short stint as the allegation coordinator for Region One.

The last couple of years and throughout almost the entire ROP, I've been very heavily involved in the fire protection inspection program. I am right now involved also with the fire protection SDP rewrite project, working with the scenario development group.

And the one point that I wanted to make is that the significant determination process is not a plug and chug. You can't just open it and get the result. You have to apply it with a certain amount of reasonableness, and you have to be realistic when you

use it.

MR. BLOUGH: I'm Randy Blough, previously introduced. On his way out the door, I handed George something he had asked for, which is some copies of sample assessment letters that deal with cross-cutting issues. And I also included a couple that Seabrook special team inspection report cover letters that led up to that. And they're marked in the margin with -- Steve, you may be interested in this, based on questions you were asking -- how we characterize the actual issue within the cross-cutting harrier (ph.). So I have copies for the rest of you of those.

UNIDENTIFIED SPEAKER: Thanks.

MR. LORSON: I'm Ray Lorson. I'm the Performance Engineering Branch -- the Division of Reactor Safety. My branch is involved with inspections in several areas, including the problem identification and resolution team inspections, the in-service inspections that we perform at -- outages, the -- inspections, and also maintenance rule inspections.

I've been with the NRC about 11 years. Prior to that, I was with the -- Rangers. Most of my time within the NRC has been as a resident inspector and as a senior resident inspector at several Region

One sites, including Salem and Seabrook. And I've been involved with some of the issues you've seen up on the display, today, including the diesel -- both Salem and Seabrook, also Indian Point --

MR. COBEY: Gene Cobey. I was introduced earlier. I didn't tell you what my background was. I have about 15 years of nuclear experience. I was a regional inspector in the Division of Reactor Safety in Region Three for several years doing engineering type inspections. I was a resident, then senior resident at three sites -- and I was a senior at Byron (ph.) station. I was a senior reactor analyst after that in the inspection program branch in NRR on one of the gains, if you will, for all the losses to NRR. I came out here about a year ago to fill an opening here in Region One.

As an SRA in Region One, reported to the Director of the Division of Reactor Safety. We provide technical assistance. We perform all the risk assessments of events and conditions in the region.

But one of our most important aspects is to, if you will, provide risk insights to management staff on how to risk inform the ROP at an inspection level, characterization level, and the decision making level.

To give you an example, one of the initiatives of the agency, the mitigating systems performance index, which is undergoing a pilot, I've been one of the two Region One representatives on that working group. I'd like to believe that I've heavily influenced that pilot.

So we are -- the SRA's are involved in a number of aspects of regional operations besides just characterizing the significance compliance. And if you have any questions on an SPI, I'll be glad to provide you my insights there.

UNIDENTIFIED SPEAKER: Following its development and with some interest.

MR. COBEY: I'm sorry?

UNIDENTIFIED SPEAKER: I say we're following its development with some interest.

MR. CRLENJAK: I'm Jack Crlenjak. I was previously introduced. I'm the Deputy Director of the Division of Reactor Safety. I've got about 33 years of experience in the industry, 6 years in the Navy, 3 years with industry also in the Navy programs, working for Westinghouse, and about 23 years with the NRC.

I've worked in both Regions Two and One. I've spent 17 after years in Region Two, some of that time as a senior resident in two different facilities

there. And also held management positions in both divisions in that region. And I've been here about six years now as a deputy director.

MR. WELLING: My name is Blake Welling. I'm resident inspector at Limerick. I've been with the agency eight years. Prior to Limerick, I was resident inspector at Peachbottom. And before the NRC, I worked as a shipyard engineer, submarine officer, and a nuclear safety assessor for DOE.

I'd be happy to provide any insights with regard to MSPI, mitigating system performance index. Limerick was one of the pilot plants for that -- that effort.

MR. HANSELL: Sam Hansell. I'm the senior res inspector of Susquehanna. I have 23 years -- 25 years nuclear experience, 13 with the NRC. I spent time in the US Navy at the power program, both an NRC licensed senior reactor operator and reactor operator at Little Creek generating station. I've been a resident inspector at Three Mile Island, Limerick, and also at Susquehanna. And I started my career in the region as an examiner DRS and also a DRS inspector.

I was on the Peachbottom special inspection team. I have some insights there, if you'd like. I can share those with you either now or later.

MR. TRAPPE: My name is Jim Trappe. And in keeping with the Indian Point 2 theme here, today, I worked at Indian Point 2 for ten years as an SRO. That was before they had the Red finding.

(Laughter.)

MR. TRAPPE: I've been here 15 years. And I currently -- I was an SRA, like Gene. Gene is my replacement. And I recently got promoted to be a branch chief. And I supervise the resident inspectors at Nine Mile Point.

And I would like to share something with you. We've got these pictures here, and I'm a little embarrassed because that's -- that's one of the plants I supervise the residents at, is Nine Mile Point. You can see water coming out of the lakes and that's not a good thing. And it's certainly not the first time it happened.

So one of the things we did after the event kind of cooled down a little bit is, is we said, you know, well, how did we miss this and why didn't we see this before? It, you know, it started leaking in May and then it leaked again in December -- they tried to start up, it leaked again in December and they had to shut down. So, you know, it had a long history -- and we went in and we did a self-assessment.

The residents did a self-assessment, said how did you miss this thing? And one of the things they said to me was, well, it was the reactor building closed cooling water. And those familiar with PWR are saying, well, that's not a very important system. And in those --

MEMBER ROSEN: Those familiar with what?

MR. TRAPPE: Reactor building closed cooling water. And typically at most PWR's, that's not a very important system, you know, it's not safety related. It really doesn't have a -- it cools the containment coolers, containment coolers, and then, you know, you might have to shut down if it doesn't work. But, but it's not a real safety issue.

And what we found through -- through Gene's work and -- digging into this system is, well, okay, if you lose the system and all the water empties out of it, you have five recert pumps, and the recert pump seals need this water to keep them cool, to keep them from rupturing. It's almost like a PWR issue now.

And what we didn't realize is that if the piping is sound, you have natural convection and the seals will keep cool, so the pumps don't have to run, but you've got to have the water in the pipes.

And what happened is these leaks are real low in the containment building, you don't have water in the pipes, the seals are going to rupture. And the problem with a Nine Mile Point -- of PWR is you have ISO condensers, which are the greatest invention ever, right? It's -- open up a valve and the ISO condensers work. But if you have a small Voca (ph.), the ISO condensers don't do you much -- you can't get the -- of the ISO condensers and the ISO condensers come out of the picture.

The other system that -- that you can inject into the core is the feed water system, so they have something called a high pressure cooling injection, which is really nothing -- nothing more than a feed water system. And lo and behold, the cooling system for the feed water pumps is -- this was the same system.

So now you lose the feed water pumps, you've got the leak, you've -- the leak -- system, and now you're kind of out of luck -- so one of the things that the residents found during their self-assessment was, hey, you know, these systems, some of these systems, we just need to be a little more risk informed. And we've done some corrective actions to make that happen, so --

MEMBER ROSEN: What do the licensee's PRA's say about that system?

MR. TRAPPE: The licensee's PRA, there was a lot of issues with the -- with the seal -- Gene can express that better, but --

MR. COBEY: We actually went through the same timeline process, if you will, with a different example, of course, with Nine Mile. We went through the same set of steps. When we interfaced with the utility, and that utility actually performed a risk analysis of this condition.

We disagreed with them on a couple of important assumptions. And as a result, we got different outcomes.

MEMBER ROSEN: You're going in a different direction. What I was asking does the licensee have a PRA?

MR. TRAPPE: Yes, it does.

MEMBER ROSEN: If it does, can it rank systems by their importance at the system level?

MR. TRAPPE: Yes. Yes.

MEMBER ROSEN: And if it did, did they have RBCCW high on the list?

MR. COBEY: Actually, no.

MEMBER ROSEN: To which question?

MR. COBEY: Yes for the first two and no for the latter. And the reason is, is because this isn't a failure mode that is within the PRA, the pass and failure of the piping system.

MR. TRAPPE: Pass and failures of pipe would have a very low frequency. You wouldn't expect this to happen. But now that the system looks like this, you start -- remember, PRA's are based on -- and design. The assumptions are is that the pipe isn't --

MEMBER ROSEN: No, no, no. If you say you're not going to take reactor vessel failure, that's a presumption, an assumption based on the fact of all the extensive things you do to preclude reactor vessel failure in the code, inspection, condition monitoring, etc., etc. The same thing applies to RBCCW. You say you're not going to get a failure in RBCCW --

MR. TRAPPE: But let's take -- if I look -- vessel failure frequency, I'm sure it's fairly low. Yet, the condition of Davis (ph.) -- vessel, it was probably somewhat understated. It would be the same analogy.

MEMBER ROSEN: Yeah.

MR. COBEY: Say it had to be CLC in their PRA, they had a -- role, they did not have this

particular failure mode captured within their PRA, okay? So when we included this particular failure mode in and evaluated the significance, they got a result that was just below the green light threshold. We got a result in the middle of the white order of magnitude. And the reason was a couple of difference in assumptions that we made.

But going into this, neither the NRC SPAR model, nor the licensee PRA, captured a failure mode of pass and failure of the system due to this chemistry problem and erosion problem within the reactor building closed cooling system.

MEMBER SHACK: And is that because it's screened out with the low frequency of the pipe --

MR. COBEY: Basically, a pass -- passive pipe failures typically have -- if you were to put them in, they would truncate out, anyway, so they don't get put in, in the first place, in most PRA's --

MR. TRAPPE: And we talked about PRA uncertainty, you know, and these kind of uncertainties really play into it. You can play with the numbers, but it's this kind of stuff that's really --

MEMBER ROSEN: George, who is gone, would say that's a model uncertainty.

MR. TRAPPE: Model uncertainty, yes.

MR. ROGGE: Okay. At this point, is there any questions you want to ask?

MEMBER LEITCH: I had a question about the cardock (ph.) system at Peachbottom. I guess a few months ago there was an accidental -- thank you. I had a question about the cardock system at Peachbottom. A few months ago, there was an accidental actuation in the diesel generator building. And I believe we were led to believe down there, yesterday, that -- that automatic -- that the cardock system had been taken out of automatic. It was still available for manual operation, but not automatic.

And they were compensating for that with -- with fire watches, roving fire watches. And I'm just wondering is that a common problem throughout the -- the industry and fire protection systems, is one question. And the other question really is what is the -- in the ROP, what is the licensee's motivation to make corrective actions to that system? How do we influence him to promptly make corrective actions, or do we? I don't know if that's in your area, Roy, or whoever wants to deal with it.

MR. FUHMEISTER: Actually, what we have found is most places we've looked at carbon dioxide suppression systems, we found problems. The -- there

is not a lot of impetus, really, to fix that. Millstone 3 has had their cable spreading room CO2 system locked out now for a little bit over four years. They've had compensatory actions. And a lot of them are now actually coming in with submittals to allow the operation of the system in a degraded mode, because it can serve the function of suppressing the fire until the brigade arrives to extinguish the fire.

Salem is in the process of writing that submittal right now, so that they can continue with their CO2 system in its degraded condition.

MR. HANSELL: That came -- at Peachbottom is the diesel's air intake comes from the room, itself.

UNIDENTIFIED SPEAKER: The room, itself, right.

MR. HANSELL: They have a cardock -- the diesel -- not going into the diesel, itself -- air intake for the engine is outside --

MEMBER LEITCH: But it does auto trip?

MR. HANSELL: Right.

MEMBER LEITCH: It would have auto tripped on a cardock's initiation.

MR. HANSELL: Yes. I think most -- take the air in from the outside assume that they can run -

-

MEMBER LEITCH: Yes.

MR. HANSELL: -- cardock initiation within itself still function okay.

MEMBER LEITCH: True.

MS. WALKER: To address the second part of your question about the motivation for the licensees to fix these systems?

MEMBER LEITCH: Right.

MS. WALKER: I think the fire protection area in the ROP, I think, is one of the areas that really has benefitted from the ROP. Where the fire protection area in the past, we were very limited by the licensee basis and what we could, you know, if a licensee put compensatory measures in place, they were -- they were following their tech specs or the fire protection program, there was little that we could do.

But now, with the ROP, and we can go in and if we can find a performance deficiency associated with the issue, and it's risk significant, which in a fire protection area, a lot of times these are, Millstone 3 is a good example. They were taking all the compensatory measures that -- that they're supposed to. But we actually found a problem with their compensatory measures.

Because that system was so risk significant in the fire area, we were able to, in effect, put some pressure on them to get those corrective actions taken.

MEMBER LEITCH: And that shows up as or could show up as an inspection finding then? I mean it's not a -- there's not --

MS. WALKER: Yeah, you know, it goes back to, you know, you have to have the performance deficiency for it to be an inspection finding. In the Millstone 3 case, the problem with the CO2 system, itself, didn't have a performance deficiency associated with it. We looked at it real hard, but it didn't.

But, we also looked at everything associated with that system, and that's what the ROP allows us to do.

MEMBER LEITCH: Yeah.

MS. WALKER: And in doing so, we did find a problem with their compensatory measures, and that they were -- that they needed to address it, and put some pressure on the licensee to keep it moving to get that done.

UNIDENTIFIED SPEAKER: There's one other piece to that is it's also a potential aspect they'd

be pulled into the cross-cutting area, in terms of problem identification and resolution, if they choose to live with a specific degradation for an extended period of time.

UNIDENTIFIED SPEAKER: Right.

UNIDENTIFIED SPEAKER: We may -- they may find that mentioned in their annual assessment letter as a -- as a significant cross-cutting issue. That might be one of the examples.

MEMBER LEITCH: Okay. Good, good.

MEMBER ROSEN: I promised to ask a quick -- this question to the resident from Peachbottom, yesterday, because he gave me his answer. And that question is what activity or activities, this is really to the, you know, the reactor inspectors, what activity or activities would you inspect to get a handle on safety -- you know, we just went through a new --

MR. PINDALE: I can address that from the problem identification inspection. When we do the biannual team inspection, that's a specific piece of the -- the inspection procedure. And it has, actually, there's a number of ways that we would look at it.

One is we look at the condition reports or

whatever the mechanism that reported that the licensee identifies problems with. We'll look at those, and we'll interview people that initiated them and -- and evaluated them, and get a feel for, in the interviews, how they feel about the safety culture. Are they reluctant to initiate a condition report? Is it well received by station management, and questions such like that, by the people that are involved in initiating and evaluating the condition reports.

And then another piece is that we look at the employee concerns program. And in there, we'll get a feel for the types of items that are evaluated or processed through the system, and try to assess actually why they're in there versus going through the -- the typical or normal program.

So it's a number of issues, including looking at paper, looking at different programs, and then kind of stepping back to try to evaluate if people are reluctant to initiate condition reports.

MEMBER ROSEN: Okay.

MR. SCHMIDT: And we -- we also get a portion of it by sitting in licensee meetings, just, you know, during team inspections, usually there's one or two person -- or one or two people a day that sits in on licensee meetings and listens to the way they

conduct meetings. And you can get a good sense for are they having a joint effect on the people during the day. And we do talk to a lot of people, that can't be understated.

Like I've mentioned, you know, just walking around the plant, we'll just kind of grab people and talk to them, and, you know, how are things going? That's a -- that's a great question to ask somebody. And they generally do open up and you get some good insight.

We did try something at Indian Point, I guess it was last summer. We kind of had it publicized in their -- in their internal newspaper, if you will, that the NRC would be willing to just, you know, if you had any questions about the NRC, if you had any issues and you wanted to talk to us. So we had some open time set up where people could just come down and talk to us, much the same as if we were the resident inspectors, but it was the team. So we had two or three people in an office, for a couple of hours a day, during the team, to -- to see if anybody came to talk to us.

And we did get some people coming to talk to us. And in most cases, that was -- it was kind of a positive feedback type thing.

MEMBER ROSEN: Any other answers --

MR. HANSELL: I had Susquehanna, Susquehanna from '99 to 2001, they've had the highest number of allegations in the region. We're top five in the country. So I set up the allegation program and inputs going into the program. We then compared the allegations to what the employees in the term program were saying.

Interestingly enough, the employees and supervisors coming to us with allegations had -- had a comment being, one, our employees concern program is not working, because it does not keep issues confidential.

Two, the issues that we go to with the employees concern program is getting right back to the same manager who we've initially voiced a concern and it wasn't dealt with barely.

And, three, a number of people raised an issue as far as being worried about intimidation, retribution, if they raised an issue within their own -- and they came to us in confidentiality.

So that's where we start and also look at any OI investigations. Again, at Susquehanna, there was a number of harassment issues, there's a long history there, so understand that history can give you

an idea of how -- how did the employees feel about the plant, their supervisors, their management, and then be able to deal accordingly with our inspection.

MEMBER ROSEN: Thank you. Anything else --

MR. FUHMEISTER: I like to look at --

MEMBER ROSEN: -- we haven't heard yet? Roy?

MR. FUHMEISTER: Okay. I like to look at their evaluations of deficiencies. If I see they are trying to pencil with it, you know, or trying to explain why it's okay, trying to justify everything, rather than saying, hey, this is a problem and it needs to be fixed, then I get concerned.

Also, if I go to a facility and they want one of their licensee people to sit in on every time I talk to one of the plant engineers or one of the workers, I get a little concerned.

MEMBER ROSEN: One of those sea lawyers, present to the -- extensive or oppressive presence of too many sea lawyers. Anything else?

MR. LORSON: Just a final comment. I think everything you heard were all facets of the program that are captured in our plant status module, and it basically requires the resident inspectors to

do a wide variety of activities, to kind of kick the tires of the plant, if you will. And I think Wayne hit on it when he talked about going to the meetings and just immersed in what's going on at the plant. And from that, you can draw pretty quickly a sense of where the safety culture is at a particular facility.

MR. WELLING: And typically residents within that plant status module will attend what's often a daily meeting, where plant management or some level of review goes on for condition reports, problem reports, anything that goes into the corrective action process. So we get a sense of what things are identified, the level, and the level of probing, at least within that initial disposition meeting, you know, trying to understand the issues and what approaches might be taken to get to the bottom of that.

MEMBER SIEBER: I guess the follow on and perhaps more important question to ask in this regard is what is hypothesized, that you get the feeling that there is a bad safety culture at a facility, that has not yet revealed itself in significant performance problems. So the question becomes what should the agency do, if anything? Any ideas?

MR. TRAPPE: I have my own, you know, view

on this. I've kind of bought into the -- a white finding, for me, is an extremely, an extremely low pressure. And I -- I put it in relative terms. At Calvert Cliffs, the CDF is approximately 10 to -4. A white finding can be low as 10 to -6. So that's almost equivalent to operating Calvert Cliffs from now till Friday.

MEMBER SIEBER: Right.

MR. TRAPPE: So if I'm really fearful of operating Calvert Cliffs from today till Friday, then I should equally be concerned over a white finding. And that's kind of -- that's kind of where I am.

So I'm under the impression that white findings are very low threshold. They're very predictive. So I would expect to see, before I see a licensee really, you know, headed down the pike, my guess is, is that if you -- you know, a number of white findings, then we'd have plenty of time before they're really a safety concern to turn that around. That's just how I look at the ROP.

MEMBER SIEBER: Well, I wondered about that a little bit, because we went to Davis Bessy (ph.) not too long ago, before their problems, and they had mostly all greens. They were in Code 1, a nice plaque on the end of their turbine. And so if

now everybody is saying that the safety culture is deficient there, did they not recognize it while the problems were going on? Or do you have to have some kind of event for a better than white finding in order to be able to say you've got a safety culture issue and we need to make some kind of regulatory response?

MR. LINVILLE: Well, I -- I guess I don't think we really had that many white findings in the quantitative area, the mitigating systems area or initiating events area.

MEMBER SIEBER: That was an initiating event.

MR. LINVILLE: And yet -- and yet I think we've seen symptoms before those have occurred in a number of places. We've done three inspections on losses off-site, special inspection teams on losses off-site power and diesel generator problems at -- at Salem or at Seabrook in the last few years.

At Salem, we saw a number of white PI's and fire protection issues before we saw the white finding there. So I think you'll see symptoms. One is a lot -- everybody identifies problems now, but it's more what do they do about them and do they have recurrent problems is a key -- key thing to look for, I think.

And when you're having recurrent special team inspections or the frequent white PI's, I think you're -- it's only time until you get that white finding. So I think you can start seeing it. And that's why I think the cross-cutting issues that we do are very important to early identification --

MEMBER SIEBER: I think -- I think the approach that Region One is taking is a good approach. And apparently it's well communicated throughout your organization. So, you know, I feel more comfortable today than I did two days ago, while I was getting prepared to come here. And so that's -- that's congratulations to all of you for understanding the issue and having sufficient leadership throughout your organization to communicate that far and wide, so that your folks know what to do and how to respond.

Somebody else wanted to say something?

MR. CRLENJAK: Yes. I'd just like to add one onto what Jim said. I think one of the -- one of the indicators, too, that we key on, and I know that I've keyed on in my career, is the repetitiveness of certain problems.

All licensees, utilities have problems, but I believe when you have the right culture, you're going to have a problem and normally they'll jump into

it, the management, the workers will work on it, the engineers will get into that problem, and they'll normally solve it.

It's when you start seeing the repetitiveness of the same problems come in over and over again that really, you know, causes us to home in on certain issues or certain licensees, certain organizations of licensees, and ask, hey, what's going on here.

And I don't know a lot about Davis Bessy, other than what I've read, but I know that they had the repetitive problem with the coolers. And, you know, that would be something that I think, you know, most people would key in on and say, okay, this is the second time, this is the third time, what's going on here, how come it keeps on happening.

So I think that's a pretty good indicator in the area of culture and how -- how a licensee and how their people attach those repetitive problems.

MR. BLOUGH: Jack, one part of your question was building on Steve's, where you said how do you get a gauge for the safety culture, and then you were saying then how do you wrestle with what to do about it --

MEMBER SIEBER: That's right.

MR. BLOUGH: -- if you have a concern in that area. So I guess you got a couple of opinions. I'd just be curious if other inspectors wanted to --

MR. SCHMIDT: I've got the -- one key thing that -- that I know has been successful from a team inspection standpoint is, going in, you have a fairly fresh set of eyes, experienced eyes nonetheless, and you're going in, and if you can find problems with systems that the licensee just doesn't even really identify or understand, that's a real good key. And we had that, several of those examples here in the recent past, where, you know, it leads you to believe the licensee isn't really looking real hard at their equipment and trying to understand the problems they do have.

MEMBER SIEBER: Having done some contractor work in the inspection area, I found that sometimes the top management or senior management may not know, but the workers seem to know. And so when you're asking the question, you start to ask through the full range of the organization, and you can find where the disconnects are. And when you find these communications disconnects, to me, that's a prime indicator of a safety culture that's dysfunctional.

MR. ROGGE: That's a -- that's a good

point, because we talked about -- site visits before, when Hub was talking about them, but all the inspectors do is the job of keying on some of these safety culture items. But then when we do the site visits, there's a lot of emphasis on the senior resident, who also has to communicate these ideas to the visiting inspectors as to what they read for that organization's site visits. I know we get it out to agenda.

But we go through almost every manager in the organization. Part of the safety culture is understanding who is actually running the plants, what do they think, what are their priorities. And the plant tour, where we go through and pick up people that are in the plant to see if there is a disconnect between what management is saying and what -- what the deck plate is saying.

I was involved with IT, too, for a short period, and there was a huge gap between what management said and what the deck plate said. And you see that at plants as they're getting into trouble and coming out, it tends to come together. And you see the -- it takes time -- site visits and the way we take that information, and we allow it to inference us the next time they have an event, if we know who they

are, how they react, and we sort of temper our response with that information.

MEMBER BONACA: In some previous visit, we had some other regions, and this was the early time of the revised reactor oversight program, one thing that we got was that inspectors liked it; however, they felt that the significance of termination process and, you know, the administration of the ROP was keeping them -- was a challenge to their time, was keeping them away from the plant, was -- was keeping them very busy.

What's your feedback now? Clearly, there is, you know, they were expressing also some growing pains, as well as a couple of years ago. Has this changed? Do you -- do you feel the same kind of pressures?

MR. PINDALE: I can take the first part. And I think that the pressure is reduced. I think that's how I would characterize it, too, is -- is the growing pains with learning a new process.

And I had them. I think, with going through it, you learn more, it becomes easier, and -- and we use the SRA's extensively. I was involved with the Nine Mile Point inspection, the RBCCW system, and Gene was on the team. So that -- that helped us to

focus on the performance issues.

So I think it's gotten a lot better. I don't feel that we have any restriction to look at different areas. What we do is we -- we screen a lot of things. Again, this is in the PIR arena, that we screen, you know, hundreds of condition reports to look for any common thread or repeat failures, and then we assess it that way using the ROP.

But, I would still characterize it mostly as growing pains.

MEMBER BONACA: Now, one thing that the RES is working on, trying to identify additional performance indicators, maybe this other, you know, like -- are you satisfied with the -- with the PI's that are in the system right now or do you encourage the development of some other PI's?

MR. HANSELL: I guess as far as performance indicators go, we always question why looking at a record once -- look at, identify, and only not un-identify, we look at plant problems. Most plant shutdowns are related to unidentified leakage in the reactor vessel. So to take a PI and only look at identified didn't make sense to us and we -- feedback form to get it changed, but didn't have much success so far.

MEMBER BONACA: Okay.

MR. FUHMEISTER: I'm going to go out on a limb here. I kind of liked the revised oversight program. This --

UNIDENTIFIED SPEAKER: Well, some other people would --

MR. FUHMEISTER: I've been doing fire inspections now since 1996 and the revised oversight program has opened up a lot of areas where we never used to go. We never used to look at the design and testing of gaseous suppression systems. We never used to look at post fire shutdown procedures. We never used to look at the design of a post fire shutdown. And we can get into that now.

And, you know, if -- if we find a problem, we can pursue it under the ROP, you know. It's not, well, we got a comp measure, so it's done. As an example, if -- if a utilities fire brigade failed every unannounced drill they ever held, that would not be something we could pursue under the old program as long as they retrained and redrilled every one of those crews. But that's a significant performance deficiency and I can pursue that now in the ROP.

MS. WALKER: And so in answering the question about the SDP and how much time it takes,

fire protection is an area where, I think, we're really experiencing some growing pains. But, I think, the benefits that we've gained from what it allows us to do in the -- the front end and what it opens up for us to do, and how it allows us to focus on things that are really important, and even when it does take more time at the back end to actually come up with that specific color, I think we feel it's worth it.

MEMBER BONACA: Good

MR. FUHMEISTER: Yeah. And the amount of time the SDP takes is somewhat dependent upon what it is you're evaluating. For instance, we spent a couple hundred hours looking at the CO2 system for Salem. And the reason it took so long is because we had to develop 27 separate fire scenarios, and we had at least 6 sequences for each of them. And when we went in and used information from the IP-EEE, when we went back to the utility and said, okay, this is what we think the results are, he says, oh, no, it doesn't really work like that, it's really this way.

So, again, the -- the quality of the -- of the licensee's probablistic safety assessment tools can seriously impact that.

MR. SCHMIDT: And one thing I'll add from an SDP task force or task group recommendations, Jim

Trappe was on the task group, and there were some recommendations or some -- some problems, I think, that inspectors had relative to the ease of use of the Phase II notebooks and, you know, how much -- if you only use it one time a year, how proficient can you actually be in using it?

And we are taking some steps with NRR to come up with a solution to the Phase II notebooks, so it gives the inspector both the answer and risk insight that they can use to -- in planning the inspection.

MEMBER BONACA: So you do have some ability of feeding back your experience to headquarters, but the comment I heard before, however, that, you know, you made a suggestion there and really wasn't answered.

MR. HANSELL: Yeah. No, we provide the feedback.

MEMBER ROSEN: The feedback has been provided as far as -- program sense.

MEMBER BONACA: Yeah.

MR. COBEY: Because that's just an isolated case and it's -- it's still an open issue.

MEMBER BONACA: Right.

MR. COBEY: Yeah, that issue has not been

resolved -- performance indicator. Actually, I -- been talking briefly performance indicators in general, if you don't mind. I think your question was are we satisfied with the set of performance indicators that we have. And I think before, you know, I provide any perspective on that, step back a minute and look back at when we were originally transitioned to the ROP.

We didn't have any performance indicators. So what did we do, we took the ones that pre-existed, indicators the industry reported to IMPO, etc., and said, okay, we're going to use these because they're the best available. We know they're not perfect, but we're going to use these until we endeavor to find things better, which I believe the Office of Research has been working on in the interim and they have developed an MSPI. They've also developed this new industry initiating LANs (ph.) performance indicator that's coming down the pike, etc.

So I think the answer is, no, I don't think we're wholly satisfied that the performance indicators are really telling us the right things, that they're truly indicators of where performance is not as good as it should be and we ought to engage. There are issues with them. Some of those are more

obvious than others. Some of the indicators have holes, like Sam mentioned.

So I would have to say I don't believe that we feel comfortable that the set of indicators that we have now are necessarily the set we should be going for with in the future. I still think we're in a state where they're the best available and we're -- the agency, I guess, is now -- is endeavoring to produce better indicators.

I know Davis Bessy -- task forces, I guess, there's some indicator associated with barrier -- that may be developed in the future. So I'd have to say, no, I don't think we're satisfied. But, yeah, this is the right set going forward. But I think it's still the best set that we have.

MEMBER ROSEN: Are you hoping that the MSPI's will be developed and become ready to supplant what's in there for the mitigating systems indicators?

MR. COBEY: I think that the MSPI initiative was good initiative at the start, for the reasons I just alluded to. But I think the MSPI, having gone through the six-month pilot, the results from the pilot have provided us information that -- that is telling us that we need to seriously look at its construct and make and address the issues that

have been identified.

There's a whole litany of technical issues that have been identified as a result of the pilot, as well as the non-technical but implementation issues. So I would say, at this point in time, while obviously it's premature to judge the outcome because we're still in progress, but if we don't make those fundamental changes that need to be made, whatever they happen to be, to address those issues, I don't think it would meet the success criteria that's currently constructed.

Now, can it meet the success criteria, if it's changed? Possibly, but it's too soon to tell. But in retrospect, I still think it's a good initiative to try and improve the performance indicators that we have.

And so that's kind of the 30-second version on MSPI, I mean, that certainly there is a lot more to it than that. But that's, I think, where we're at.

MEMBER SIEBER: I look at the performance indicators as a supplement to the inspection program, the real meat of the ROP is the restructuring of the inspection manual and the inspection program, the way it's run, today. And so all these various facets,

these aspects work together to come up with a balanced performance base, risk informed way to look at licensee performance.

And I don't know that whether we have the right balance, I don't know whether we can improve the PI's or not. I think we can. On the other hand, and I know that the SPP process is not complete and the last one is going to be fire protection next year, and I'm eager to see that happen, because I think that's an important one.

And if you look at the risk profile of a lot of plants, you've got a third into the risk assigned to operating the plant, a third of the risk assigned to the plant when it's shut down, and a third of the risk assigned to fire. And so we've got to pay attention to shut down modes and fire mode, in addition to what everybody likes to do, which is the operating plant mode.

So I think that what we -- where we're going now is a refinement and trying to achieve balance. And the kinds of things that you folks are doing, I think, are aiding that process, and I'm glad to see it, that there is active interest and -- and knowledge at the region level.

Anybody else has any questions or

comments? Sir?

MR. MILLER: No, I just -- moving forward, I don't want to cut off the inspection hearings.

MEMBER SIEBER: Well, I think that we're drawing to a close, if we don't have anymore questions. I can tell you on behalf of the ACRS and the Plant Operations Subcommittee that the last two days have been interesting. And our meeting with you has been a rewarding meeting, and gives us some -- a more complete view of what happens in the regions, and the kinds of projects and advice we give will certainly reflect what we've learned here.

And so I think this has been a good meeting for the ACRS and I'm going to allow our ACRS chairman to address that. But before I do, I want to thank everybody for well done presentations and for your attendance.

MEMBER BONACA: Well, all I can do is to echo Mr. Sieber here. It was an extremely informative session, today. Actually, I must say it was the best I've experienced to date. I think it was valuable, also, because in the previous one, we saw the, you know, ROP, you know, the revised ROP in the first steps, and again the growing pains, etc., much less enthusiasm than we have seen today for it. I mean I

sense some level of enthusiasm for it. I think that's positive.

I think we -- we learned quite a bit about safety culture, never enough, but right now some of the issues that are most important on the table are security and safeguards, safety cultures, and risk inform regulations. So that's why you got so many questions on -- on the issue of safety culture.

We have a workshop organized in two days. We try to understand for the industry some more about this issue. And with that, I want to thank you again for the hospitality. And I don't know if any of the members have any additional comments?

With that, thank you, again.

MR. MILLER: We're very tickled that you've come to visit us. We have articulated through management, you know, some expectations. In many respects, it's easy to talk about those, it's much harder to do. What we can do is encourage and, but, in the end, it's the competence of the people. And, hopefully, in this session here, you've got a sense for the depth of experience, more than --

MEMBER BONACA: We sure did.

MR. MILLER: -- more than the depth of experience, the thoughtfulness, of the savvy of the

people that are here. The issues that are out there that really count are hidden. They're not the ones that we walk into the plant -- it would be nice if you could walk through a plant, and inspect, and find all the issues that are hidden. And many of them, in fact, some of the most insidious ones are very difficult to find, and just give you one.

But, if I sit and worry about things, perhaps in this region, especially, where it's an all merchant fleet, it's the potential for self-censorship. It is not what management at the top says. Management at the top will always preach a safety message, and that's genuinely what I believe they intend. It is ultimately what the staffs interpret, and what they do and what they act on.

And that's -- we didn't spend a lot of time talking about that, but we're talking about potential pitfalls. And we can give you examples of situations where we've seen instances, so where staff at these plants have done things to help the company out, quote/unquote. And it is the savvy, it's the ability of folks to -- I talked about our being schizophrenic, that both the very technically competent to dig deep, penetrate the technical issues, but also I sort of step back and read -- read the

situation.

So we hope this has been helpful to you. We're passionate about what we do. I hope that came through, today. A great deal of, you know, conviction about coming to work in the morning, and we think we are making a difference. So again, thank you very much for coming.

MEMBER SIEBER: Thank you.

MEMBER BONACA: Thank you very much.

MEMBER SIEBER: And with that, this meeting is adjourned.

(Whereupon, at 5:00 p.m., the hearing was concluded.)

CERTIFICATE

This is to certify that the attached proceedings before the United States Nuclear Regulatory Commission in the matter of:

Name of Proceeding: Advisory Committee on Reactor Safeguards Plant Operations Subcommittee

Docket Number: n/a

Location: King of Prussia, PA

were held as herein appears, and that this is the original transcript thereof for the file of the United States Nuclear Regulatory Commission taken by me and, thereafter reduced to typewriting by me or under the direction of the court reporting company, and that the transcript is a true and accurate record of the foregoing proceedings.

Jack Burke
Official Reporter

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

REGION I VISIT
475 ALLENDALE ROAD, KING OF PRUSSIA, PA

June 10, 2003
- AGENDA -

Time	Topic	Presenter	Time Allotted
8:30 - 8:45 am	Opening Remarks	H. Miller, RI J. Sieber, ACRS	15 minutes
8:45 - 9:30	Region I Overview and Challenges	H. Miller	45 minutes
9:30 - 10:15	Region I Organization	J. Wiggins	45 minutes
10:15 - 10:30	Break	-	15 minutes
10:30 - 11:30	Plant Performance in Region I	R. Blough	1 hour
11:30 - 11:45	Indian Point Performance	B. Holian	15 minutes
11:45 - 12:45 pm	Lunch		1 hour
12:45 - 1:45	Inspection Results	W. Lanning	1 hour
1:45 - 2:15	SDP - Recent Example	E. Cobey R. Fuhrmeister	30 minutes
2:15 - 2:30	Break	-	15 minutes
2:30 - 4:15	Reactor Oversight Process Roundtable - Regional Inspectors - Resident Inspectors - SRAs - Management	J. Rogge R. Fuhrmeister S. Pindale T. Walker B. Welling S. Hansell E. Cobey W. Schmidt R. Blough R. Crlenjak J. Trapp R. Lorson J. Linville	1 hour - 45 minutes
4:15 - 4:30	Closing Remarks	H. Miller, RI M. Bonaca, ACRS	15 minutes

HQ Observers: Laura Dudes, Marvin Sykes, and John Jolicoeur

RI CONTACT: John Rogge, jfr@nrc.gov or (610) 337-5146
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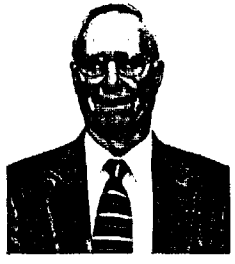

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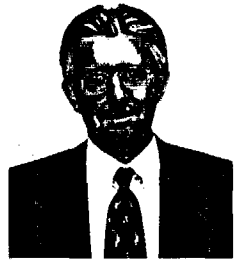

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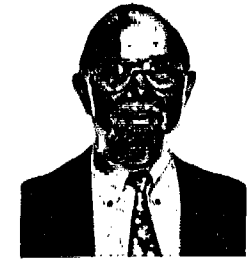

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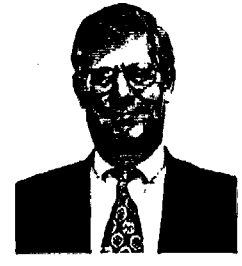

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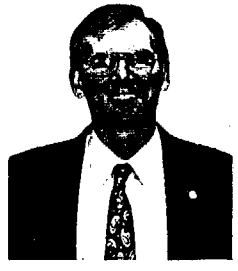

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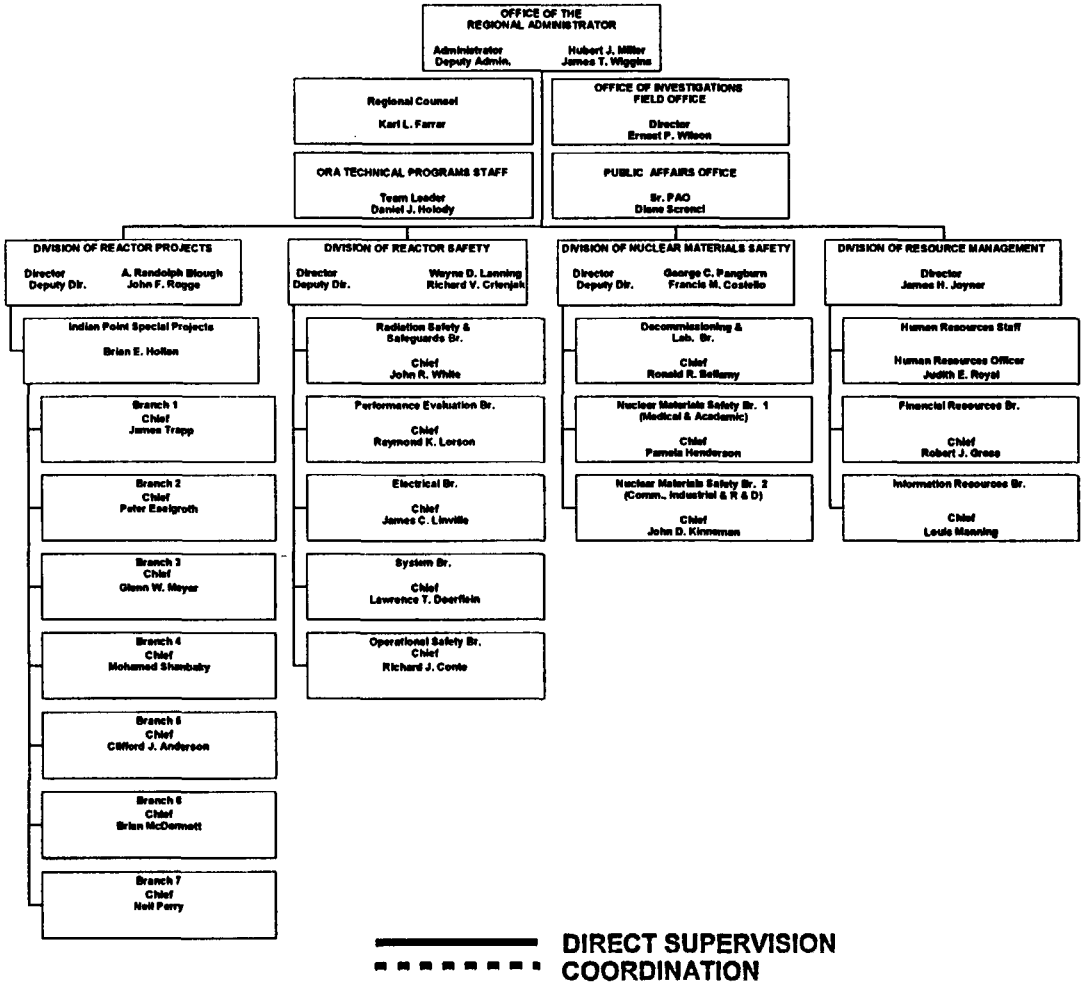
UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I

ACRS Committee on Reactor Safeguards
June 10, 2003

U.S. NUCLEAR REGULATORY COMMISSION
REGION I ORGANIZATION CHART



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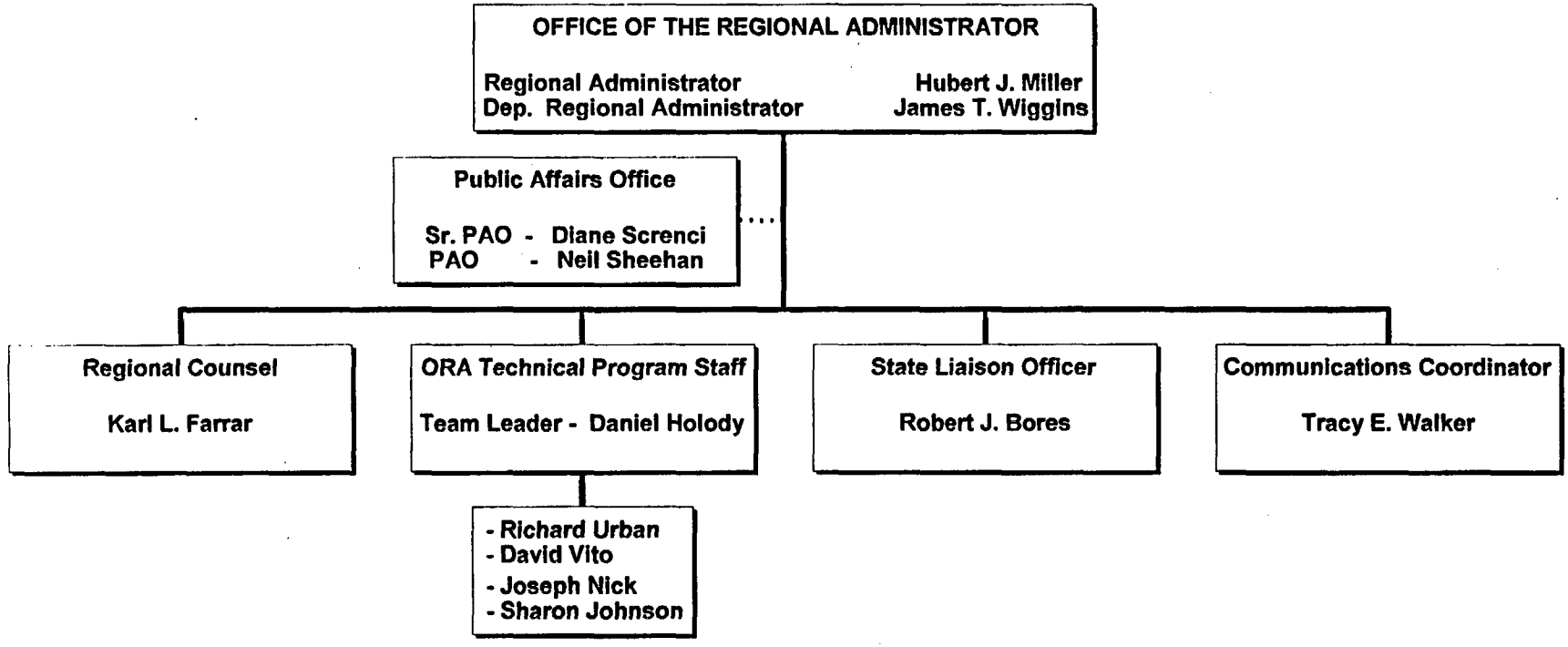
Region I Organization Chart



REGION I
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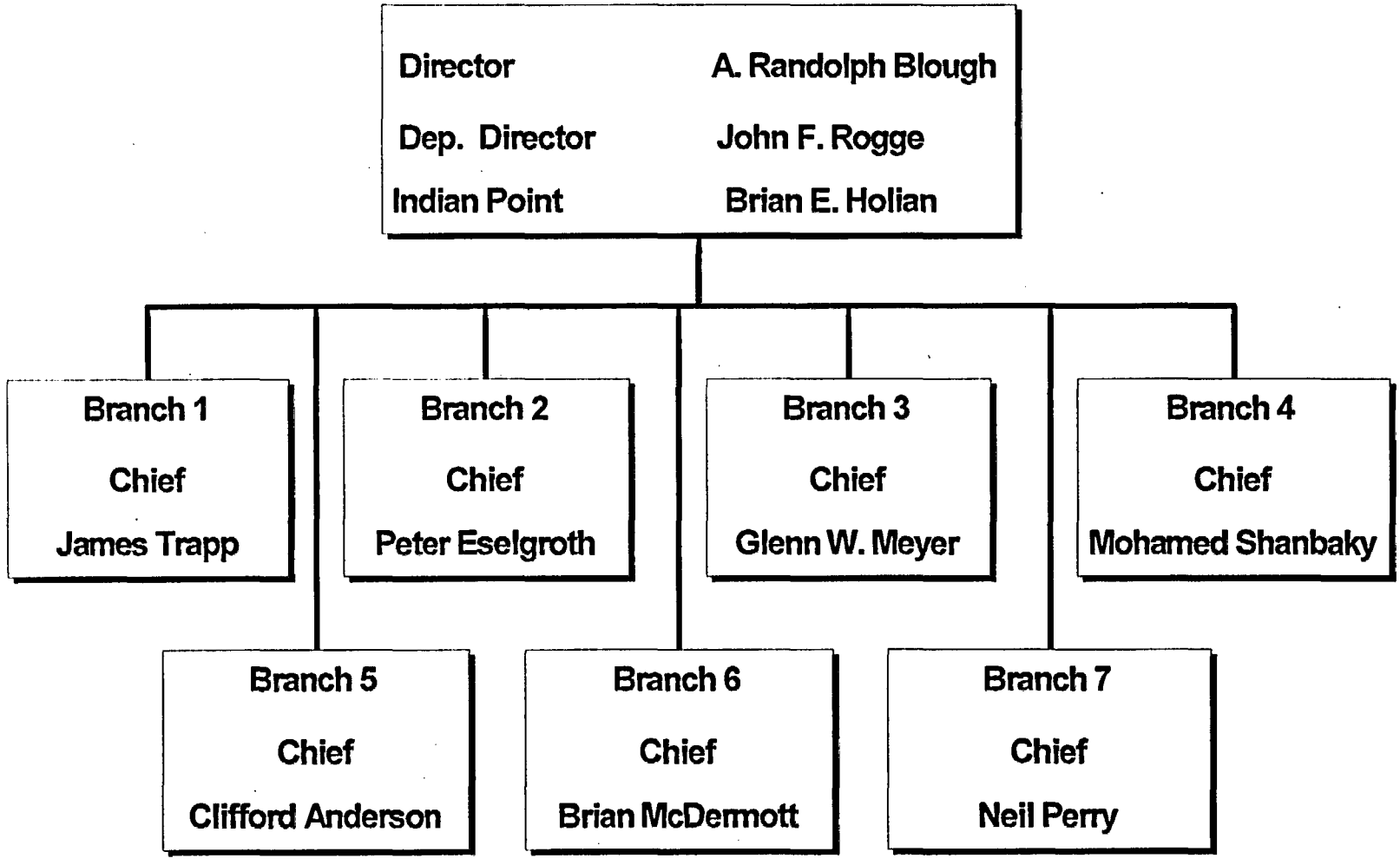
Organization Chart



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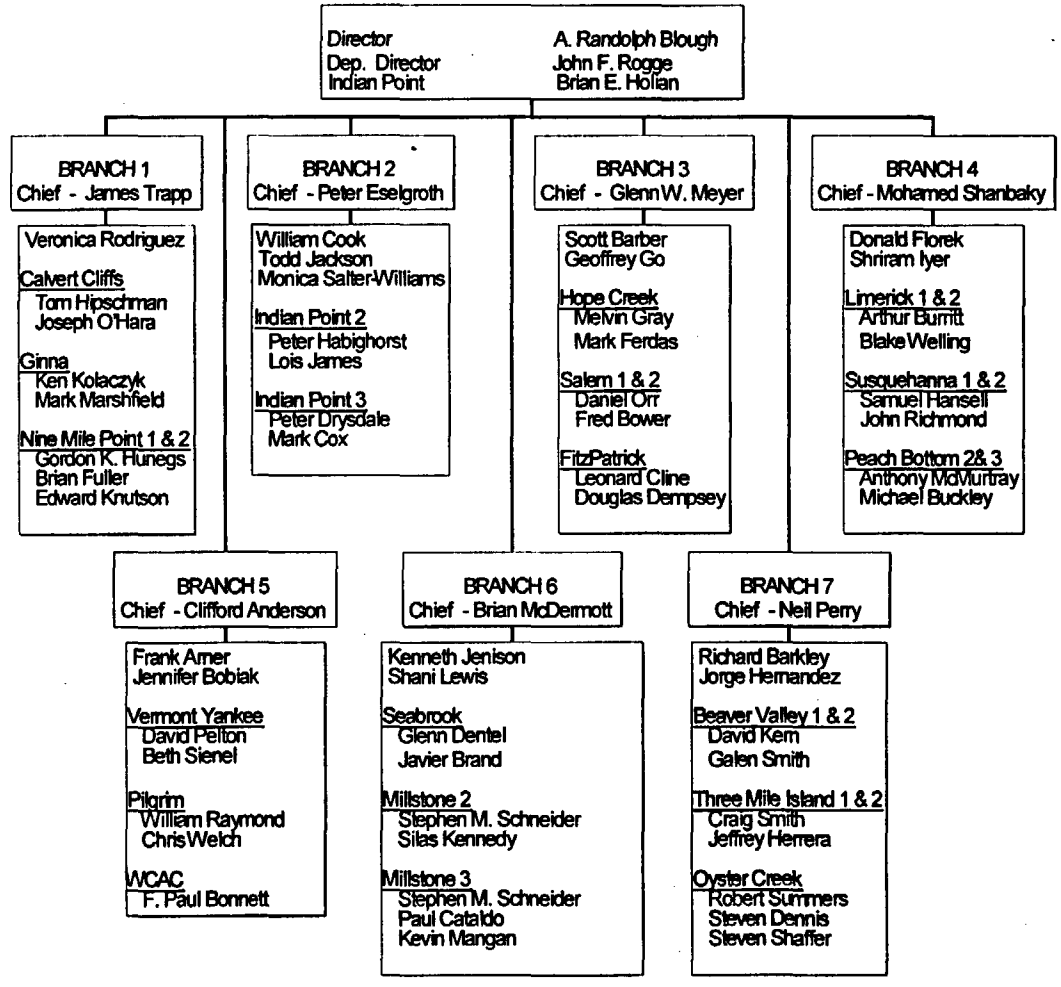

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DIVISION OF REACTOR SAFETY
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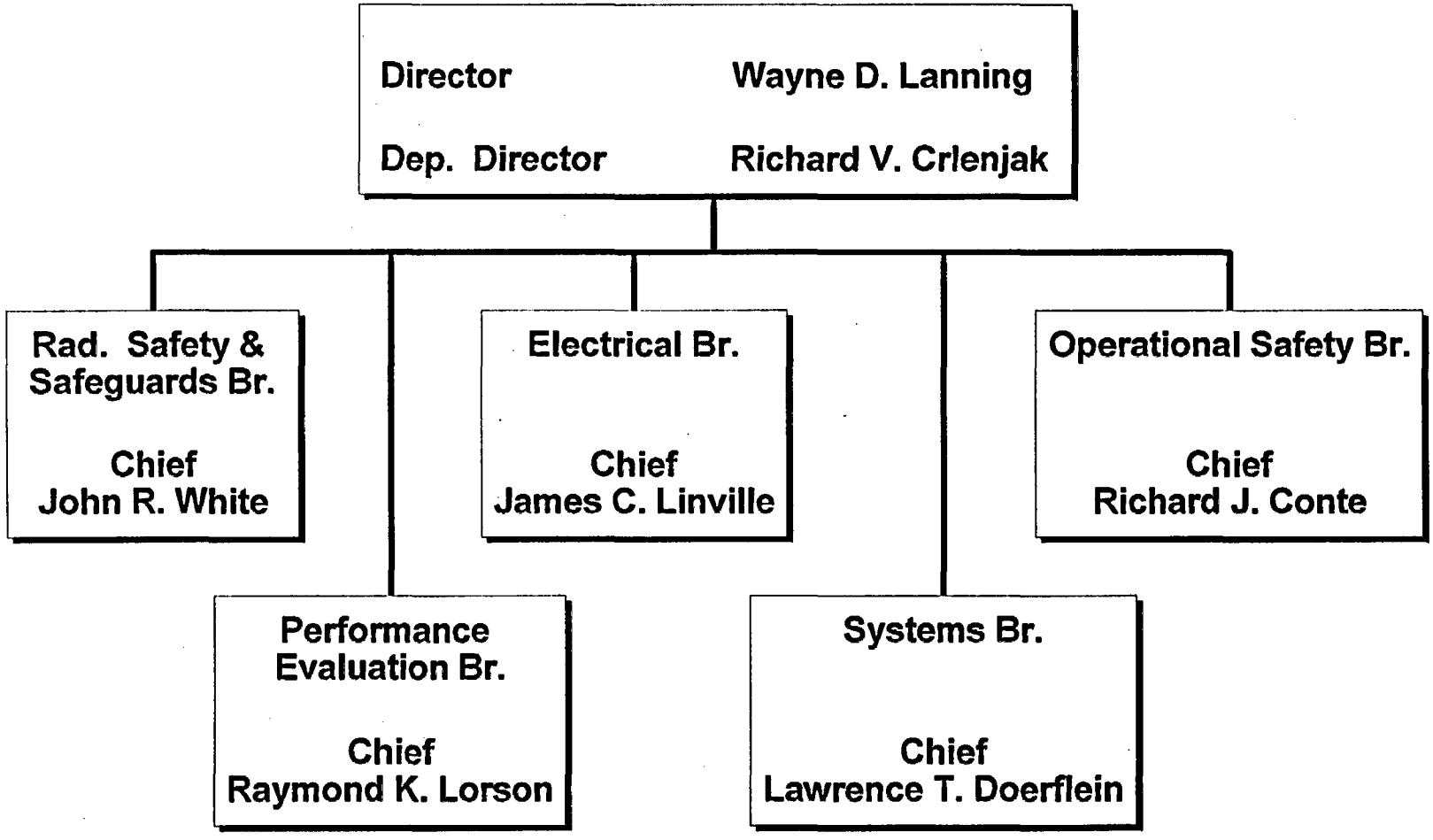

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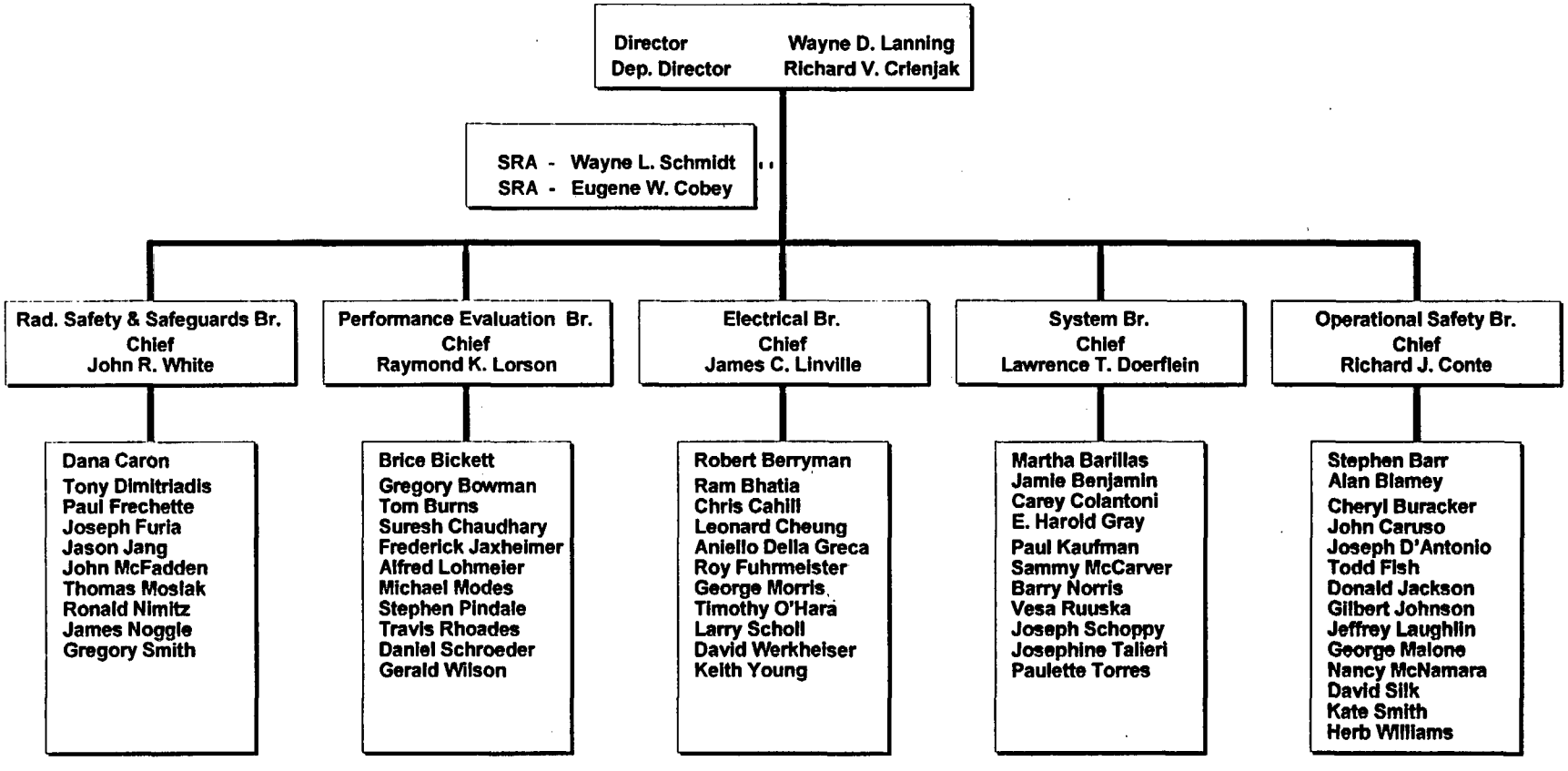
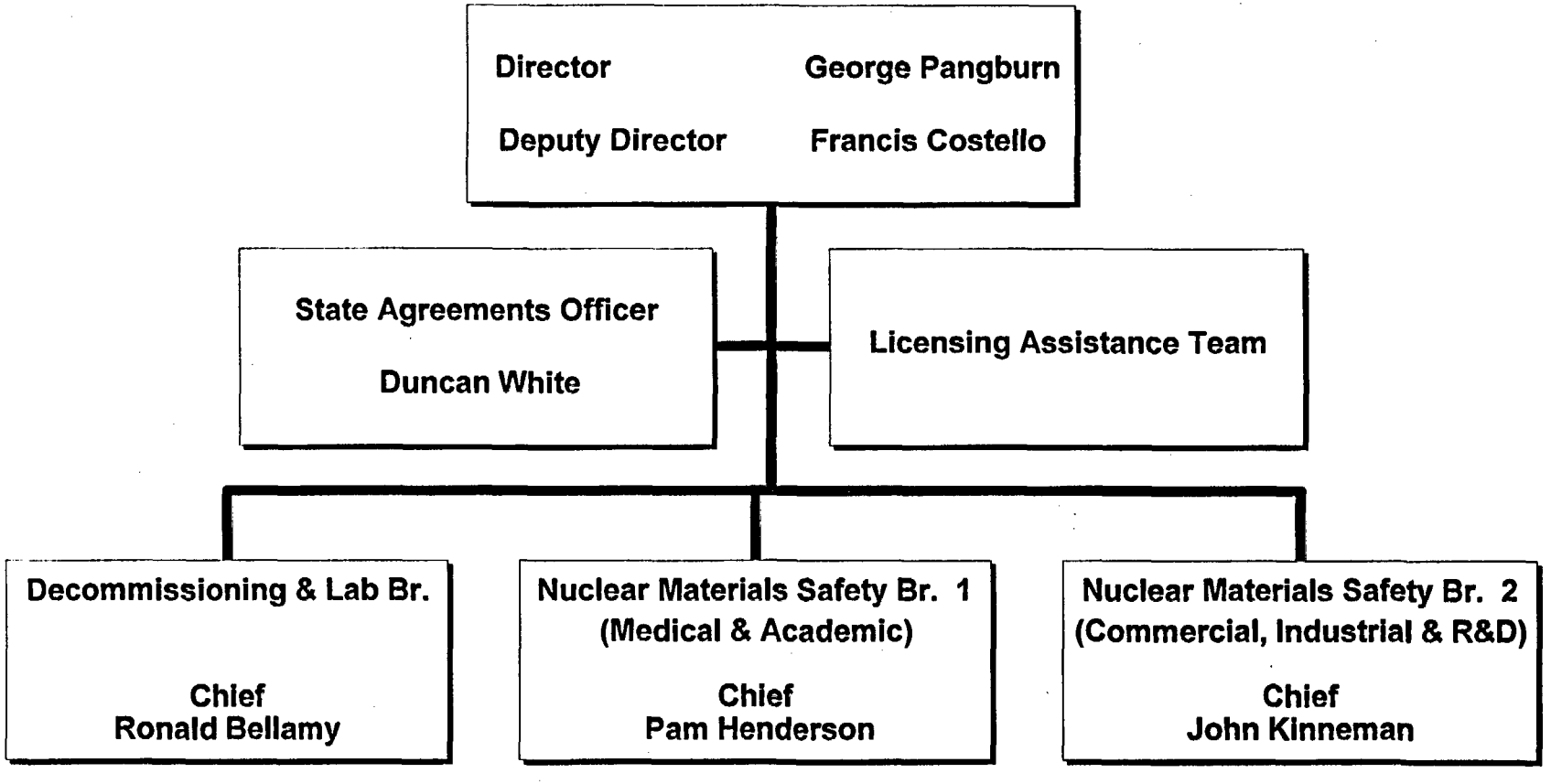
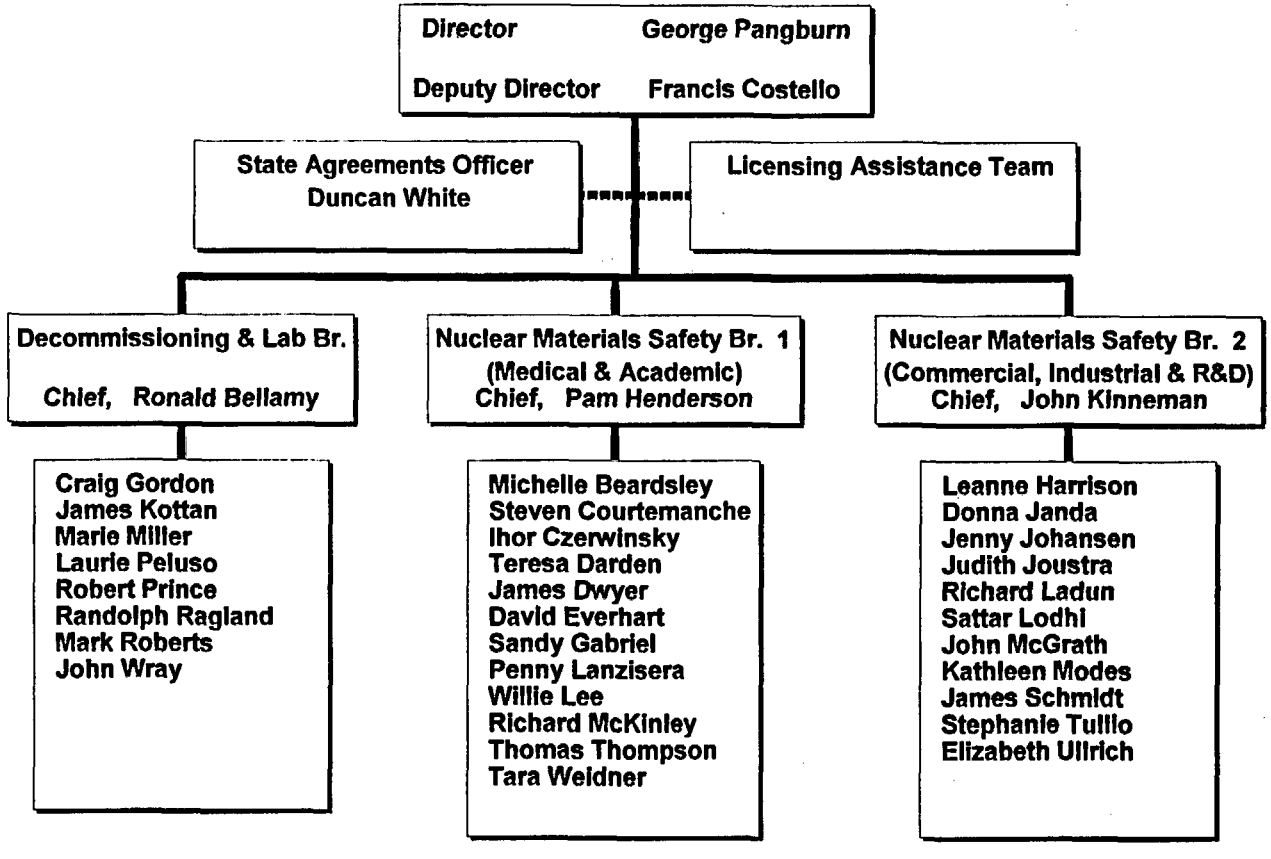


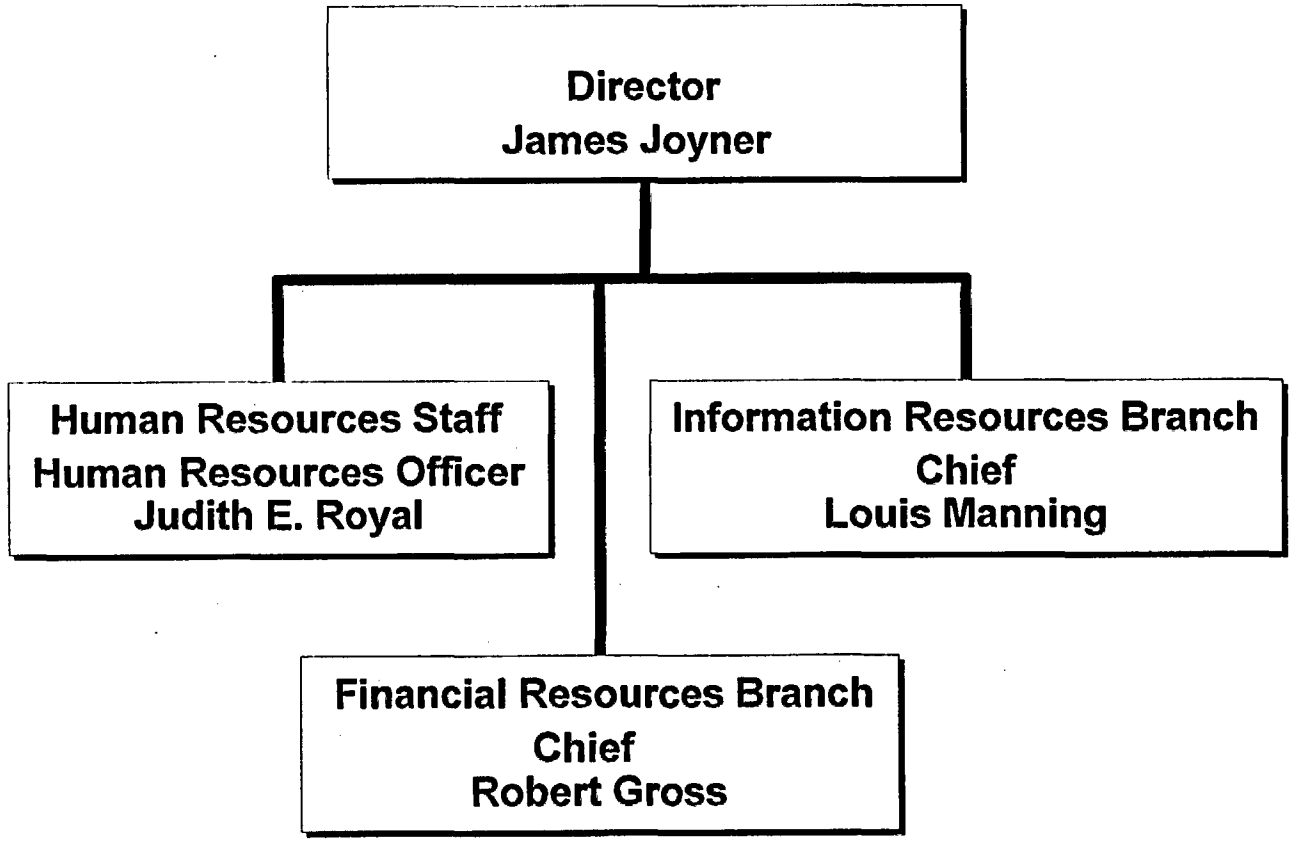
REGION I
DIVISION OF NUCLEAR MATERIALS SAFETY
Organization Chart



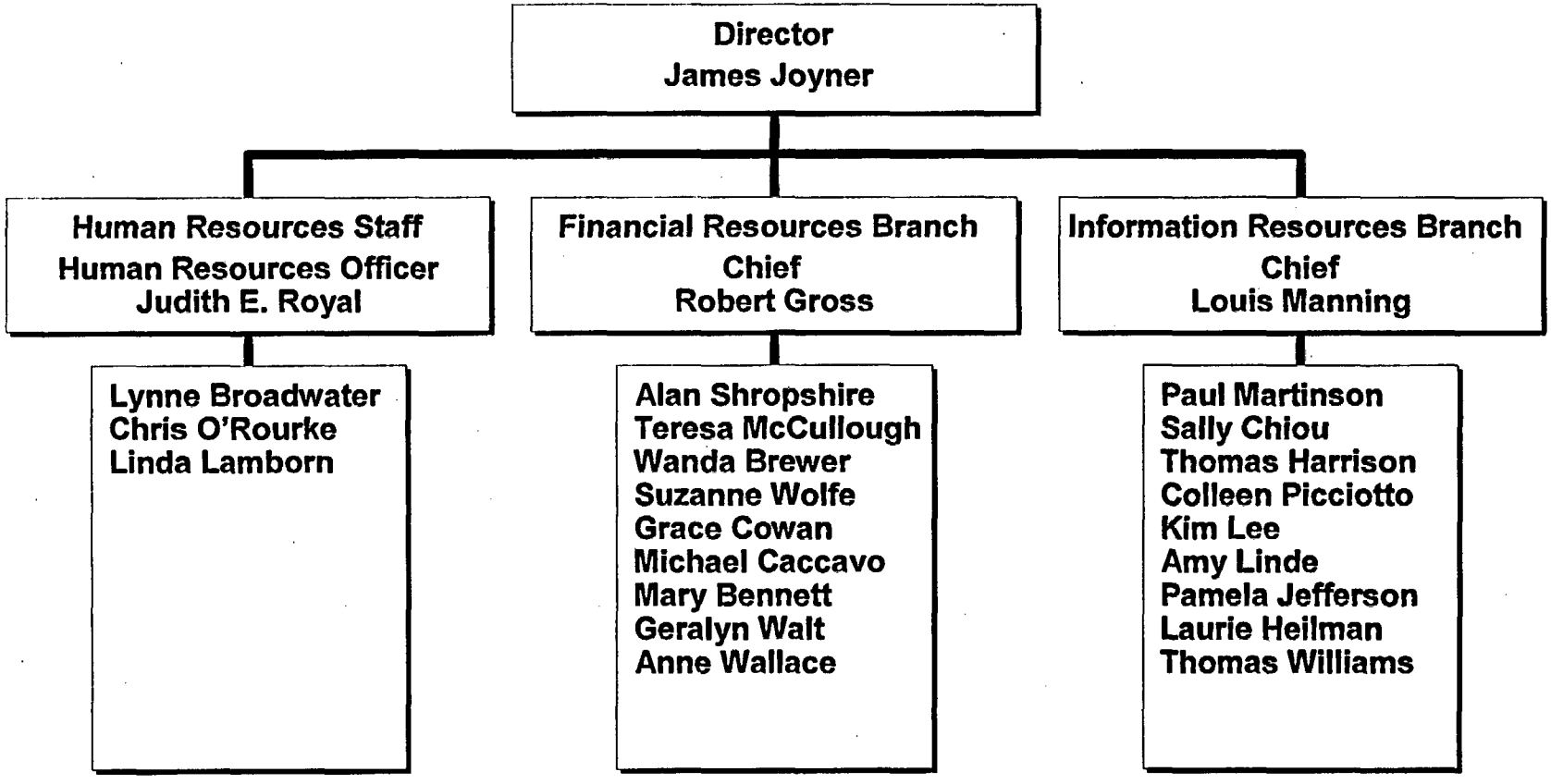
REGION I
DIVISION OF NUCLEAR MATERIALS SAFETY
Organization Chart



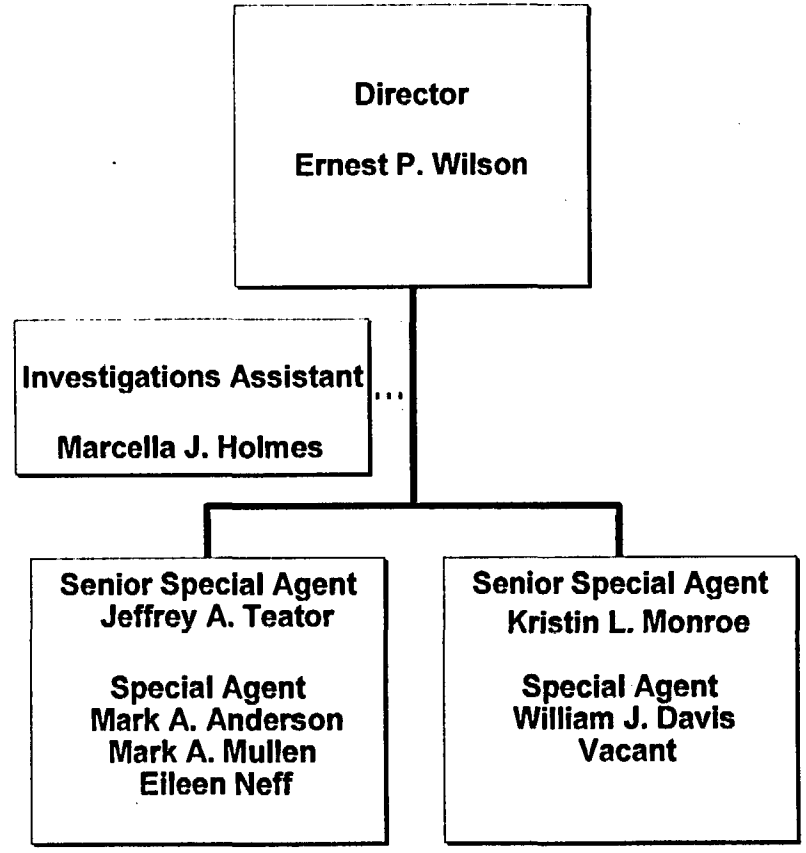
REGION I
DIVISION OF RESOURCE MANAGEMENT
Organization Chart



REGION I
DIVISION OF RESOURCE MANAGEMENT
Organization Chart



OFFICE OF INVESTIGATIONS
FIELD OFFICE
REGION I



ADVISORY COMMITTEE ON REACTOR SAFEGUARDS BRIEFING
June 10, 2003

Region I

Overview and Challenges

Hubert J. Miller

REGION I OVERVIEW

- Historical Perspective
- Industry Change and Consolidation
- Public Interest
- Resource Challenges and Staffing
- Inspection and Oversight Philosophy – "Safety Culture"

HISTORICAL PERSPECTIVE

- "Yankee" system pioneered
- Yankee Rowe – 1960 O.L.
- Large number of small, single unit sites with multiple owners
- "Governance" and remote technical support issues

HISTORICAL PERSPECTIVE (Cont'd)

- Strong public interest – e.g. Shoreham, Seabrook, Millstone
- Historical plant performance problems – numerous "Watch List" plants in past
- TMI

INDUSTRY CHANGE AND CONSOLIDATION

Year	Sites	Units	Owners
1993	21	30	17
2003	17	26	9

- 10 owner operators departed
- 4 new owners bridging other 3 regions
- Virtually all Region I plants operate as merchant plants
- Impacts of consolidation and deregulation

PUBLIC INTEREST

- At times, massive activity with significant resource implications
  - Past "Problem Plant" activity
  - Post 9/11 concerns
  - Indian Point activities
- Multiple Stakeholders
  - Congress
  - State and Local
  - Public Interest Groups
  - Media

INTERACTION WITH EXTERNAL STAKEHOLDERS (since 9/11/01)

	EVENTS	SUPPORTED	NOT SUPPORTED
Public Meetings	41	14	27
Congressional Site Visits	14	4	10
Congressional Briefings and Hearings	26	22	4
Support to Federal/State and other high level government officials	28	21	7
Reactor Oversight Program meetings open to public	36	36	
Other Stakeholder Interface Activities	37	25	12

PUBLIC INTEREST (Cont'd)

- Region I Initiatives
  - Budget/Staffing
  - Organization/Coordination Team
  - Communications
  - Outreach
  - Training

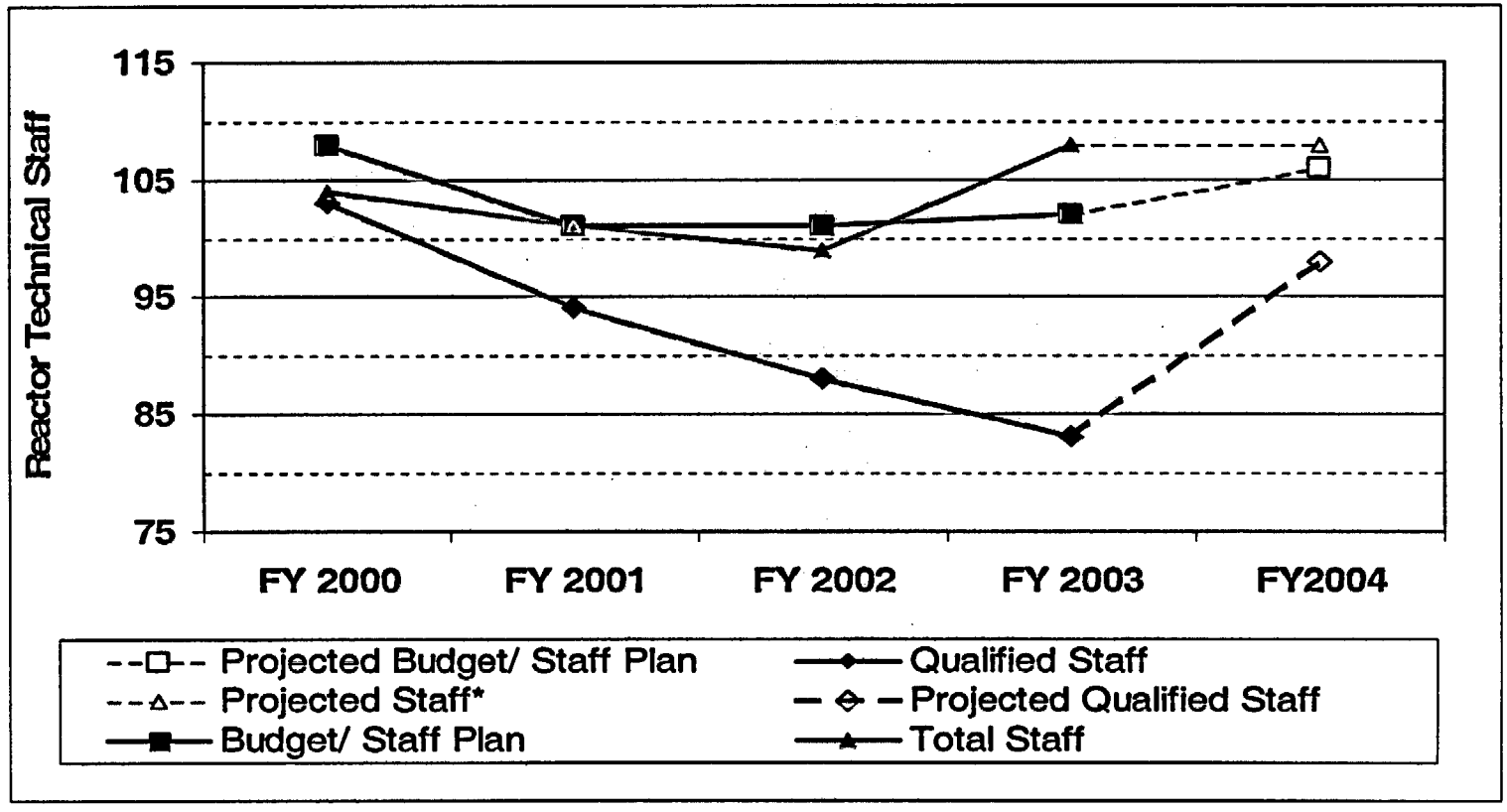
RESOURCES AND STAFFING

- Regional staffers playing key role in HQ senior positions
- Significant turnover poses challenge to program execution
- Intense management focus on staffing and resource utilization
  - Coping measures - - some "one time"
  - Positive results – e.g. program completion, quality findings, "site coverage"

RESOURCES AND STAFFING (Cont'd)

DRP/DRS

April 2000 - April 2004



* Assume 10% Attrition

RESOURCES AND STAFFING (Cont'd)

- Training and development successes and challenges
  - Significant over-hiring
  - Strong development initiatives

INSPECTION AND OVERSIGHT PHILOSOPHY

- ROP Improvements:
  - Risk focus
  - Increased Objectivity
  - Sound foundation for oversight
- As with all processes, effective implementation is the key

INSPECTION AND OVERSIGHT PHILOSOPHY

- Aggressive mindset to inspection and oversight is vital
  - Effective communication of expectations
  - Strong management involvement and support
  - Management site visits
- Assessment of "safety culture" a byproduct of every inspection – "connecting the dots"
- ANS September 9, 1998 Workshop

CONDUCT OF INSPECTIONS

AND COMMUNICATION OF INSPECTION FINDINGS

OVERVIEW

UTILITY/NRC INTERFACE WORKSHOP

SEPTEMBER 9, 1998

HUBERT J. MILLER

REGIONAL ADMINISTRATOR, REGION I

EXPECTATIONS FOR NRC INSPECTION AND OVERSIGHT

- FOCUS ON FINDING PROBLEMS
- FOCUS ON IMPORTANT ISSUES -- RISK INFORMED, PERFORMANCE BASED
- COMMUNICATE EFFECTIVELY

"FINDING PROBLEMS"

- BEST APPROACH NOT ONLY FOR SAFETY BUT ALSO FOR LONG TERM VIABILITY OF PLANT OPERATIONS

- IDENTIFICATION OF PROBLEMS EARLY – BEFORE BECOMING SIGNIFICANT EVENTS OR REGULATORY BREAKDOWN

- PROVIDES LICENSEES "TIME AND SPACE" TO DEAL WITH ISSUES

- NRC INDEPENDENT, PERFORMANCE BASED INSPECTION VS. "MINING" LICENSEE CORRECTIVE ACTION PROGRAM

- VALUE ADDED BY NRC

FOCUS ON IMPORTANT ISSUES

- REQUIRED AT EACH STAGE OF INSPECTION
  - BEFORE – PLANNING AND PICKING TARGETS
  - DURING – ASKING FOR INFORMATION
  - AFTER – ASSESSMENT, ENFORCEMENT AND DOCUMENTATION
- AVOID DIVERSION OF LICENSEE RESOURCES AND ATTENTION TO ISSUES WITH LOW SAFETY PAYOFF – AWARENESS OF SUBTLE WAYS THIS CAN HAPPEN
- "SPLIT PERSONALITY" A VIRTUE
  - DIG DEEP
  - STAND BACK AND ASSESS THE BIG PICTURE
- DISTINGUISH BETWEEN ISOLATED ISSUES AND PERVASIVE PROBLEMS AND WEAKNESSES
- RISK INSIGHTS
- TAP BROADER AGENCY PERSPECTIVES IN MAKING JUDGEMENTS
  - REGIONAL MANAGEMENT
  - PEER INSPECTORS AND SENIOR RISK ANALYSTS
  - NRR

ASSESSMENT OF LICENSEE SELF-ASSESSMENT AND CORRECTIVE ACTION PROGRAMS

- STRONG ELEMENT OF SELF-REGULATION
- BYPRODUCT OF ALL INSPECTIONS IS ASSESSMENT OF LICENSEE EFFORTS IN:
  - FINDING AND DOCUMENTING PROBLEMS
  - ASSESSMENT AND ROOT CAUSE
  - CORRECTIVE ACTIONS -- WORK CONTROL, ENGINEERING SUPPORT, ETC
- RECOGNIZE NEED TO PRIORITIZE
  - EVERY PROBLEM DOESN'T GET "FULL TREATMENT" -- GET FIXED IMMEDIATELY
- LINE ORGANIZATIONS FIRST FOCUS -- RECOGNIZE BEST RESULTS CAN COME FROM LINE ASSESSMENTS
- OVERSIGHT ORGANIZATIONS PROVIDE IMPORTANT, SECOND LINE OF DEFENSE -- E.G.:
  - QA AND ONSITE/OFFSITE OVERSIGHT COMMITTEES
  - SPECIAL THIRD PARTY REVIEWS
- GIVE PROPER CREDIT -- EXERCISE DISCRETION WHERE APPROPRIATE
  - INSPECTION FINDINGS
  - PERFORMANCE ASSESSMENT (E.G., SALP)
  - ENFORCEMENT

COMMUNICATIONS

- NO SURPRISES OR DISCONNECTS
  - COMMUNICATE DURING INSPECTIONS
  - INSPECTION REPORTS MATCH EXIT MEETING MESSAGE
- BOTH FACTS AND "TONE" ARE ISSUES
- INTEGRATED INSPECTION REPORTS
  - FEEDBACK ON "NEGATIVE BIAS" IN REPORTS
- MANAGEMENT MEETINGS, "DROP-INS", SITE VISITS

INTERNAL NRC OVERSIGHT

- GUIDANCE AND TRAINING
  - FUNDAMENTALS OF INSPECTION
  - INSPECTOR CERTIFICATION
  - INSPECTOR SEMINARS AND SPECIAL TRAINING
  - INSPECTION MANUAL (MC - 0610)

- OVERSIGHT
  - BRANCH CHIEF AND OTHER MANAGEMENT INVOLVEMENT
  - INSPECTION ACCOMPANIMENTS
  - SITE VISITS
  - FEEDBACK FROM LICENSEES AND OTHER STAKEHOLDERS

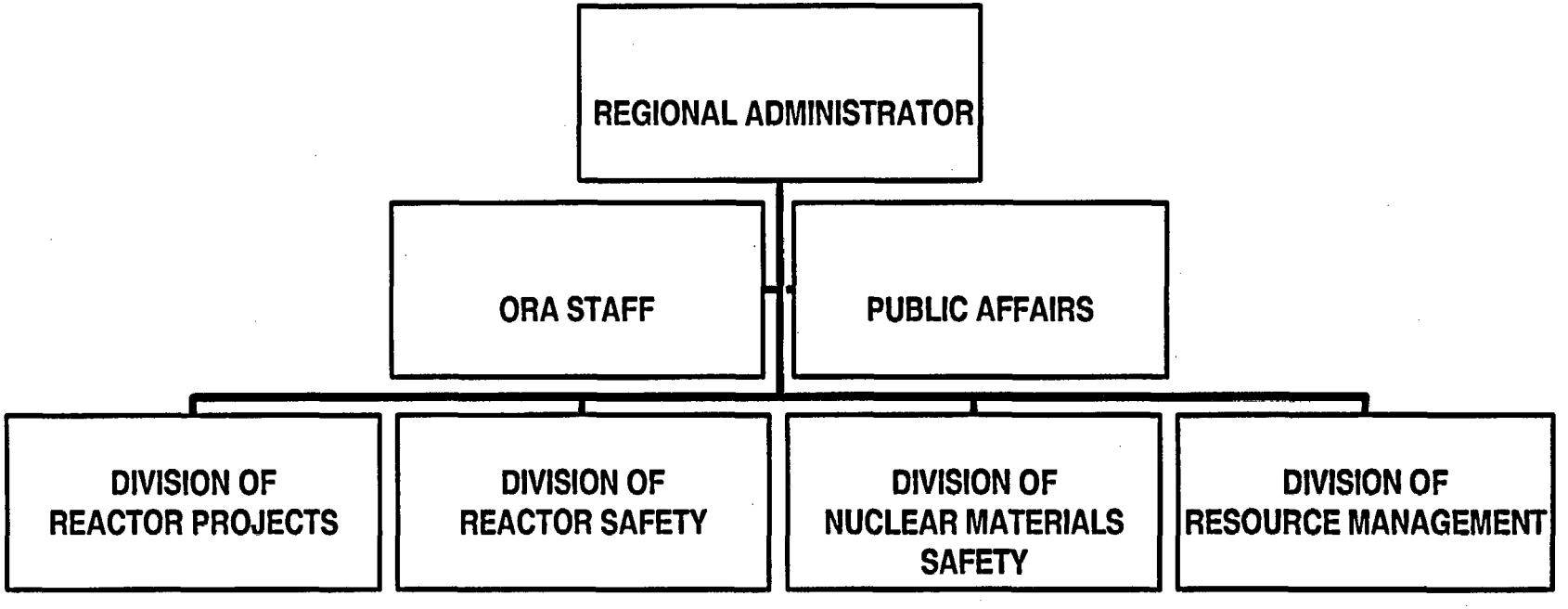
ADVISORY COMMITTEE ON REACTOR SAFEGUARDS BRIEFING
June 10, 2003

Region I

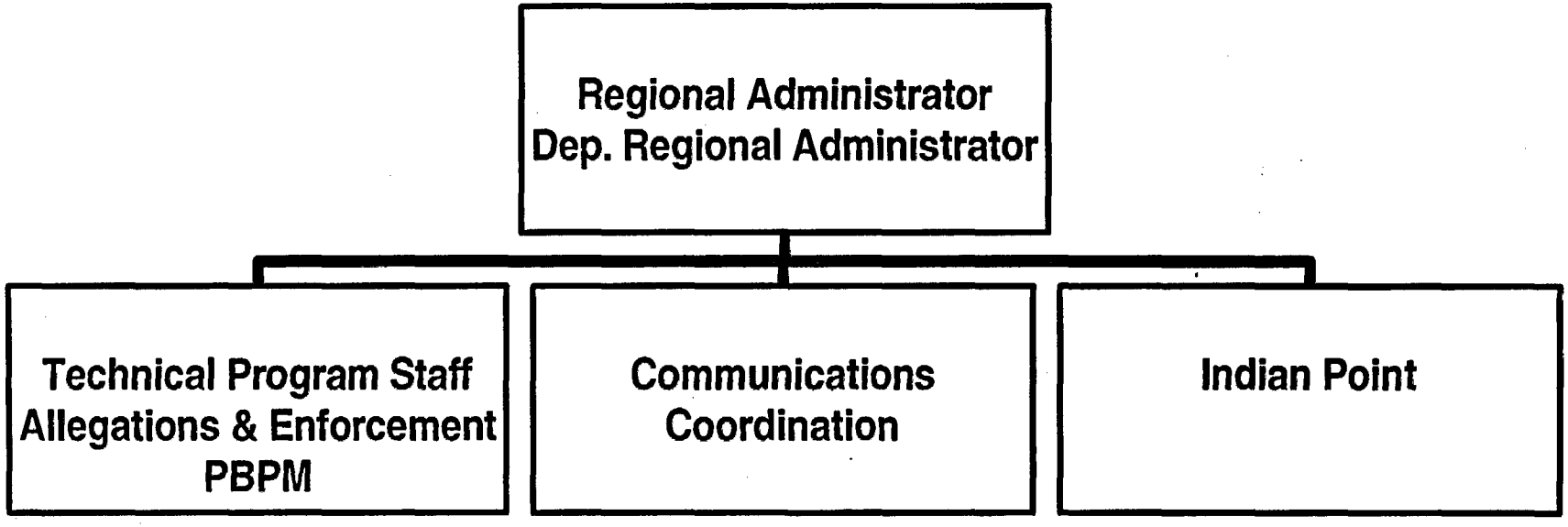
Organization

James T. Wiggins

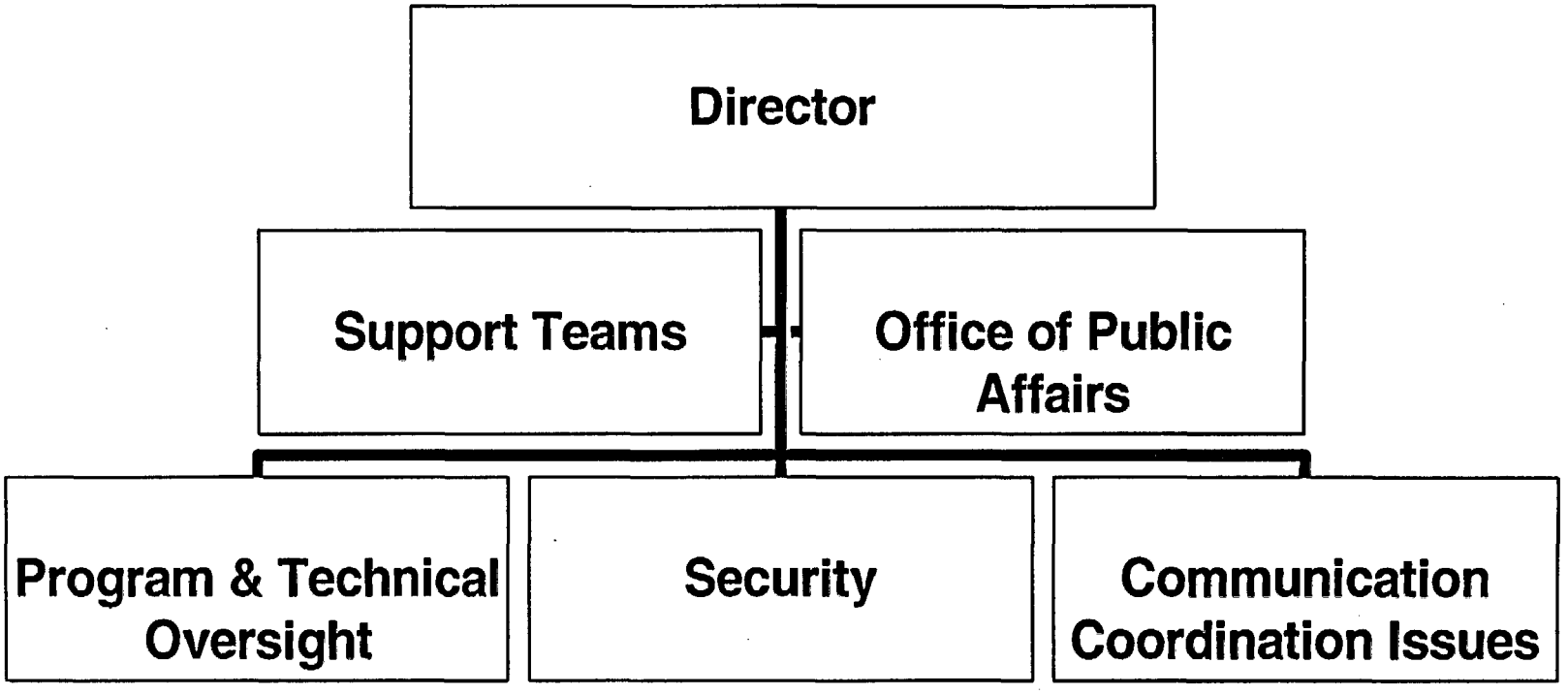
REGION I ORGANIZATION



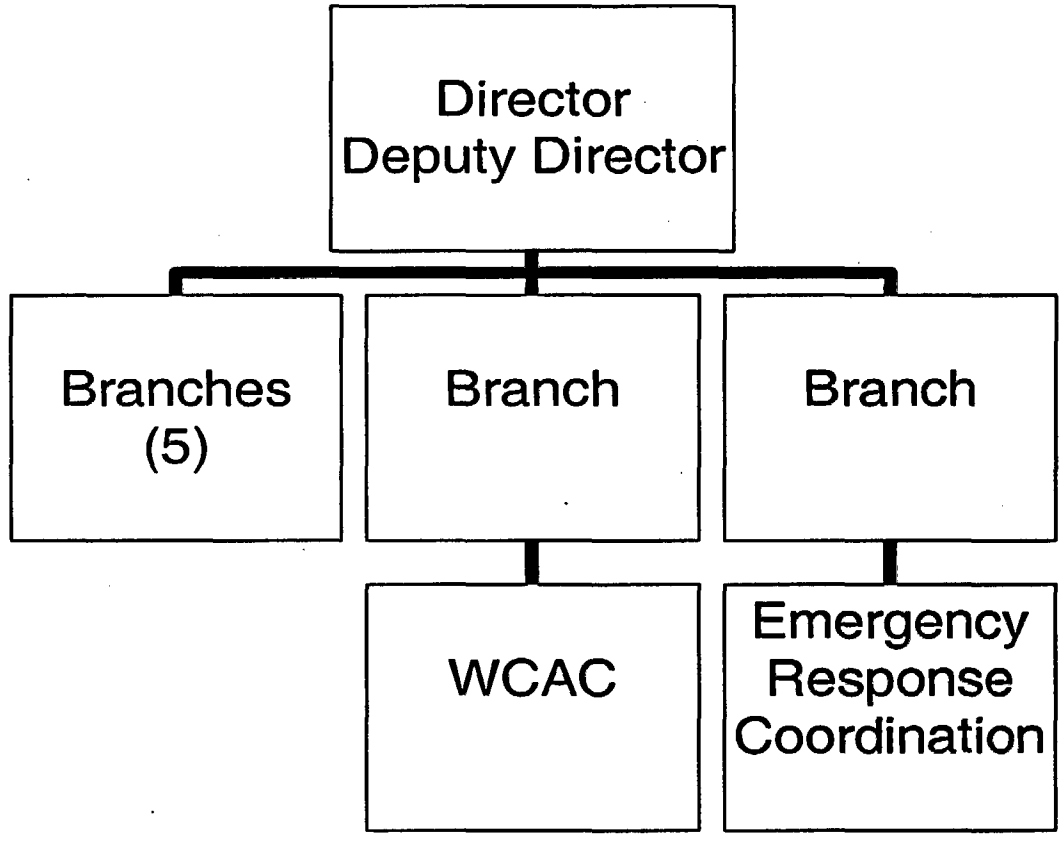
OFFICE OF THE REGIONAL ADMINISTRATOR



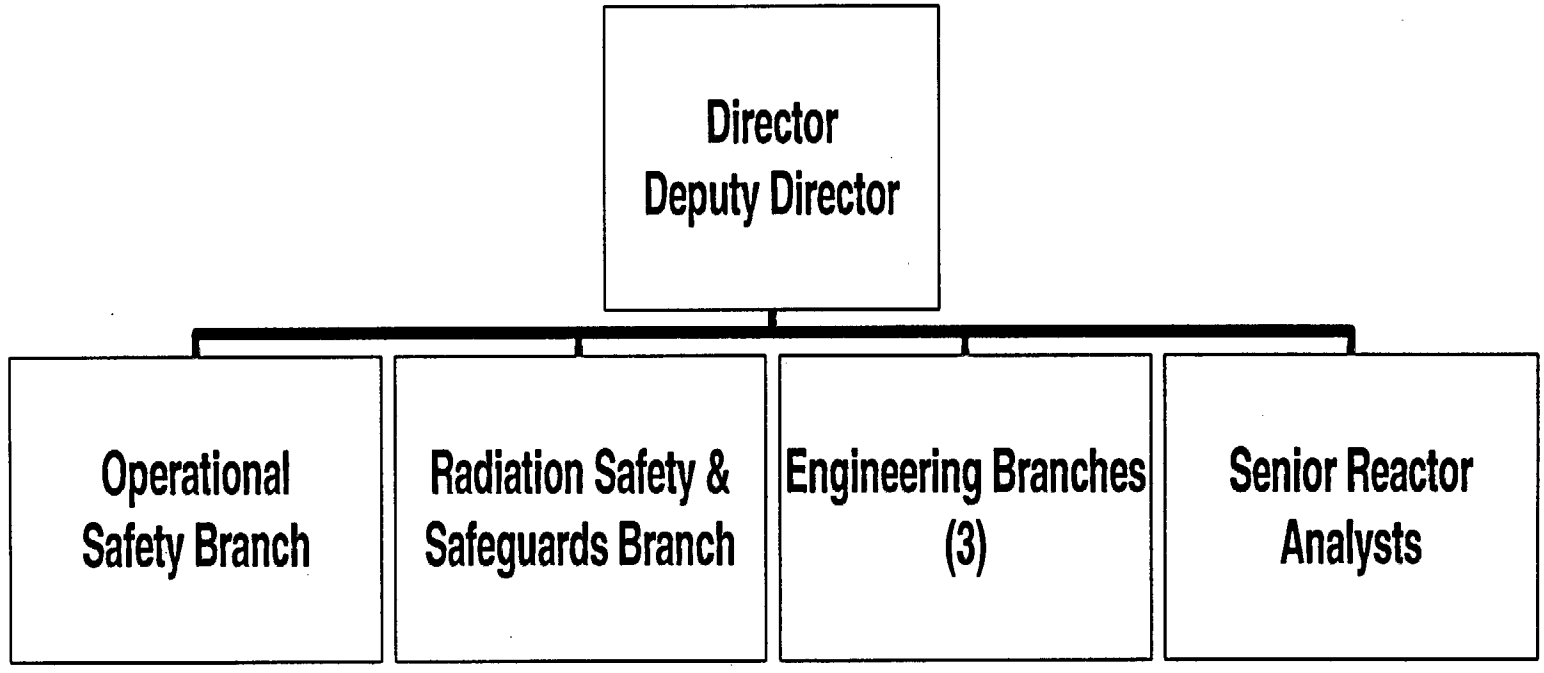
INDIAN POINT PROJECT



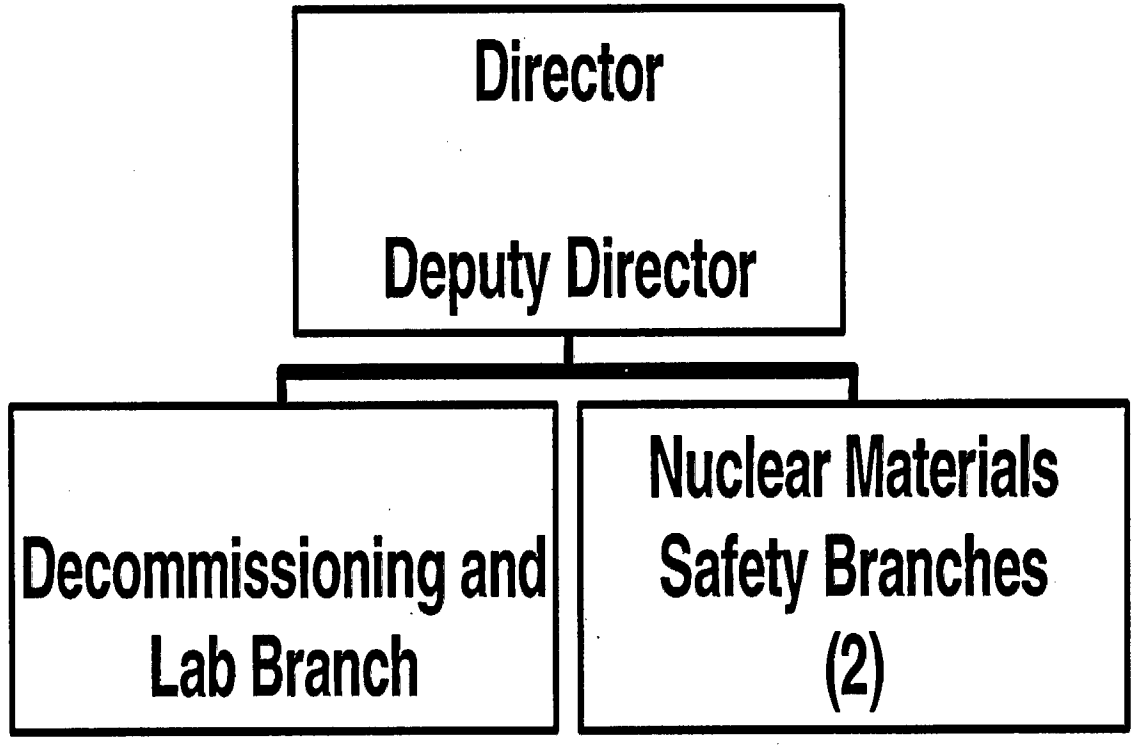
DIVISION OF REACTOR PROJECTS



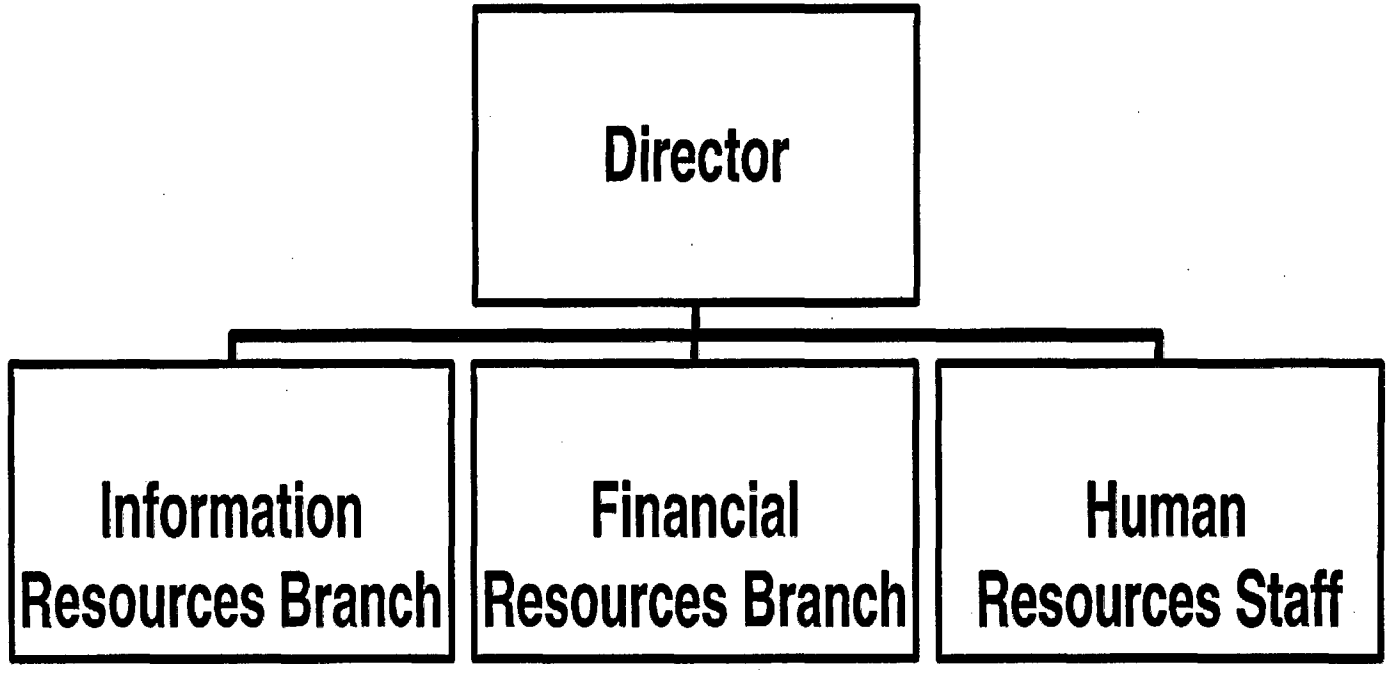
DIVISION OF REACTOR SAFETY



DIVISION OF NUCLEAR MATERIALS SAFETY



DIVISION OF RESOURCE MANAGEMENT



HIGHLIGHTS

- Resources and Staffing
- Planning and Budget Performance Monitoring
- External Communications
- Allegations/Enforcement
- Work Coordination Analysis Center

RESOURCES AND STAFFING

TECHNICAL STAFF GAINS/LOSSES

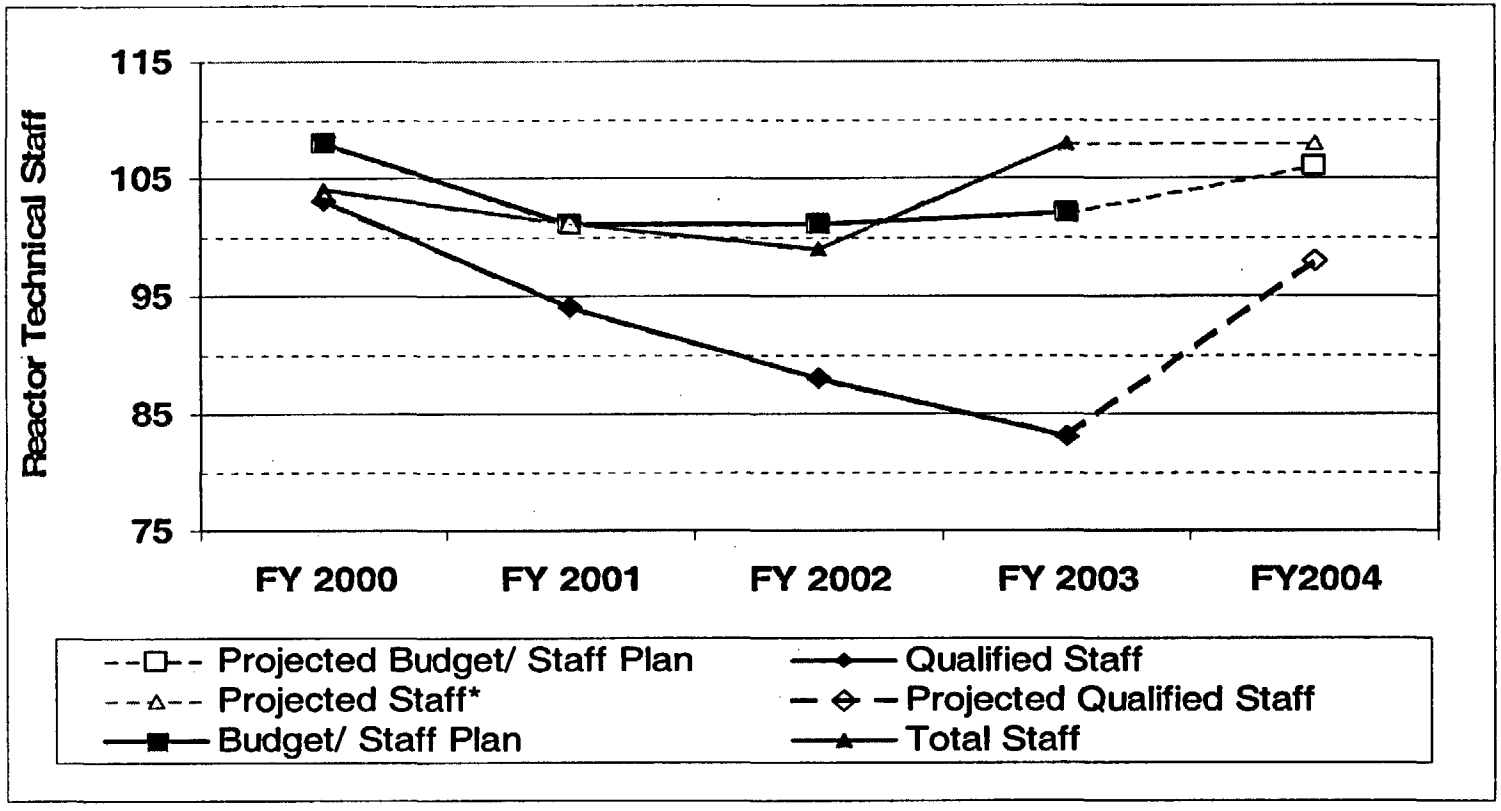
	FY00	FY01	FY02	FY03 *
GAINS	1	8	25	22
LOSSES	5	13	17	15

*** Includes known gains/losses for FY03.**

RESOURCES AND STAFFING (Cont'd)

DRP/DRS

April 2000 - April 2004



* Assume 10% Attrition

RESOURCES AND STAFFING (Cont'd)

	Average Years Nuclear Industry	Average Years NRC
Residents	8.0	10
Regional Inspectors	9.8	10

PLANNING BUDGET PERFORMANCE MONITORING

Process:

- Plan
- Communicate Expectations
- Monitor/Assess Results
- Adjust

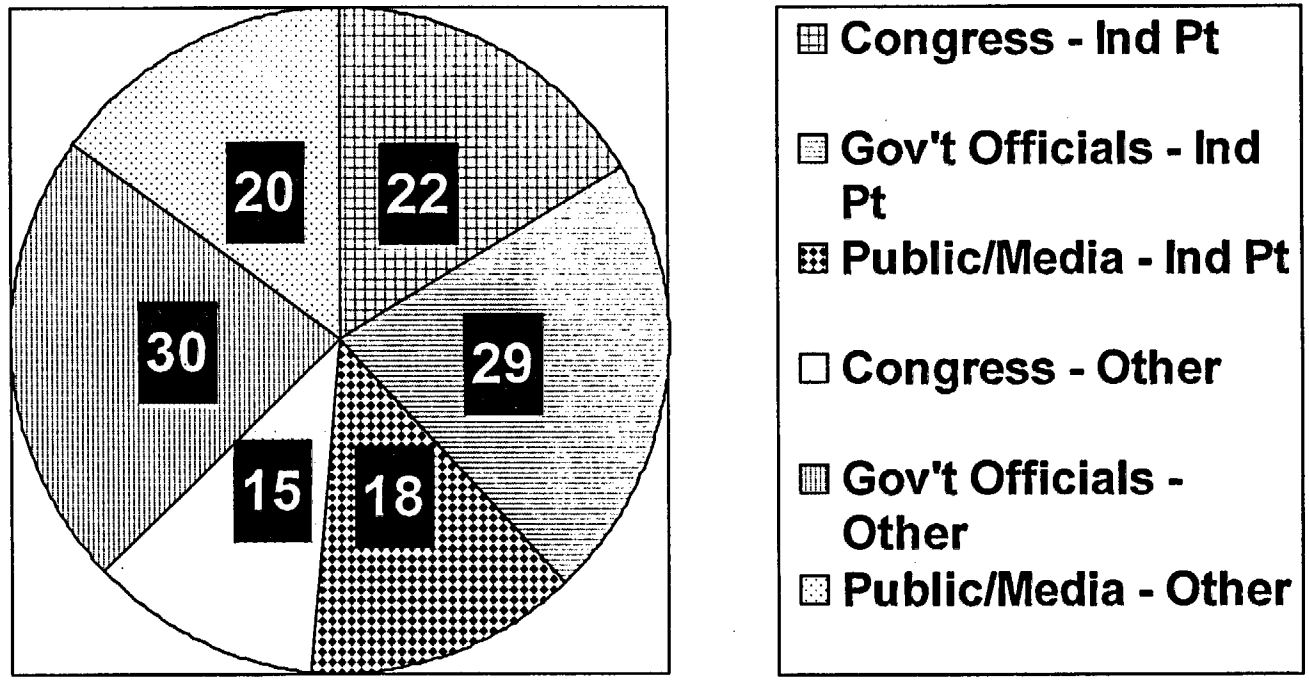
PLANNING BUDGET PERFORMANCE MONITORING (Cont'd)

Performance Monitoring and Self Assessment:

- Performance Metrics
  - Special Reassessment Team FY02
- "Event" Reviews and Lessons Learned
- Special Self-Assessments
- Senior Regional Management Site Visits
- Benchmarking

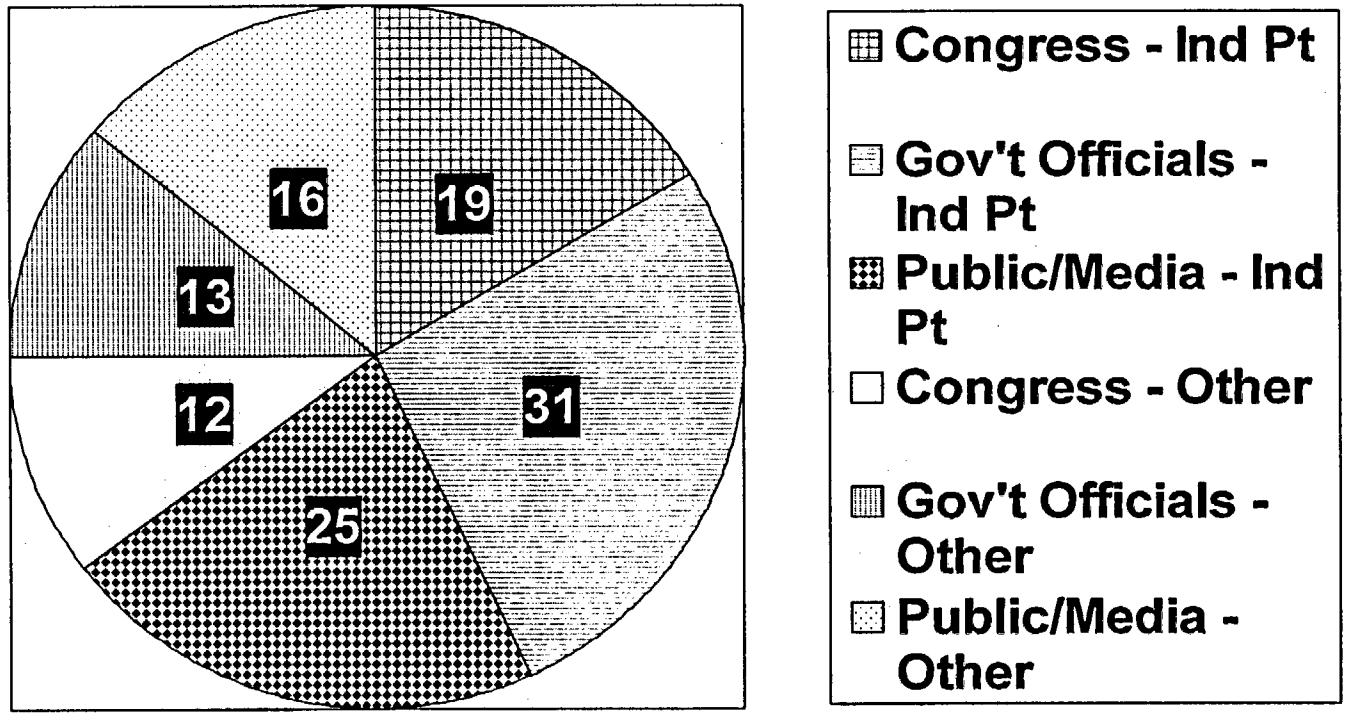
EXTERNAL COMMUNICATIONS

MEETING REQUESTS



EXTERNAL COMMUNICATIONS (Cont'd)

CORRESPONDENCE



ALLEGATIONS/ ENFORCEMENT

	FY00	FY01	FY02	FY03 *
Allegations Received				
Materials	55	48	59	33
Reactors	91	90	114	138
TOTAL	146	138	173	171
Enforcement/SDP Cases				
Materials	8	15	12	14
Reactors	8	13	10	11
TOTAL	16	28	22	25

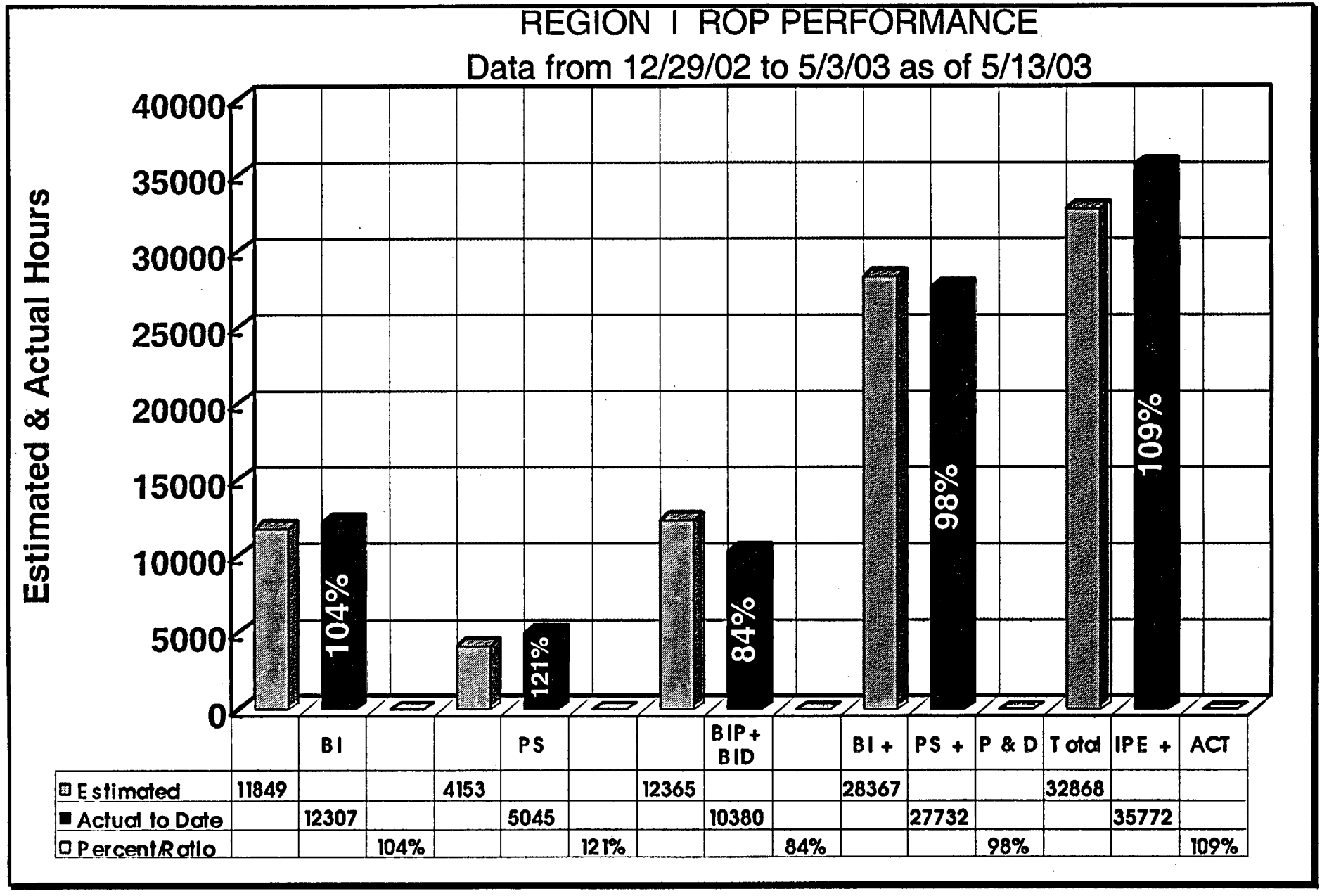
*** Projected based on Oct-May (8 months) data.**

ALLEGATIONS/ ENFORCEMENT (Cont'd)

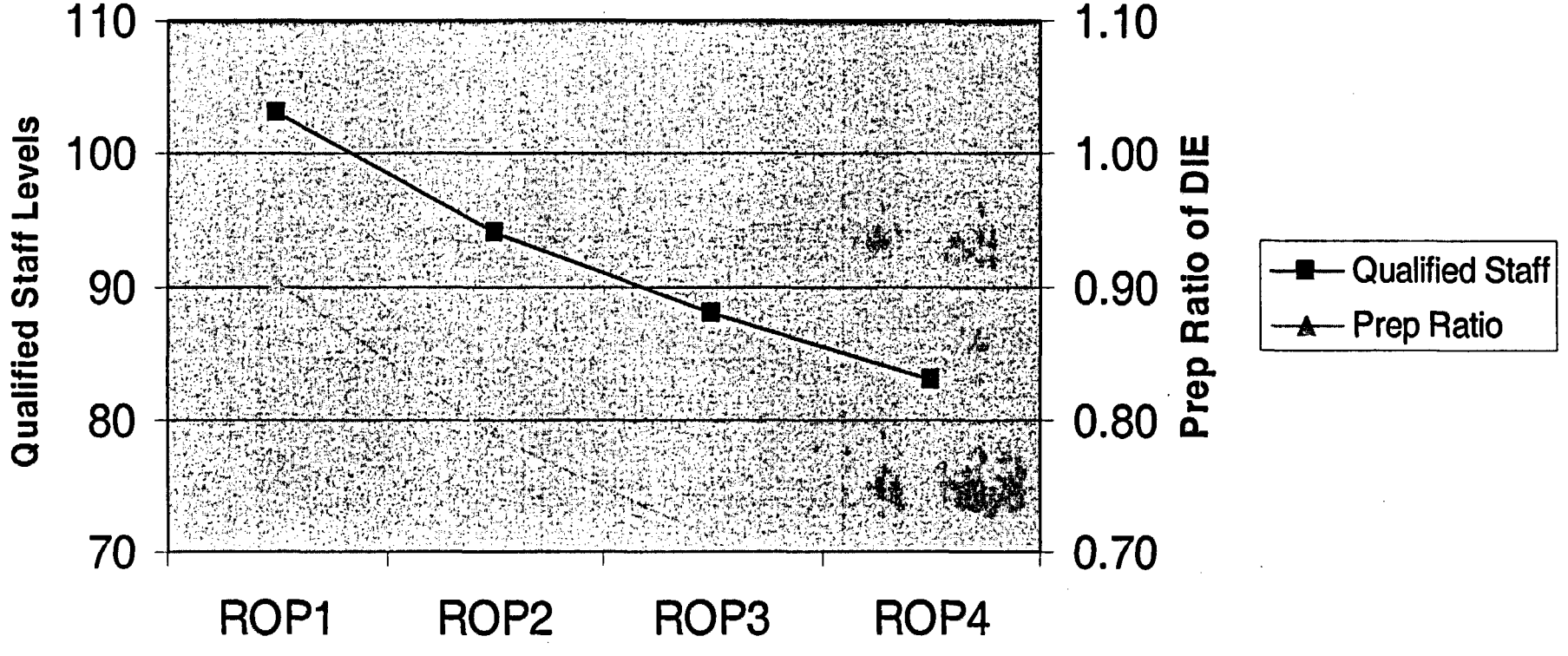
- Significant Effort in Allegations Continues
  - 35% Involved Security
  - 25% involved H & I
- Program Audit Results Consistently Outstanding

ALLEGATIONS/ ENFORCEMENT (Cont'd)

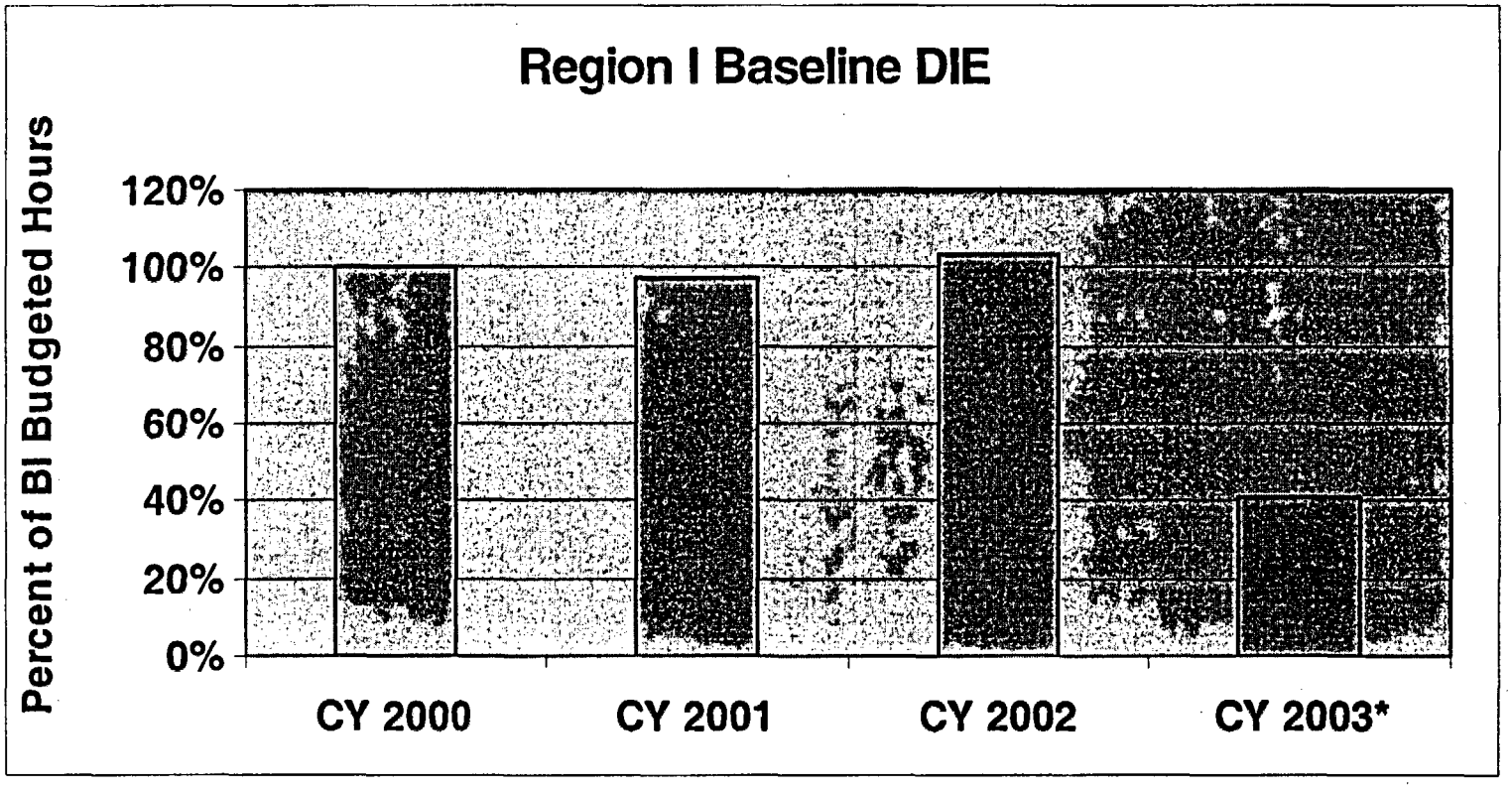
- Enforcement Workload Steady
  - 33% Involved Emergency Preparedness
  - 40% Involved Mitigating Systems
  - Some "Classic" Enforcement - e.g. Wrong Doing
- Program Audit Results Consistently Outstanding


REGION I ROP PERFORMANCE
Data from 12/29/02 to 5/3/03 as of 5/13/03
Estimated & Actual Hours
40000
35000
30000
25000
20000
15000
10000
5000
0
104%
121%
84%
98%
109%
BI
PS
BIP+ BID
BI +
PS +
P & D
Total
IPE +
ACT
Estimated 11849 4153 12365 28367 32868
Actual to Date 12307 5045 10380 27732 35772
Percent/Ratio 104% 121% 84% 98% 109%

Prep Ratio vs Qualifed Staff



WORK COORDINATION ANALYSIS CENTER



*To Date

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS BRIEFING
June 10, 2003

Region I

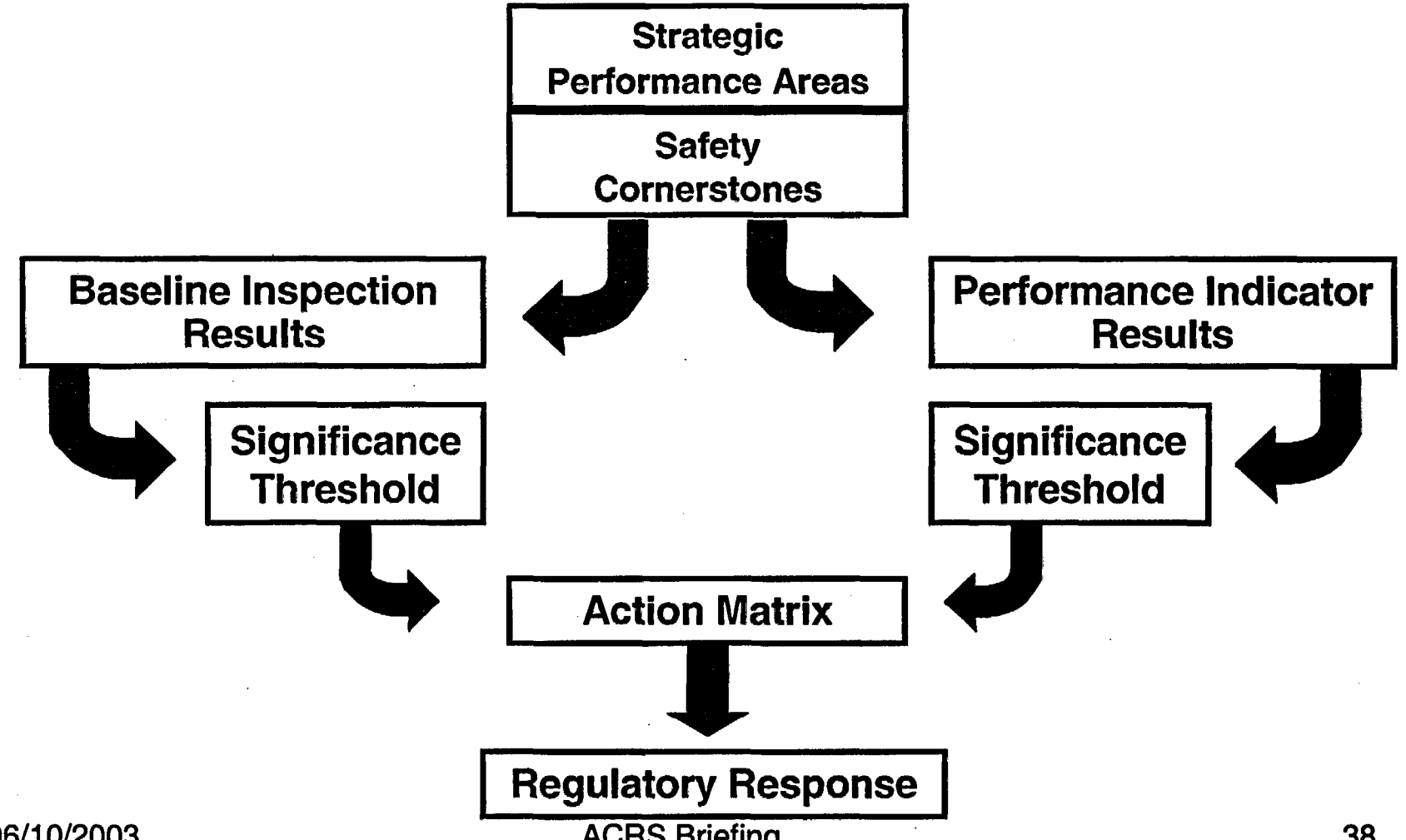
Plant Performance

Randy Blough

PLANT PERFORMANCE

- ROP OVERVIEW
- APPROACH TO INSPECTION
- REGION I PLANT PERFORMANCE

REACTOR OVERSIGHT PROCESS



APPROACH TO INSPECTIONS - - Philosophy

We add value to nuclear safety when we:

- **Focus our inspections and reviews on areas of safety importance**
- **Find problems**
- **Put those problems into safety perspective**
- **Communicate effectively**

APPROACH TO INSPECTIONS - - Continually Question

"Nuclear power is by its very nature potentially dangerous, and... one must continually question whether the safeguards already in place are sufficient to prevent major accidents."

President's Commission on TMI-2

SAFETY PHILOSOPHY

Defense in depth strategy

- **Accident Prevention**
- **Safety systems**
- **Containment (multiple barriers)**
- **Siting & emergency planning**
- **Continually question**

From NRC course "Perspectives on Reactor Safety"

CONTINUOUS ASSESSMENT:

We are always assessing licensee performance and our own oversight efforts.

- **ROP assessment process is continuous**
- **PI&R inspection has to be "continuous"**
- **RI challenges ourselves to always be assessing**
  - **Common themes**
  - **Cross-cutting areas**
  - **How well are licensee's "regulating themselves?"**

FOSTERING A QUESTIONING APPROACH AND CONTINUOUS ASSESSMENT

- Recognize good findings
- Coordinate, communicate – e.g., DRP/DRS a.m. meeting
- Inspector Seminars
- NRC management site visits
- Events, "events"
- PI&R samples
- Assessment meetings

SITE VISIT STATISTICS

	FY02	FY03 to date
RA/DRA	32	18
Division Management	49	36
Branch Chiefs	Numerous	Numerous

FOSTERING A QUESTIONING APPROACH AND CONTINUOUS ASSESSMENT

- Recognize good findings
- Coordinate, communicate – e.g., DRP/DRS a.m. meeting
- Inspector Seminars
- NRC management site visits
- Events, "events"
- PI&R samples
- Assessment meetings

APPROACH TO INSPECTIONS

Unique Sites

- **Nine Mile Point and Beaver Valley**
- **Salem/Hope Creek and Millstone Units 2 & 3**
- **Indian Point Units 2 & 3**

Goal

- **Adequate indication of licensee performance; efficiently**

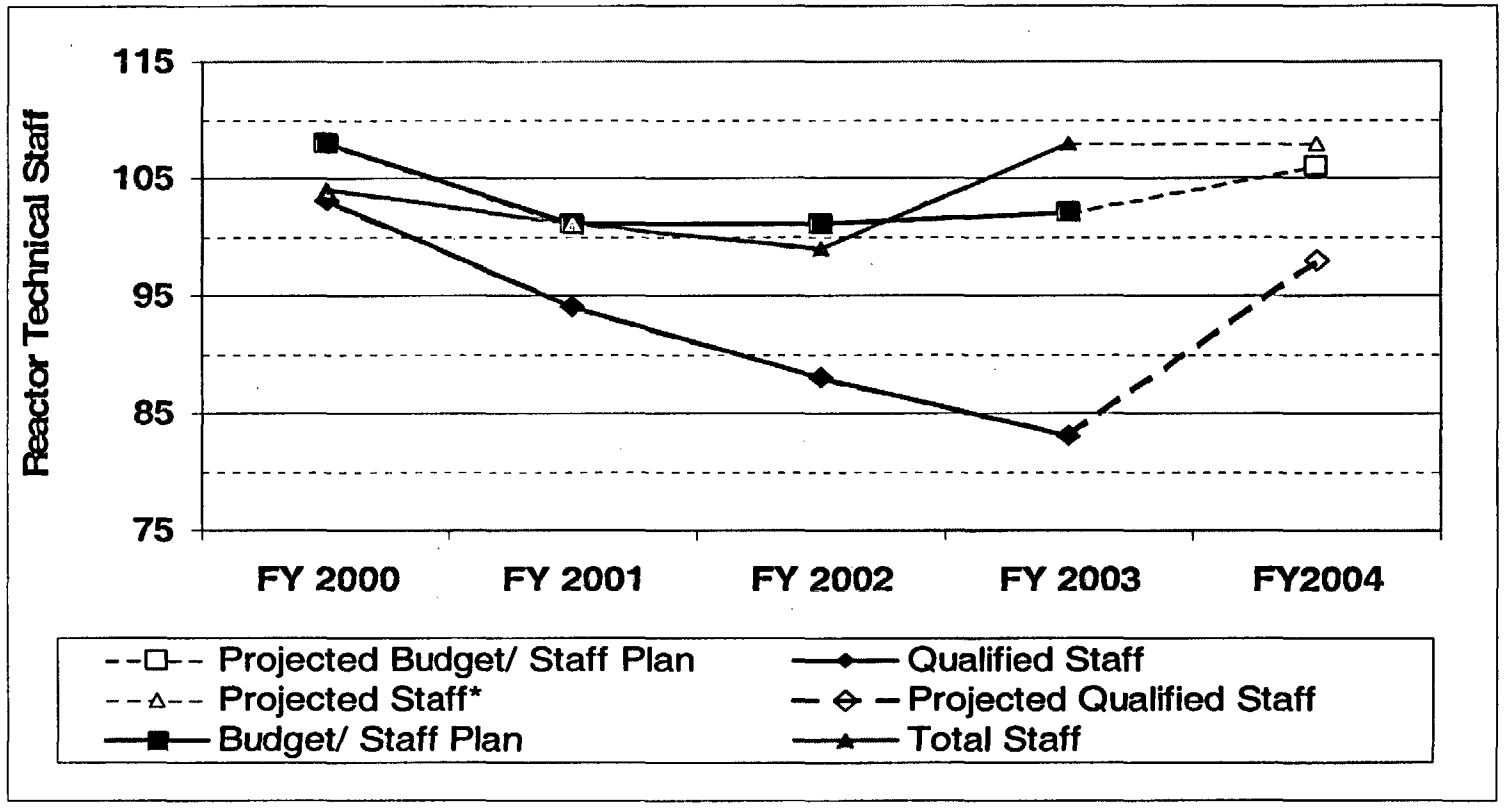
INSPECTION PROGRAM CHALLENGES

- **Accelerated turnover**
  - **Virtually NO external turnover**
- **Continuity at each site**
- **Complete the program with high quality**

RESOURCES AND STAFFING (Cont'd)

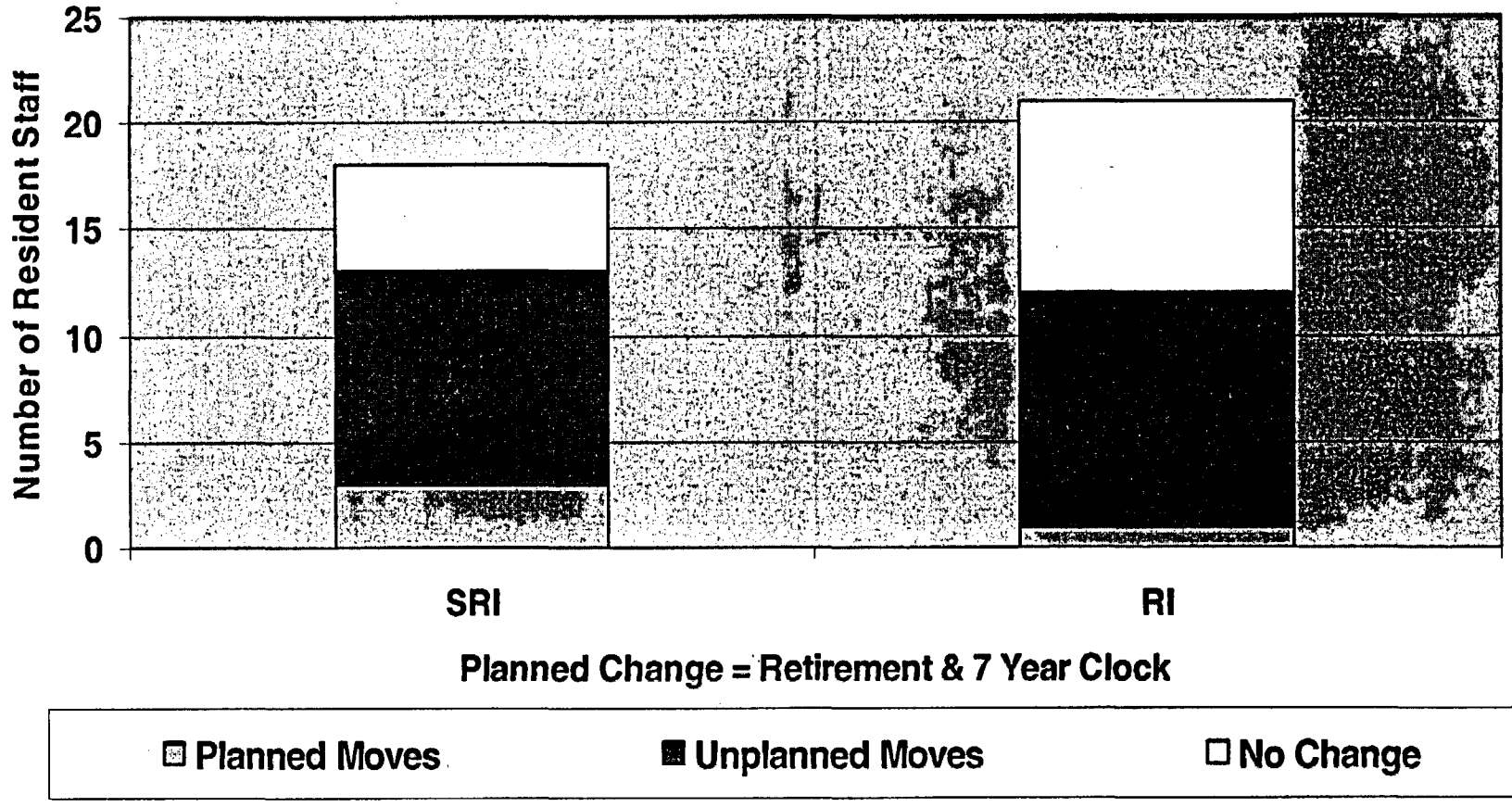
DRP/DRS

April 2000 - April 2004



* Assume 10% Attrition

Region I - Resident Changes
(Past Two Years)



RI PLANT PERFORMANCE - - Current Action Matrix Summary

Degraded Cornerstone: 1 unit

Indian Point 2 - Mitigating Systems (Exiting Degraded Cornerstone to Regulatory Response)

Regulatory Response Plants: 7 units

Ginna - Emergency Planning

Calvert Cliffs 1&2 - EP and Public Radiation Safety

Peach Bottom 2&3 - Emergency Planning

Nine Mile Point 1 - Mitigating Systems

Salem 1 - Mitigating Systems

Licensee Response Column: 18 units

CURRENT SUBSTANTIVE CROSS CUTTING ISSUES

- Defined in NRC Inspection Manual 0305, "Operating Reactor Assessment Program"
  - Significant Level Of Concern in the licensee's ability or progress in addressing cross-cutting area performance deficiencies.
  - Multiple Green or safety significant findings within assessment period with documented causal factors in the areas of human performance, PI&R, or safety conscious work environment.
  - Causal factors have a common theme. (i.e failure to follow procedures, ineffective evaluation of performance deficiencies, inadequate system engineering support of operability, etc.)
- Assessed every 6 months during Mid-Cycle and End Of Cycle Meetings

CURRENT OPEN SUBSTANTIVE CROSS-CUTTING ISSUES (Cont'd)

- **Indian Point 2 (Ongoing)**
  - Ongoing cross cutting issues identified in human performance and problem identification and resolution
    Untimely, Ineffective Corrective Actions (weak corrective actions associated with Firewall
    Skill weaknesses related to operator training issues (knowledge tech. Specs, configuration control)

- **Salem/Hope Creek (Initiated after most recent 2003 EOC meeting)**
  - Substantive cross cutting issue in PI&R
    Ineffective problem evaluation and untimely corrective actions

CURRENT OPEN SUBSTANTIVE CROSS-CUTTING ISSUES

- **Oyster Creek (Initiated after most recent 2003 EOC meeting)**
  - **Substantive cross cutting issue associated with Human Performance Human Performance deficiencies focused around procedural adherence**
- **Susquehanna (Initiated after most recent 2003 EOC meeting)**
  - **Substantive cross cutting issue associated with Human Performance Numerous findings related to operators failure to correctly implement procedures**

REGION I - PLANT PERFORMANCE 2000 - 2003

Indian Point 2 - Multiple Degraded Cornerstones / Degraded Cornerstone

Degraded Cornerstones:

Millstone 2 -	Mitigating Systems - HPI and AFW
Calvert Cliffs -	Mitigating System - AFW
Vermont Yankee -	Security - OSRE results

Regulatory Response Column: typically 1/4 to 1/2 of Region I plants

CROSS-CUTTING ISSUES - - ROP CYCLES 1- 4

- Have involved ½ of Region I sites

FitzPatrick	Calvert Cliffs
Seabrook	Hope Creek
IP2	Salem
TMI	Oyster Creek
Millstone 2	Susquehanna

- PI&R and Human Performance (60/40)
- Duration 5 months to 2+ years
- Generally helped focus company attention

APPROACH TO INSPECTIONS - - Philosophy

We add value to nuclear safety when we:

- **Focus our inspections and reviews on areas of safety importance**
- **Find problems**
- **Put those problems into safety perspective**
- **Communicate effectively**

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS BRIEFING
June 10, 2003

Indian Point Performance

Brian E. Holian

INDIAN POINT

- Challenging case where NRC oversight made a difference
- Strong NRC oversight spanned old and new processes
- Pioneering, precedent-setting case under ROP Action Matrix
  - "Escalation" and "De-escalation"
  - Tools and Flexibility
- Significant impact on regional resources and management attention

INDIAN POINT

- Plant Data
- IP2 Performance History
- Oversight Process
- Stakeholders
- Challenges

PLANT DATA

- Buchanan, NY: 26 miles north of NYC
- Unit 1: B&W PWR
  - Ceased operation in 1974
  - Purchased by Entergy Sept. 6, 2001
- Unit 2: 4 loop Westinghouse PWR
  - Commercial operation since 1974
  - Purchased by Entergy Sept. 6, 2001
- Unit 3: 4 loop Westinghouse PWR
  - Commercial operation since 1976
  - Purchased by Entergy Nov. 21, 2000

IP2 PERFORMANCE HISTORY PRE-ROP

- NRC Team Inspections
- Plant Events
- Extended Shutdowns and Confirmatory Action Letters
- SALP
- Civil Penalties
- Independent Operating Assessments

IP2 PERFORMANCE HISTORY CHART- INPUTS TO NRC ACTION MATRIX (EXPLANATORY NOTES FOLLOW) - Cont'd

	CY 2000				CY 2001			
Cornerstone	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
IE		White PI	Red	Red	Red	Red	Red	Red
MS	Yellow White PI	Yellow White PI	Yellow White PI	Yellow White PI	Yellow	Yellow	Yellow	Yellow Yellow
BI	Yellow PI							
EP	White	White White White White	White White White	White White White	White White White	White White White	White White White	
Matrix Column	N/A	consider MDC	MDC	MDC	MDC	MDC	MDC	MDC

8/99 Event*

2/00 SGTF

Entergy IP3

Plant Restart

95003 INSP

Entergy IP2

Operator Requal Hi Failure Rate

* Note: 8/99 Event was Pre-ROP. Sensitivity Study in Commission Paper

IP2 PERFORMANCE HISTORY CHART- INPUTS TO NRC ACTION MATRIX (EXPLANATORY NOTES FOLLOW)

	CY 2002				CY 2003			
Corner-stone	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
IE	Red	Red	Red					
MS	Yellow Yellow	Yellow Yellow	Yellow Yellow White	Yellow White	Yellow White	Yellow White	White	
BI								
EP								
Matrix Column	MDC	MDC	MDC	DC	DC			

CR Firewall

Public Security Issues

IP2 OVERSIGHT

- ROP Action Matrix
- IP2 Oversight Plan
- Focus on fundamental issues
- Technical Coordination Team
- Communications Coordination Team
- Continued heightened oversight - adjustments in NRC activities

STAKEHOLDERS

- Concerned Citizens
- Public Interest Groups
  (e.g. Riverkeeper)
- Congress
- State
- Counties
- Media

STAKEHOLDERS (Cont'd)

- NRC Offices
  - NRR - Research - NSIR
  - OI - OGC - OCA
  - OPA - EDO - ACRS
- Federal Agencies (e.g. FEMA)
- Independent Oversight
  - GAO
  - OIG

CHALLENGES

- Long-standing Cross Cutting Issues
  - Human Performance
  - Corrective Actions
- Site Integration
- Design Basis Initiatives
- Site Security
- Emergency Preparedness

ADVISORY COMMITTEE ON REACTOR SAFEGUARDS BRIEFING
June 10, 2003

Inspection Results

Wayne D. Lanning

SIGNIFICANT CHALLENGES

- Scheduling and Staffing Inspections
- Transition of Qualified Staff/ Coping Measures
- External Stakeholder Demands
- Plant in Multiple Degraded Cornerstones
- Post 9/11 Activities
- Evolving Significance Determination Process
- Significant Events

STAFFING INSPECTIONS

- Impact of Staff Turnover
- Coping Measures
  - Consultants
  - Support from Headquarters and Other Regions
  - Expedited Basic Quals
  - Overtime
  - Delayed Inspections
  - Effective Use of Examiners

STAFFING INSPECTIONS (Cont'd)

- Implemented Highly Successful Hiring Strategy
  - Overhires
  - Rehired Annuitants

SIGNIFICANCE DETERMINATION PROCESS

- Ongoing SDP Improvement Plan
- Significant Support for EP, RP, and FP Revisions
- Complex Tool
  - Resource Intensive
  - Assumption Driven/Root Cause Dependent
  - Requires SRA Expertise for Phase 2

SIGNIFICANCE DETERMINATION PROCESS (Cont'd)

- Insights into Licensees' PRAs
  - Quality
  - Models/Failure Rates

SDP RESULTS

SDP Results are Timely and Seldom Challenged by Licensees

FY 01	1	Red (SGTF)
	1	Yellow (TDAFWP)
	7	White (2EP, 3MS, SEC, RP)
FY02	2	Yellow (Security, Requal)
	5	White (3 EP, 2 MS)
FY03	5	White (2 EP, 3 MS)

SIGNIFICANCE DETERMINATION

- Indian Point 2 Steam Generator Tube Failure Event
- Seabrook Emergency Diesel Failure
- Salem Emergency Diesel Turbocharger Failure
- Various Emergency Preparedness Issues

STAFF MOTIVATION /SAFETY FOCUS

- Focus on Safety/Questioning Attitude
- Challenged to Find Problems
- Communicate Insights to Licensees
- ROP Challenges (threshold for documenting issues)
- Recognition for Efforts (Performance and Instant Cash Awards)
- Develop Staff...Advanced PRA Training

INSPECTION FINDINGS

- Nine Mile Point 1 Reactor Building Closed Loop Cooling System Integrity
- Limerick Preconditioning
- Fitzpatrick Inadequate Cooler Flow
- Millstone Charging System
- Fitzpatrick Locked Valve

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June 10, 2003

Significance Determination Process

Eugene Cobey

Significance Determination Process

Salem Unit 1

Catastrophic Failure of the 1C Emergency Diesel Generator Turbocharger

TIMELINE

4/2 - 9/02	Recurring fuel oil leaks on 1C EDG
9/10/02	Decision to conduct Special Inspection
9/13/02	1C EDG turbocharger failed
9/16/02	Commenced Special Inspection onsite
1/30/03	Special Inspection exit meeting
3/14/03	Inspection report issued
3/24/03	Significance/Enforcement Review Panel
3/31/03	Preliminary WHITE finding issued
5/01/03	Final WHITE finding issued

SPECIAL INSPECTION

- Four previous turbocharger failures
- Vibration monitoring for the EDG turbochargers ineffectively implemented following 1998 failure
- Initiated corrective actions following 1990 failure, but did not implement

PERFORMANCE DEFICIENCY

Corrective actions for previous EDG turbocharger failures had not been effective in preventing recurrence of the problem

SDP ASSUMPTIONS

- Cause of turbocharger failure - fatigue failure of inducer blade
- EDG not capable of fulfilling its safety function for approximately 283 hours
- EDG not recoverable following turbocharger failure

SDP PROCESS

- SDP Phase 1 screened inspection finding to Phase 2
- SDP Phase 2 estimated risk significance as WHITE
- SDP benchmarking effort identified Phase 2 process underestimated risk significance of findings associated with EDGs
- Finding evaluated using SDP Phase 3 process

SDP PHASE 3

Internal Initiating Events:

- Used NRC SPAR model Revision 3.02
- Changes:
  - Incorporated updated LOOP initiating event frequencies and non-recovery probabilities from NUREG/CR-5496.
  - Incorporated Rhodes model for reactor coolant pump seal behavior
  - Modified emergency AC power success criteria
- Results: ΔCDF = 8.64E-6 per year (WHITE)

SDP PHASE 3 (Cont'd)

External Initiating Events:

- Seismic events not significant contributors - likelihood of seismic-induced LOOP several orders of magnitude less than random LOOP
- High winds, floods, and other external initiators not significant contributors – qualitatively determined
- Fire events not quantified – information needed for risk estimation (e.g., mitigating equipment cable routing, etc.) not available for review

SDP PHASE 3 (Cont'd)

Large Early Release Frequency (LERF):

- Large dry containment
- Events of concern
  - Inter-system LOCA
  - Steam generator tube rupture
- Events of concern not adversely impacted by findings associated with EDGs - no attributable increase in LERF

SDP PHASE 3 (Cont'd)

Conclusion:

- **Analysis uncertainty due to not quantifying the risk contribution of fire events offset by uncertainties in assumptions**

- **Safety significance of inspection finding was WHITE**

CHALLENGES

- Characterization of performance deficiencies
- Establishing assumptions for risk analysis (e.g. fault exposure time)
- Quality of NRC and licensee PRA tools
- Lack of tools to evaluate risk significance of external initiators at most plants
- Treatment of uncertainty in SDP risk analysis
- Licensee support for SDP process

SIGNIFICANCE DETERMINATION PROCESS

Questions ?