carefully, also. In fact, I would like to put in the record at this point a letter that the Board sent to Admiral Bowman complimenting him on those reports, because we find them very helpful. Thank you. Any other questions?

DR. MANSFIELD: I second that: especially the radiological safety reports and environmental reports.

CHAIRMAN CONWAY: Yes, very important, and we thank you. We thank you for your assistance here today. Thank you very much. Now we have the experienced representatives from the Nuclear Regulatory Commission, Ms. Cynthia Carpenter and Dr. Edwin Hackett. If you would each introduce yourselves for the record.

MS. CARPENTER: Good morning. My name is Cynthia Carpenter. I'm the Deputy Director of the Division of Inspection Program Management from the Nuclear Regulatory Commission.

CHAIRMAN CONWAY: And your associate?

DR. HACKETT: Good morning. My name is Ed Hackett. I'm the Project Director for NRC's Project Directorate II, which oversees the plants in NRC's Region II, Southeastern United States.

CHAIRMAN CONWAY: And your associate?

MR. GIBBS: I'm Russell Gibbs. I'm the Senior Reactor Analyst in the Office of Nuclear Reactor Regulation.

CHAIRMAN CONWAY: Very good. Dr. Hackett, I thought you might have wanted to say something earlier.

DR. HACKETT: I did, Chairman, if that's appropriate at this point.

CHAIRMAN CONWAY: Sure.

DR. HACKETT: I was reacting to a question that the Technical Director raised where there are some obvious differences, as Mr. Beckett identified in his opening remarks, between how the NRC conducts business versus Naval Reactors.

CHAIRMAN CONWAY: That's why we're asking both of you here. We're trying to learn from your experience.

DR. HACKETT: It's an interesting contrast. One of the questions went to use of consensus standards, particularly in how we regulate. Of course, we actually prefer to regulate that way, when we can. We hold out that we have 51 percent of the stock, but in most cases, we have a regulation, 10 CFR 50.55(a), which directly endorses the ASME [American Society of Mechanical Engineers] code. That

is a preferred path for us to operate through and we encourage that.

Often times, I think it was referred to earlier, there's sometimes a glacial pace associated with some of these consensus activities, and the NRC can't afford to wait for that. In those cases, we'll act as was described by the Naval Reactors representatives, but we do try to go that path. I just thought I'd react to that one. Thank you.

CHAIRMAN CONWAY: Thank you. Cynthia.

MS. CARPENTER: Good morning. As I stated before, I'm the Deputy Director of the Division of Inspection Program Management. I have oversight responsibility for the Reactor Oversight Process [ROP]. My previous job before this was as the branch chief for the Reactor Inspection Program Branch, which meant that I had the program responsibility for the reactor oversight process.

It's a pleasure to be with you today to share some of the experiences that the NRC has had in the last couple of years in developing and in implementing the new reactor oversight process. [With me] today, as already introduced, Mr. Russell Gibbs is a former senior resident inspector in the field. He was actually in the field when we transitioned to the

new process. He is also now one of our experts in probabilistic risk assessment. He's here with us today in case you have any questions in those areas.

Our division developed the Reactor Oversight Process, and we did this in conjunction with our four regional offices. Now we provide the program oversight responsibility for the ROP as it's implemented by the regional offices, and we just have the oversight responsibility.

Today I would like to share with you how the NRC interacts with our commercial nuclear power plants in the ROP. This begins each year with routine inspections that the agency conducts at each of the 103 operating facilities. It ends with an annual agency assessment of the licensees' performances. That's a culmination of the inspections that are performed throughout the year and also performance indicators that were established to provide an objective measure to measure performance. I'll also discuss some of the insights you might be interested in, in a program that we're trying to initiate right now in the licensees conducting their own self-assessment.

Before I go any further, I'd like to share with you the NRC's mission. Our agency is about 3,000

employees both in our Rockville Headquarters and our four regional offices. We're committed to protecting the public health and safety, and the environment from the effects of radiation from nuclear reactors, materials, and water facilities.

Our mission is to ensure that the commercial nuclear power plants are operated in a manner that provides adequate protection of the public health and safety and the environment and also protects against radiological sabotage and the theft or diversion of special nuclear materials. Today I'll talk to the part that oversees the commercial nuclear power plants. As I said, there are 103 operating reactors out there today.

An important aspect of our regulatory philosophy is that the licensees that we regulate have the primary responsibility to meet regulatory requirements and to ensure the safe operation of their facilities. The NRC, however, is the licensing authority, and we provide independent oversight of licensee activities through our inspections and our assessments of their performance, if warranted.

In our oversight role, we have also in the last few years taken significant steps towards a more risk-informed approach to regulation, where practical.

We've changed our oversight process to include insights from probabilistic risk assessments. We believe that we're on the cutting edge of risk-informing government, and so far, we've had notable success with needed changes in this area.

Basically, this risk-informed approach to regulation is a graded approach on our part. The more important the issue is from a risk-informed perspective, the more that the NRC engages. In cases where risk technology is not practical, we use a more deterministic approach using available information and our past experience when needed.

In order to be a more efficient and effective regulator, the NRC established four strategic performance goals. These goals were established to resolve the various stakeholder input in the way that we regulate the licensees for which we have authority. These stakeholders are both internal to the NRC and external to the NRC. Several years ago, we and others recognized the need to improve our oversight of the operating plants. For commercial nuclear reactors, the ROP is the process that we now use to improve the way we regulate them.

Our performance goals include maintaining safety. It's important to note that we do not

stipulate that we need to improve safety, but safety is to be maintained. We have specific goals for maintaining safety, such as maintaining a low frequency of plant events that could lead to a nuclear reactor accident. Having zero significant radiation exposures resulting from commercial nuclear reactors are ways that we measure this performance goal.

Enhancing public confidence. Prior to the new process, we and our stakeholders were concerned that the NRC did not clearly present our assessment of licensee performance. It was not objective. It was rather subjective in many cases. We've taken significant actions to address this particular concern.

For example, all of our inspection results and all of our assessments of the licensee performance are clearly presented to the licensees and to the public. We have a webpage. When you go to the webpage, you can see that every one of the inspection findings are noted, and how the agency has addressed them, and how the licensee has addressed them. These are easily viewed for each and every facility.

An example is that if you go to the webpage, you'll notice that we have a color scheme. For issues that are very low risk significance, they

are green. For issues that are high risk significance, it's red. We also conduct annual meetings in the vicinity of each and every power plant to inform the licensee and members of the public of our assessment of their performance, make NRC activities and decisions more effective, efficient, and realistic.

The commercial nuclear industry and others did not believe that our previous assessment process was predictable, that it was scrutable, and not always understandable. Many believed that we were too subjective. So the ROP was designed, and it's been effective in addressing these concerns.

We use an open, risk-informed process resulting in licensees and the public understanding more about oversight processes, particularly in the assessment area. The process, because it is risk-informed and is laid out in open and objective fashion, has significantly improved the effectiveness of our agency. Feedback from our licensees and other stakeholders has been very positive in this area.

Finally, reducing unnecessary regulatory burden. We made significant change in this area, primarily using probabilistic risk technology where possible to help us define what aspects of plant

operation were most important. Based upon this information and our experience, the agency identified those aspects of licensee performance that are important to our mission and, therefore, merit regulatory oversight.

We also defined a threshold where issues that were below a certain level of risk would require the licensees to evaluate and correct it without NRC involvement. These are issues of very low safety significance. We do, however, at a later time go back and review selected issues and associated corrective actions to ensure that the licensees took appropriate corrective actions.

DR. HACKETT: Cindy, if I could make a further comment on that. That goes to a question that came up previously also. Maybe it's not unique to our environment, but certainly the unnecessary burden piece is a real challenge for the NRC. In a lot of cases, our regulations were designed very conservatively. Removing the conservatism is a difficult process for us to do. Cindy said, I think, a big help in that regard is the probabilistic risk assessment technology, but it's still something that we have to pay very careful attention to deterministic approaches and also defense-in-depth when we are going

through this.

MS. CARPENTER: Next, let's discuss the development process. In the ten years prior to the development of the ROP, commercial nuclear power plants had been operated safely in overall plant performance. That was indicated by trends that both the NRC and the industry were tracking. This improvement in plant performance was attributed in part to successful regulatory oversight and also to the maturity of the industry.

Despite this success, the NRC recognized that the inspection, the assessment, and the enforcement processes sometimes were not clearly focused on the most safety important issues. It was redundant many times, and we were overly subjective with the NRC action taken in a manner that was at times neither scrutable nor predictable.

We believe that an independent regulatory oversight process is one in which the agency's decisions are based on unbiased assessments of licensee performance. Observations were also echoed by external stakeholders such as the Congress, the industry, and the public. This gave the NRC the opportunity to improve our regulatory oversight of our licensees.

To achieve our performance goals, we've made significant changes to our oversight of the nuclear power operations. We developed new objectives for the program, mainly improving the objectivity of the oversight process. So that the subjective decisions and judgment were not the central focus of our process, we needed to improve the scrutability of these processes, so that NRC actions had a clearer tie to licensee performance. We also needed to risk-inform the processes so that NRC and the licensee resources were focused on those aspects of performance that have the greatest impact on safe operation.

The development of the program took over two years, and it continues to evolve today. We continue to make changes in the program to improve it and to incorporate lessons learned. You will hear from Ed, who will talk about the Davis-Besse lessons learned. There are many improvement items there for the ROP. As we continue through the process, we learn other lessons, and we continue to make those improvements, and we have long-term changes to the program.

Development of the new program started in 1999, and it was highlighted by a six-month pilot effort. This pilot included nine nuclear plants, and

they were representative of two plants from each of the four regions. They represented different reactor types and also different containment types.

The pilots were then reviewed by the NRC, and there was also an advisory panel that was established under the Federal Advisory Committee Act [FACA] panel. The purpose of the pilot was to use the newly designed inspection procedures, the newly designed Significance Determination Process [SDP]. This is a process that is used to take inspection findings and to determine their risk significance to see at what level the agency should engage. We also had performance indicators.

The outcome of the SDP, which is the risk significance of our inspection findings and independent performance indicators, are then summed up in what is called "an action matrix." This action matrix is the primary tool that we use to determine overall licensee performance and what actions that the agency should take. It lays out objectively and clearly based upon the significance of the inspection findings the number of inspection findings and those performance indicators that cross predetermined thresholds, what the appropriate regulatory response should be for overall performance.

During the program development, there was extensive public involvement both in the nuclear industry, which continues to be represented by the Nuclear Energy Institute [NEI], and public advocacy groups such as Union of Concerned Scientists, who provided input as we developed the program. We believed that in order to increase public confidence, that increased public involvement was necessary, and that involvement continues today. We have monthly meetings with all of our stakeholders to continue to oversee the program and to see what changes we need to continue to make in the program.

Today the ROP processes is in its fourth year of implementation. We believe that we've had notable success in meeting our performance goals. The nuclear industry, which some might say are our best external critics, acknowledges that we have made significant progress to improving our objectivity, our predictability, consistency, and understandability from the previous program.

We do, however, recognize that more improvements are needed in the program and the fundamental changes that we've made in our oversight process. Risk assessment continues to be an area of needed improvement. For example, attempting to

determine the significance of a inspection finding for which no probabilistic risk information exists continues to present a challenge to us.

As I mentioned earlier, certain aspects of what we regulate are not probabilistically based, and others are immature in their development, the unforeseen situations which arise, such as what happened at the Davis-Besse plant. It's important to our process to have the flexibility that we quickly and we effectively adapt to these situations to allow us to perform our regulatory function.

As Ed will talk about in his presentation, it's essential that the lessons learned from Davis-Besse be successfully incorporated into the ROP so that we prevent future similar situations. We are actively doing that.

Finally, we have performance indicators. We continue to make changes to that also. One of the changes that we are looking at right now is a performance indicator which is very risk-based. That's important to us because if we adopt this performance indicator, that would mean that we would reduce our inspection efforts in that particular area.

CHAIRMAN CONWAY: Hold on a second. Dr. Eggenberger.

VICE CHAIRMAN EGGENBERGER: Can you give me an example of where you were performing regulation and were criticized for being too subjective?

MS. CARPENTER: In the old program, we used to have what was called a "problem plant list." It was not always clear to the licensees how they ended up on that list or how they received additional regulatory attention or additional inspections. So one of the things we've done is this action matrix that we have. If you have two performance indicators which cross the green-white threshold, they go from very low safety significance to low to moderate safety significance.

This action matrix makes it very clear what inspections the agency will engage in. It's very clear to the utilities where they are at in the process, whether they are in what we call the "licensee response" column, a "regulatory response" column. It was not that clear previously. They didn't always understand why we suddenly would engage with inspections. If we engage now, with supplementary inspections, they understand that the reason is that they crossed the green-white threshold. They crossed from findings that were low to moderate risk significance.

VICE CHAIRMAN EGGENBERGER: But under the previous methodology, a decision was made as to what color it should be, whether it was red or green or whatever box you put it in as to being a problem plant or not a problem plant. But wasn't there a methodology for determining how to do this?

MS. CARPENTER: There was. It was what was called the Systematic Assessment of Licensee Performance [SALP] process.

VICE CHAIRMAN EGGENBERGER: But did it track technologically?

DR. HACKETT: I guess I could chime in. I think what Cindy mentioned is the clear case, which was that SALP was a very effective process, and it did address the points that you're making.

VICE CHAIRMAN EGGENBERGER: Yes.

DR. HACKETT: I think that part of the ROP was aimed at was communicating that better.

VICE CHAIRMAN EGGENBERGER: Well, that's what I was trying to say. Was it just a matter of not telling or the people not knowing exactly the details of how you made your decision? Am I right?

MS. CARPENTER: That was right. It was not always clear to the licensees and to the public how we came to some of the SALP scores. It was not

always clear to them what kind of input was used into that. So it was considered to be more subjective than objective.

VICE CHAIRMAN EGGENBERGER: I don't want to argue with you, but what I'm trying to believe is that it was not subjective and that you did have the technical details located somewhere that allowed you to make the decisions. However, those details just hadn't been communicated in a way to the licensee. Am I right?

DR. HACKETT: I think that's the correct interpretation. Also I'd add that not all subjectivity is bad. Part of what Cindy said is that we want to have a risk-informed process for our inspections. However, we also want to have our experienced inspectors, I guess, for lack of better words, to be able to go from their gut. That might run contrary to risk-informing on occasion. They see something in a plant that they want to pursue, and that particular thing is not high up in the action matrix. We want them to have the wherewithal to pursue that, and they do under the program.

CHAIRMAN CONWAY: Okay. Thank you.

MR. FORTENBERRY: That question was along several lines actually. I'm sure you've had to

address it before. What would be the downsides of having a more predictable -- Well, I guess it was a previous slide, "We are now very predictable." It reminds me of experiences that I've had under instructors where they said, "Now the point I'm about to say next is important," and of course immediately forget about everything else. That's sort of an analogy. I'm sure you've had to address the question before. How would you answer that, as far as: are there downsides to being totally predictable in terms of an oversight body?

DR. HACKETT: I think I'd say obviously the answer is, "Yes;" to be totally predictable or scripted, such that folks know where you are coming from every time to the point that we've heard and known that licensees keep databases on NRC inspectors and their predisposition for going after certain things. So that is a bad aspect of it.

The counter side to that - I think this is like the Naval Reactors discussion of walking a fine line - at least to me, the other piece of that is what we would call "regulatory stability," the ability of the licensees to look at the NRC with some level of consistency on how they are going to come down in certain areas in a broader sense. But I think it is

a bad thing to be too predictable in an inspection effort. I would agree with you.

MS. CARPENTER: But the program also is built with flexibility. The inspectors can, if they see a safety issue, follow that. The program is flexible. With the action matrix, it is predictable, but the other side of that is that we also have deviations to the action matrix. So if the licensee finds himself in a particular column of the action matrix, and maybe we don't think that's appropriate, we do have a method to say, "That's not the appropriate regulatory action, and we think that this is the appropriate regulatory action." So there is flexibility built into the program to allow us to basically do what we feel is the right thing. It just requires that we think that through, and that we have the approval of higher management in order to do that.

CHAIRMAN CONWAY: Dr. Matthews.

DR. MATTHEWS: I have a question in this evolution to risk-informed. I read a lot in the trade journals about utilities being able to reduce some of the controls on some of their safety systems because they aren't high significance and they didn't provide what people thought they were providing. I wonder if you could give me a little bit of how you see, as the

regulator, that risk-informed has increased public health and safety.

MS. CARPENTER: It allows the agency to engage. I was an inspector under the old program. Under the old program, if I saw some place where they violated their license or if there was something in their technical specifications, which is part of their license or the regulations, that would be a violation, and I would pursue that. Because the inspector in the agency was pursuing it, so were the licensees. So they were focused over here, but you knew that it wasn't very risk-significant.

Today under the new program, it allows both the licensee and the agency to focus its resources on the most risk-significant, safety significant, issues. We can look at this other piece and say, "Yes, this was a requirement under the regulations." They put it in their corrective action program, and they correct it. It allows us then to move on to things that are more risk-significant. We are focusing our resources where it is most important. I think that's been the biggest benefit for both the utilities and for the agency today.

MR. GIBBS: There's no doubt. I was an inspector in the old program. I was an inspector in

the new program. There was no doubt in my mind that as an inspector we focused on more important systems as we inspected the facilities, which I think addresses your question. How did we enhance public safety? That's how we did it. We went after the systems and problems that had the most payback, if you will, in a risk-informed environment.

DR. MATTHEWS: Did the risk information back up your "gut feeling" that you talked about earlier?

MR. GIBBS: Not always.

DR. MATTHEWS: Was it consistent?

MR. GIBBS: Most of the time, but not always. The probabilistic risk assessments that have been done have revealed what we call "insights." That's information that the deterministic engineer may not have thought about in the design of the system.

DR. HACKETT: I would add to Russ's comment, too. Early on, I think we learned a lesson the hard way. We started down this path saying this was "risk-based," and it's not risk-based. Risk-informed is a fundamental shift in philosophy. So we do retain other elements like defense-in-depth and being able to go from the gut and as Cindy mentioned, there is flexibility in the program. It is not just

risk-based.

CHAIRMAN CONWAY: Does your site inspector have the authority to order a shutdown if there is a violation and he or she has no other authority to issue an audit?

MS. CARPENTER: No, they do not have the authority. That comes through Headquarters.

CHAIRMAN CONWAY: He would have to come back to the Commission itself.

DR. HACKETT: To the Headquarters.

MS. CARPENTER: The Headquarters. I think the actual authority to issue a shutdown is with the Office of Nuclear Reactor Regulation [NRR].

DR. HACKETT: The Director of NRR.

MS. CARPENTER: He actually issues the license to the facility, and he has the ultimate authority to order a plant to be shut down. They would make their recommendations through the regional office and then through Headquarters.

CHAIRMAN CONWAY: In your experiences over the years, has the NRC or its predecessor ever had an example where a site inspector thought it a violation sufficiently serious that [he] called back to Headquarters for authority to have it shut down?

MS. CARPENTER: I don't think so. Not

that I know of.

CHAIRMAN CONWAY: I have no recollection of reading of any.

DR. HACKETT: No, I don't believe that's been the case.

MS. CARPENTER: Our inspectors are our eyes and ears out in the field, but that authority rests with the Office Director for our Office.

CHAIRMAN CONWAY: Very good, Dr. Hackett.

MS. CARPENTER: On the next slide, I wanted to talk about resources for the program, and these are the resources needed for the ROP. I think the main message here is that although we've gone to a new reactor oversight process, we did not substantially reduce the level of effort that we considered necessary to ensure that we satisfy our mission. We've focused our inspectors in areas that potentially pose the greatest risk to the public.

We currently spend about 5,000 hours at a two-unit facility, and that is minimum inspection effort. It's about 2,000 direct hours. It's 5,000 hours on average across the country. The two resident inspectors as you mentioned are physically stationed at each facility. We have additional inspectors out of each of our regional offices. They perform other

less frequent inspections.

The level of effort represents what we consider to be necessary to complete what we call the "baseline inspection program." This baseline inspection program combined with performance indicators contain the major elements of the inspection aspect of the ROP. The baseline inspection program is considered the minimum level of inspection that is required for a plant, regardless of the plant's performance, in order for the NRC to have sufficient information to determine whether plant performance is at an acceptable level.

The baseline inspection program is performed at each and every facility in the country each and every year. As I mentioned previously, the baseline inspection program was developed using the risk-informed approach to determine a comprehensive list of areas to inspect within the oversight framework.

In the event that a process determines that a particular inspection finding is above a certain threshold of significance or a performance indicator crosses a predetermined threshold, then the action matrix that we have directs that additional inspections - we call them "supplemental inspections"

- will be performed at that facility.

The level of this effort of these inspections is dependent upon the number of findings or the performance indicators that cross the predetermined threshold or the significance of the findings that's been predetermined. So if the inspection finding crosses what we call the "green-white threshold," then the agency has predetermined inspection procedures in place to engage. If it would cross what we call the "yellow threshold," which would be moderate to high safety significance, then there is increasing inspection, increasing engagement on the part of the agency.

The ROP also requires resources for overall assessment of the licensee performance. We perform continuous inspection, continuous assessments of the licensees. We also do more formal quarterly, semi-annual and annual assessments.

During these assessments, all of the inspection findings and the results of the performance indicators are reviewed to determine if we need to conduct additional inspections. As I mentioned earlier, a major element of the assessment process is that as long as inspection findings remain below a certain threshold of significance, we perform only the

minimum inspection effort at that facility, and are less involved than in day-to-day operations of the facility.

We expect our licensees to implement their corrective action program to identify and correct problems without the NRC having to unnecessarily engage at lower levels of safety significance. This approach allows our inspectors to better focus on the risk-significant activities at a given facility and the capability to allow inspectors to do reactive inspections if needed. Unlike the inspection process, overall resources for the assessment process have not changed from the last program to this program.

The next thing I want to transition to is licensee self-assessment. As part of our ongoing efforts to improve the efficiency and the effectiveness of the ROP, we're currently evaluating a process to allow licensees to have credit for certain self-assessments that they might perform. We're considering allowing licensees to substitute a self-assessment of their own activities for certain predetermined NRC baseline inspections as long as the self-assessments were conducted in accordance with the guidance document that's being prepared at this time. These self-assessments will still be monitored by the

NRC, but we estimate that the resource savings might be on the order of 50 to 75 percent for that particular inspection, with similar savings possible for NRC licensees, and again allowing the agency to redirect our resources to more safety-significant issues.

CHAIRMAN CONWAY: Let me ask a question, if I may. During the utility self-assessments when you have onsite inspectors, are they following it as it's being done? Do you hear what I'm trying to get at? Are they watching it as the self-assessment is being done rather than waiting until it's done, and then reviewing it?

MS. CARPENTER: Yes, that is the intent of this program. It's that the licensees would conduct their self-assessment. They would formally ask the agency to conduct a self-assessment, and there are only certain inspections that we're thinking about right now. One of them is the safety system design inspection. They would formally ask us; depending upon where their performance is at would determine how much. We definitely would be on the team. We would be overseeing the team for their self-assessment as it's happening.

CHAIRMAN CONWAY: So you are participating

with them on their self-assessment.

MS. CARPENTER: We're watching what they're doing, exactly.

CHAIRMAN CONWAY: As it's proceeding.

MS. CARPENTER: Right.

CHAIRMAN CONWAY: Now that seems to be different from what I understood from Naval Reactors where they, if I heard them correctly, wait and let the contractor do his work and then review it and see how well it was done, but not following along and watching it in parallel.

MS. CARPENTER: We do that in the emergency preparedness area. The licensees conduct their exercises. They are critiquing themselves, and we oversee the drill itself, and we oversee their assessment of how they've done. But for these particular licensee self-assessments, the intent is that we will be there on the team observing what they are doing.

CHAIRMAN CONWAY: If you see it going down the wrong path, their self-assessment is missing, or it's not being done properly, then your site representative calls it to their attention at that time.

MS. CARPENTER: The site representative

would call it to their attention, or whoever is monitoring the team, whether it might be the inspector onsite or it also might be someone from Headquarters or someone from the field office. They would then bring it to their attention.

CHAIRMAN CONWAY: During the time that this is completed and the utility has completed its self-assessment, you would expect it to be properly done because you are following it as it's done.

MS. CARPENTER: Yes, sir. That was part of the next slide. Self-assessment. As part of that, when they find inspection findings, again we would expect them, if they were very low risk significance, to put them in their corrective action programs and for them to follow up. If they are higher safety significance, the agency then would assess it as we do now through our Significance Determination Process.

VICE CHAIRMAN EGGENBERGER: Do you expect the licensee to have an ongoing self-assessment program? And before you answer that, you indicated that you were going toward the idea that there would be certain areas that you would allow him or her to do self-assessments in, and then that made me believe that's the only area he's going to do self-assessments in. So that's why I asked if you expect them to have

a continuing self-assessment program on everything as Naval Reactors indicated that they expected their contractors to continuously self-assess.

MS. CARPENTER: Let me see if I get this right. We do not have a requirement that they conduct self-assessment.

VICE CHAIRMAN EGGENBERGER: Okay.

MS. CARPENTER: We do expect them, though, to be self-assessing themselves and to be finding problems, putting them into their corrective action program, assessing the significance, and fixing their problems. We know many times before a team inspection goes in that they will conduct self-assessment. Then our team will come in and do the inspection. So what we're talking about is instead of them doing a self-assessment in a particular area and then us coming in and doing it, that they would do it, and they would receive credit for having done the inspection.

The agency would then not follow on with an inspection. We would judge how well they did. If we find that they did not do a good job, then the agency would probably do either a follow-up inspection or they would be doing the inspections from then on.

VICE CHAIRMAN EGGENBERGER: Do you know whether INPO [Institute of Nuclear Power Operations]

has any thoughts on this matter? You're the wrong person to ask but I thought you might know.

MS. CARPENTER: They do conduct plant evaluations.

VICE CHAIRMAN EGGENBERGER: No, I mean a position on whether a licensee should do continuous self-assessments regardless.

MS. CARPENTER: I don't know.

MR. McCONNELL: If I might, I have a question. You indicated that you had a certain subset of your NRC inspections that you are considering allowing the licensee to do in lieu of the NRC.

MS. CARPENTER: Right.

MR. McCONNELL: I'm checking my facts here. Then you went on to say that you would expect them to do their inspections to be done in accordance to the standards that you would provide, presumably such that you would assume that their inspection would be at the same level of rigor and the same quality as if you would have done it yourself.

MS. CARPENTER: Yes.

MR. McCONNELL: And then you go on to say that you expect savings from both the industry and the NRC. May I get some insight into why you would expect to see that savings?

MS. CARPENTER: Why we expect the savings is as I said. Many licensees, when they know we're going to come and do design inspection or fire protection inspection, will conduct their own self-assessment. Then we come in and do our inspection. And there is a lot of support on the part of the licensee when our inspectors come in and are doing our inspection. So they are not only doing their own self-assessment, but then we're coming in and doing ours right behind that, and they are supporting everything that we're doing and then all the engagements with all of our inspection teams. So that's why we say we believe that there will be savings. We won't need to do that twice on the part of the part of the licensee then.

MR. McCONNELL: I think I understand. What you are saying is that the presumption was that there would be a stimulus of the NRC inspection, which would cause a serial process of contractor's self-assessment followed by an independent assessment. In this model, those two would occur at once, and that's why both organizations would see efficiency.

MS. CARPENTER: Exactly.

MR. McCONNELL: But that's the difference. That efficiency is because of the difference between

that model and the one that the Naval Reactors just described where they rely on a serial process. Okay. I just wanted to be clear.

MS. CARPENTER: Yes, that was part of this last slide. What we're thinking at this point in time is that depending upon the licensee's performance, how many inspectors would we have that would actually be following along with the licensee and observing what they are doing. We also have requirements that we're putting on to the program.

In other words, an example of that would be such as Exelon, a very large company today with a lot of facilities. We have minimum staffing. There would be so many people on the team. How many of those people on this self-assessment team would need to be from outside of their organization? In other words, some of them would have to be outside of the station, and some of them would need to be outside of their organization. That is all part of what we're setting up with them.

What do we do with inspection findings? We expect them to use the same sort of rigor that we would use in our program and be looking at the same things. We also would expect that if they found inspection findings, there would be a process as to

how we would handle those if they were very low safety significance into their corrective action program. So there are guidelines that we're setting up in order to conduct this program with them.

Right now, there is a guidance document. It is draft. We're in the process of reviewing that. We've provided comments back to the industry on that. The next step would be to conduct a pilot. We're hoping after the first of the year to conduct a pilot, and we're looking at one to two facilities per region right now for that to see how that goes. There are some concerns among our regional offices on this. This is something that we'll be looking with our regional offices on, also.

CHAIRMAN CONWAY: Kent.

MR. FORTENBERRY: Ms. Carpenter, just a quick question.

MS. CARPENTER: Sure.

MR. FORTENBERRY: Is there a role for unannounced inspections in this framework?

MS. CARPENTER: No, sir. There are not. Correct me if I'm wrong, but at this point in time, all of our inspections other than -- I have to make a distinction with the resident inspectors. We provide our utilities with a 12- to 18-month inspection

schedule. When it comes to team inspections, radiological protection, emergency preparedness, they know when our teams are coming on site. They know when our inspectors will be there.

But remember, there are two resident inspectors that are stationed at each facility, and although they know the basic guidelines of what the inspectors are required to inspect, you could kind of say that those are somewhat unannounced, but they are onsite.

MR. FORTENBERRY: And this is consistent with the theme of predictability from the regulators.

MS. CARPENTER: Part of it also has to do with access controls to get on site and things like that. Yes. But it is part of that predictability, so right now, they do get a 12 month look ahead on inspection schedules, and we're moving to 18 months.

MR. FORTENBERRY: If it's appropriate, can I ask the NR folks about that concept of the unannounced inspection as opposed to, "Twelve to 18 months from now we're going to be inspecting this item?" Is that a topic that you can speak on?

CHAIRMAN CONWAY: Tom, would you maybe use the mike over here on the end?

MR. BECKETT: Yes, sir. Pardon me for

taking your time. I think I indicated that we would expect 365 days a year, any day, the contractor to understand from self-assessment his weaknesses, and then we could come in and do that. Our program involves both announced and unannounced inspections. We mix the two and frankly see very little difference between whether it's announced or unannounced.

CHAIRMAN CONWAY: Thank you.

MS. CARPENTER: I think it's important to note also that although we do have two inspectors stationed at the facility, we also have requirements on them that they are to do what we call the "deep back shifts." So much of their time is to be coming in on weekends, after regular hours. They call it the deep back shifts, and they do have requirements to show up on site, but they are badged, and they do assessments.

CHAIRMAN CONWAY: Now your two inspectors who are site inspectors or representatives, do they have the capability of going through the guards? Do they have to wait for somebody to come out and bring them in?

MR. GIBBS: The resident inspectors have unfettered access to the facility.

CHAIRMAN CONWAY: That includes keys to

get in through the doors.

MS. CARPENTER: Yes, it does. That is a requirement.

MR. GIBBS: Everywhere on site.

MS. CARPENTER: That is part of our regulations. Our inspectors are to have unfettered access to anywhere on site that inside personnel also have.

CHAIRMAN CONWAY: And that includes the control room, of course.

MR. GIBBS: Absolutely.

DR. MANSFIELD: And any of the operators' meetings also?

MS. CARPENTER: Yes.

MR. GIBBS: Everywhere.

MS. CARPENTER: Any of the senior plant management meetings, our inspectors have unfettered access to that. That is an expectation.

MR. GIBBS: That's a regulatory requirement.

MS. CARPENTER: Exactly. It's 50.70, I think. That's the requirement. Okay. The other thing I will say is that we have seen in the past that some of our experience with licensees conducting self-assessments were not as rigorous as our own

inspections. This is one of the concerns that our regional offices have. This is something that we have to look at.

If we find that their self-assessments are not as rigorous as we would have done, then of course the next time that they ask to do something, the agency would follow up, or there are provisions to actually do a follow-up inspection in that area. That's all I have right now. I want to thank you very much and I'll be glad to answer any other questions you have.

CHAIRMAN CONWAY: Thank you. Dr. Hackett.

DR. HACKETT: Thank you.

CHAIRMAN CONWAY: While we are waiting, let me ask this. How long a term does a site inspector generally stay at a particular reactor complex?

MS. CARPENTER: It is now seven years.

CHAIRMAN CONWAY: Seven years.

MS. CARPENTER: It used to be five years, and a number of years ago because of the hardships of our inspectors, the maximum that an inspector may spend at one particular site is seven years. We find that many of our inspectors move on sooner than that. A lot of it is promotions. You know: from a resident

inspector to a senior, and then they'll move to another facility, but seven years is the maximum, and that's written in our policy.

CHAIRMAN CONWAY: Thank you. Dr. Hackett.

DR. HACKETT: Thank you, Mr. Chairman. I have a different challenge today, which is to try and help walk you through a story that's very important to us in the nuclear industry. In general, it dovetails with what Russ and Cindy had been talking about. The thing I'll add on this slide is that during the timeframe from May to October 2002, I was Assistant Team Leader for the NRC's Davis-Besse Lessons Learned Task Force. That's the role in which I'll be presenting this information to you. As you've been doing, I think I found that these work most effectively when there is back and forth exchange and dialogue. I think that would be the best way to proceed.

For those who don't know about this, in February 2000, we discovered a corrosion cavity, and I have some graphics here to walk you through, on the Davis-Besse reactor vessel head during inspections for vessel head penetration cracking. These are the penetrations that come through for the control rod drives. They are Inconel and the vessel head is a