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BRIEFING ON CONSTRUCTION REACTOR OVERSIGHT PROGRAM (cROP)

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TRANSCRIPT OF PROCEEDINGS

Public Meeting

Before the U.S. Nuclear Regulatory Commission:

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Kristine L. Svinicki, Commissioner

William D. Magwood, IV, Commissioner

William C. Ostendorff, Commissioner

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P R O C E E D I N G S

CHAIRMAN JACZKO: Good Afternoon. You are the brave souls who are not afraid of the snow or who are all the people who are stuck here because of the snow. So if seems we have a captive audience. We have a meeting today on the Construction Reactor Oversight Program and I think this has been, certainly from going through the background material, a very good effort; a lot of different people to come together and look at some effective ways to move forward on this type of program. So we'll begin unless there are any comments from my colleagues with some of our industry representatives. And I'll start with Mr. Houghton who is director of Safety Focused Regulation at NEI.

MR. HOUGHTON: Yes, sir. Good afternoon Mr. Chairman and Commissioners. I'd like to thank you for inviting us here to speak about the Construction Reactor Oversight process. I'd also like to thank the NRC staff that we've been working with over the past year. I think we've had a very collaborative effort, shared a lot of ideas and come to some good conclusions. I'll provide some opening remarks and I'll turn it over to my colleagues to speak, Greg Gibson from UniStar, Chuck Pierce from Southern Nuclear, and Mark McBurnett from STP Nuclear Operating Corporation. Next slide please.

The NRC and industry have been working very hard for several years on what the construction oversight will be like. And in July of 2009 we proposed through a white paper a new approach that would be based on the guiding principles of the reactor oversight process for operating plants and would try to emulate the ROP as much as possible. The NRC sponsored an executive panel that met in November of last year, which agreed to give the go ahead to work on it and provided some guiding principles for the group. In December we

started our work and we met over the first four or five months of this year virtually every three weeks. So we had continual meetings, public meetings, going on at which we discussed the different aspects of the process.

This work is reminiscent to me of the reactor oversight process itself. Back in 1999 I worked on that as the project manager at NEI and several of the people here, Greg Gibson and Mark McBurnett also worked back then so they are very familiar, and if I look back at the NRC, Mike Johnson, Tim Frye, not here today, Mark Satorius, there's just a huge group of senior NRC managers now who worked on that ROP when we started it. Next slide please.

The objectives of the construction ROP in our mind -- and always good to start with the objectives in mind, as much as possible you want to have a risk performed and a performance-based approach. Having to consider, of course, that you won't have fuel available during most of the construction so you have to think through, of course, how you would use risk tools.

Secondly, we wanted there to be a tool which would show that the plant has been built in accordance with the licensed design and that the operational programs were ready and we believe that the structure of the cornerstones in the construction ROP provides a road map for people looking at those things and that the construction inspection program is focused on those areas.

Thirdly we want a predictable and consistent treatment of licensees when they receive findings or violations such that they know ahead of time and the NRC knows ahead of time what the rules are for that, for those violations and how they would be treated so it's predictable and we're moving ahead in a predictable manner.

Finally, perhaps not finally, but finally on my slide we want to have a transparent and understandable process for the public so the public can say yes, we can see how the NRC is looking at the construction program and they can understand it just like the ROP being available on the website so that people can look and see what's going on and what's been inspected and what the results were. Next slide.

As I said, I think we've made great progress to date. We've developed the framework of the cornerstones, the construction action matrix and the basis for significance determination process. Mr. Gibson will be talking about that in a minute. In the area of performance indicators this is an area where we tried very hard to think of some potential performance indicators but we weren't successful in that area. And I think that there are a couple reasons for that. One is that on the construction site that you'll have lots of performance indicators for such things as cost schedule, quality of work and industrial safety but for performance indicators that can be used in a regulatory sense, we had a hard time thinking of any that would be available and one of the reasons for that is that you really don't -- you need data to be able to have performance indicator thresholds which drive performance, that's the point of the performance indicators is to have those thresholds at which NRC would conduct additional inspection. We don't have such data and so we would not be able to have thresholds. We have agreed with the NRC that we will look as construction proceeds to see if there are potential performance indicators that could be valuable and used in the program but at this point we did not find any.

On the issue of safety culture, that's another issue that we're continuing to interact with the staff on that. The staff's proposed using the same

process as is used in the operating ROP. The industry doesn't believe this approach is particularly effective and we've been piloting an industry approach over the past year at four plants in the country with NRC observation. This morning I'm happy to say we passed an industry initiative for which all of the plants in the country will implement our approach to nuclear safety culture. Next slide, please.

We appreciate NRC's thoughtful interaction with us on this process. It's been a good deal of interaction in the public meetings and there's been willingness, both by the staff and by ourselves to challenge our own people when issues were brought up, which I think is a very healthy relationship when you are working as a group. Progress to date shows, I believe, that we have a success path. We have some things left to do to make this process really good but we're on -- I believe we're on a success path.

There's some additional issues needing to be resolved. We'll need flexibility in implementation of this because things will come up that we're not aware of. They'll just be situations that we haven't thought of and that has happened in the Reactor Oversight Process. One way we address some of those issues is by continual, continuous meetings in the operating reactor side where we have monthly meetings with the staff and we go over questions that are raised about the oversight process and issues that are raised and performance indicators and all that is of course, is put in the public record. We would recommend a similar process be done for the construction ROP to continue that alignment on principals. And with that, thank you very much and I'll turn it over to Mr. Gibson.

MR. GIBSON: Thank you. Good afternoon Mr. Chairman and

Commissioner's. I'm Greg Gibson, Vice President of Regulatory Affairs for UniStar Nuclear Energy. I appreciate the invitation to come before the Commission to provide the industry perspectives on the NRC oversight of new construction activities and a Construction Reactor Oversight Program. As Tom mentioned I was on one of these task forces that met every month for about three and a half years and so I can say the devil is in the details and the process has worked very, very well to identify and ventilate in a public forum issues with Reactor Oversight Process.

Mr. Houghton has just discussed the origins and objectives of the construction Reactor Oversight Process; therefore, I'd like to address my comments to the framework underlying the construction ROP. First slide, please.

We believe that the NRC's existing Reactor Oversight Process, which has been effective for over a decade has been one of the most significant regulatory process improvements in the history of the agency. The existing Reactor Oversight Process regulatory framework consists of three key strategic performance areas: reactor safety, radiation safety, and safeguards. Within each strategic performance area are cornerstones that reflect the essential safety aspects of facility operations. Inspection findings are assessed based on their safety significance according to a significance determination process that is predictable and risk-informed. And the NRC response to plant performance increases with the significance of licensee performance in an increasing level of engagement.

In the past decade members of the public as well as industry and government have gained understanding and confidence in the NRC Reactor Oversight Program. This is underscored by the annual assessment that we get

from stakeholders, which is a survey that the agency conducts. Therefore, it appears prudent to base the Construction Reactor Oversight Process on a similar paradigm involving three similar principles, cornerstones, action matrix, and the SDP. Next slide please.

Cornerstones logically divide into the focus areas of the NRC and allow findings to be binned into appropriate categories to evaluate licensee performance. We believe as similar to the ROP, reactor safety is addressed by having four robust cornerstones: design and engineering programs, procurement and fabrication, construction and installation, and a thorough testing and inspection program. These four cornerstones insure that each of these four fundamental processes assess whether systems, structures, and components will fulfill their reactor safety function when the facility becomes operational. The cornerstones of operational programs assesses the preparation of radiation protection, training, and other programs upon which the facility will rely upon fuel receipt. The cornerstone of security programs for construction inspection and operation is provided to ensure not only physical protection, but fitness for duty and access authorization. Next slide.

Let me turn to the action matrix. The action matrix is important to us because, as I mentioned before, the NRC staff, the industry, and the public have over a decade of familiarity with the ROP action matrix. Consistent responses to emerging trends and licensee performance is achieved through the action matrix. The action matrix distinguishes between violations in different cornerstones and appropriately focuses NRC resources in a targeted manner. Next slide.

Lastly, creating a predictable and scruitable significance

determination process is a vital element for the credibility of a Construction Reactor Oversight Process. During our work with the NRC staff to date, we have evaluated both of the two proposed SDP options. One was a flow chart, kind of like a metro map, versus a matrix. While the flow chart approach can work and there are certain specific cases where a flow chart is perhaps more appropriate, such as issues involving training. We prefer the staff-developed SDP matrix. And this was interesting to me personally because when we first started this program our preference was for flow charts and the NRC staff's initiatives in the area of a matrix which also had a risk component was very innovative and thinking outside the box. So we are working together to develop and clarify the matrix as opposed to the flow charts, which we have more experience with. Next slide.

The matrix also avoids the pitfalls of needing detailed definitions. For example, terms such as substantial concerns and significant concerns are subjective at best. And what we would prefer is to have a very specific and detailed, predictable and scruitable process whereby the outcome for a particular condition would be able to be assessed and have a reproducible outcome.

We've offered options to the staff, such as the use of common terms of repair, replacement, or rework needed to meet acceptance criteria or reanalysis involving reductions in the margins of the safety margins. These are terms we use routinely. But importantly, we believe that there is an opportunity to engage the staff further as we go forward with a Construction Reactor Oversight Process. I will say that we got excited about the matrix and started looking at issues associated with Fussell-Vesely and risk ranking. And we suddenly realized, "Well, this really wasn't appropriate to bring to you now."

That's the devil in the details that if you make the decision to go forward, that we would want to engage the staff to better ventilate and come up with final criteria. Next slide.

In conclusion, again I would like to go back in history to a decade ago to the creation and adoption of the original reactor oversight process. Subsequent experience has shown that the current ROP process has achieved all of the goals for improving regulatory effectiveness and efficiency. We believe that the framework presented in SECY-10-0140 provides a similar opportunity for the Commission to do for construction what the ROP did for operating plants. As such, we concur with almost all the recommendations in SECY-10-0140 and are ready to work with the NRC staff to complete the development of the Construction Reactor Oversight Process. Thank you. I'd like to introduce Chuck Pierce.

MR. PIERCE: Good afternoon. My name is Chuck Pierce and I am the AP1000 licensing manager for the Vogtle 3 and 4 Units at Southern Nuclear. I do thank you for this privilege of speaking before the Commission today on this important subject. As the industry moves forward with new construction projects, it is vital that both the NRC and industry put attention to these types of areas. An effective NRC oversight process is essential to the future success of the Vogtle 3 and 4 construction program as well as other future projects.

My presentation today mainly focuses on the experiences Southern Nuclear are seeing in the construction of its Vogtle 3 and 4 facility and the relationship to the Construction Reactor Oversight Process.

Southern Nuclear began pre-construction activities -- these are activities such as removal of trees and grading and initial excavation -- in early

2009. In August 2009, Southern Nuclear received from the NRC its early site permit for the Vogtle 3 and 4 facility. This permit included a limited work authorization for the installation of circulated back fill and nuclear island mud maps, waterproof membrane, and mechanically stabilized earth and wall for the nuclear island. In March 2010, Southern Nuclear entered into the formal construction phase for specific activities, which were allowed by this limited work authorization. Next slide -- okay, we're on this slide. Okay.

The first point I'd like to make on this slide is that Vogtle 3 and 4 construction project is currently subject to significant NRC oversight and inspection. Southern Nuclear strongly supports this level of oversight and believes that a strong NRC oversight and inspection program is essential for instilling public confidence in the new reactor constructions. In April 2010, NRC Region II announced two resident inspectors for the Vogtle 3 and 4 construction program. The first of these resident inspectors arrived full time on site in August 2010. Then on July 1, 2010, the NRC initiated its periodic assessment of Vogtle construction using inspection manual 2505. In brief, this assessment process provides quarterly assessments, six month performance reviews, and annual public meetings. For clarity, I'd like to emphasize before going on the next slide that this program does contemplate quarterly assessments rather than six month assessments shown on the slide. Next slide.

Okay. This slide does show the inspections that are planned during this first annual periodic assessment. This number of inspections average about one major inspection per month at the Vogtle 3 and 4 construction site. In fact, the sheer weight velocity testing inspection occurred this week. In addition to this, there are ongoing inspection activities by the residents and other ongoing

vender inspections by the NRC Office of New Reactors, Construction and Inspection Operational Programs. Finally. There are other significant inspections that have occurred such as geo technical mapping and the -- monitoring inspection. It's also important to note that the NRC Region II is planning for additional residents at the Vogtle 3 and 4 construction facility as construction proceeds and construction activities increase. Needless to say, this demonstrates a very high level of inspection activity. Next slide.

During the inspections that have occurred to date, Southern Nuclear has seen four Level IV violations and one non-cited violation. And as an example of one of the items on this slide, this year during construction inspection, NRC Region II issued a violation for the use of backfill material from an onsite source not described in early site permit site safety evaluation report. This issue was initially self-identified by Vogtle, discussed with the NRC staff and a condition report was entered into the corrective action program. These discussions also result in a series of license amendments to the NRC staff for the Vogtle 3 and 4 early site permit. Next slide.

Following the backfill material violation from the previous slide, you'll see that this violation was described in the inspection report as a minor violation of minimal safety significance. And this was because the material was from onsite sources of the type that was already approved. Under the Construction Reactor Oversight Process this would be a performance deficiency and would have probably been classified as minor and thus would not entered the significance determination process. At most, this would have been a green non-sited violation in the significance determination process since the quality and materials used were acceptable and there posed no increase in risk. This

condition was also corrected prior to continuing work with backfill activities. In the Construction Reactor Oversight Process, if this performance deficiency had gone through this significance determination process, I would expect that this finding would have been included in the performance area of construction reactor safety under the cornerstone of construction installation.

Finally, before leaving this slide, I'd like to point out that this violation may -- and I do emphasize may -- also be a non-cited violation into the traditional enforcement process as well. You'll note that this was cited as a Level IV violation for Vogtle 3 and 4. Under the NRC enforcement process, a non-cited violation may be used after the NRC has inspected an applicant's corrective action program and determined that program to be acceptable. And to date, the corrective action inspection program has not yet occurred for the Vogtle 3 and 4 facility. Next slide.

Okay. Based on the years of experience with the reactor oversight process at our operating plants and the work that the NRC and NEI have done in developing this Construction Reactor Oversight Process, Southern Nuclear does believe that implementing the Construction Reactor Oversight Process using significant determinations will provide the best oversight for the industry and give the public confidence that is needed to ensure protection of the public health and safety. My opinion is that the Construction Reactor Oversight Process applies the proper level of significance to findings and allows the issues of significance to be surfaced into specific cornerstones so that both the industry and the Nuclear Regulatory Commission can then focus on those issues with the appropriate level of concern. Next slide.

In conclusion, let me thank you again for the chance to share

Southern Nuclear experiences. Southern Nuclear does support the Construction Reactor Oversight Process and considers the dialogue between the Nuclear Energy Institute, the staff, and the industry to be useful and successful. We do urge the Commission to endorse SECY-10-0140 with option 3 and move to implementation. We do also look forward to continued dialogue with the NRC staff to further establish the details and procedures that support this process. And I'll turn it over to Mark McBurnett.

MR. MCBURNETT: Yes, I am Mark McBurnett. I'm responsible for the quality programs, the regulatory programs for the new units at the South Texas Project. I'll start by saying that I do confer with the comments of Tom and Greg and Chuck. We've been a strong proponent of the reactor oversight process since its inception. And now with 10 years of experience, we believe it's been shown to be successful in providing an objective and repeatable tool for assessing performance. It provides clear and understandable assessments for the public, provides for proper focus of NRC response and licensee resources. We appreciate the collaborative process and regard and development of the Construction Reactor Oversight Process with NRC taking input from all stakeholders and believe that it will lead to a successful product. Slide two please.

I'd like to cover a brief background on our experience with traditional enforcement at STP Units 3 and 4. As in Chuck's presentation, I believe it provides a good insight in regard to the need for the Construction Reactor Oversight Process and the benefit of moving to the Construction Reactor Oversight Process as soon as possible. NRC has identified 6 Level IV violations in the past two years at STP Units 3 and 4. I'll not argue that any of these was

not a legitimate no-compliant condition, however, each of them individually and in aggregate represent inconsequential issues. Under the reactor oversight process they would be either not documented, minor, or at worst non-cited. In large part, these were minor omissions or inconsistencies in written procedures or records, with no practical quality consequence. As violations, all of these received public attention. The public is accustomed to the reactor oversight process and its terminology. Cited violations in that process are relatively infrequent and typically represent significant issues.

Within traditional enforcement, there is little opportunity to convey the relative significance of a Level IV violation. Reactor oversight process provides a clear representation of the significance of issues and provides a better overall context for communications. Based on our experience to date, traditional enforcement creates an inaccurate negative impression of overall quality solely based on the fact that violations are issued. This will be exacerbated if we continue to use traditional enforcement at some locations and not at others. The Construction Reactor Oversight Process provides for an appropriate significance assessment that will provide for an accurate assessment and impression. Next slide please.

We support option 3 and implementation of the Construction Reactor Oversight Process. I recommend NRC move as quickly as possible to implement this process and fully utilize it at both combined license, licensees, and applicants. Using traditional enforcement in one plant while applying Construction Reactor Oversight Process at another I think is a recipe for miscommunications.

I do not believe that there's a need for the continuing traditional

enforcement in parallel with the Construction Reactor Oversight Process pilot. I think it expends resources that could better be used to perform periodic assessments of the Construction Reactor Oversight Process implementation. And NRC can always resort to traditional enforcement if it becomes apparent that the Construction Reactor Oversight Process is not performing adequately and cannot be adapted. The fact that these are construction projects with no fuel on site and therefore, no immediate radiological consequences, should give NRC flexibility to move to the Construction Reactor Oversight Process without the need for a redundant enforcement process.

There's also a limitation that's been expressed not to allow the Construction Reactor Oversight Process before the applicant or licensee's corrective action program has been fully vetted. I see the better opportunity is to use the Construction Reactor Oversight Process pilot as the tool to establish the adequacy of the corrective action programs. The periodic assessments can evaluate whether or not the applicant or licensee is adequately addressed to NRC identified findings under their corrective action program and take action as needed if they have not. Again, a lack of immediate risk of radiological consequences should buy us that opportunity. I believe these recommendations will better serve the NRC, the public, and the industry. We'll have clearer communications and avoid the mixed messages, have appropriate NRC oversight and response and best utilize our resources.

I would also note that NRC has substantial experience with the Reactor Oversight Process, and I speculate that you have more in-house experience today in the Reactor Oversight Process than we do with traditional enforcement. So I think that plays well in enabling the NRC to move quickly into

the Construction Reactor Oversight Process. Slide four please.

A little bit different topic -- I wanted to mention that the Reactor Oversight Process is based on mature plant data. And it's somewhat speculative on my part to predict, but I do not expect the new plants to perform at mature plant levels during the initial operations. This may particularly manifest itself in the use of the Reactor Oversight Process performance indicators. This should be considered as part of development of the Construction Reactor Oversight Process and careful thought given as to how to make the transition. While I do not have a preconceived answer, I believe that we need to give this consideration now versus later as it may have impact on the design of the Construction Reactor Oversight Process and definitely has a potential for an unintended consequence. Last slide please.

In conclusion, we strongly support the Construction Reactor Oversight Process and consider the dialogue successful today. And I urge the Commission to endorse the SECY with option 3 and move expeditiously to implementation. Thank you.

CHAIRMAN JACZKO: Okay, we'll start with Commissioner Magwood.

COMMISSIONER MAGWOOD: Thank you Mr. Chairman. First let me thank our colleagues for working so close to the staff on the issue. It's good to see so much creative work coming out of that activity. Chairman, since I have the propensity to sort of observe dates when we have these Commission meetings, I observed that today is Beethoven's birthday. Those of you who are classical music fans probably already knew that. For those of you who aren't, shame on you.

[laughter]

Just through I'd point that out. Just a really – you can hear my voice isn't great, so I want to ask really just one question and I'll direct it to Mr. Houghton and others can comment as you'd like. I recognize the points you made about the violations that have been cited so far and your opinion being that they would not have really shown up on the scale in the NRC ROP process. However, you know, there is I think relatively positive recent experience with the traditional process at Browns Ferry which was you know, I think lauded by many people as a successful process. Watts Bar is going through that right now. I have not heard a lot of complaints about that, not that I have looked, but I haven't heard a lot. Can you give a perspective on this? What -- has the traditional process proven to be so cumbersome, so prone to these violations that it really would be a burden for the future for future reactors? How should we look at this?

MR. HOUGHTON: Well, those projects have gone well. I think what the concern is, is that when things do happen it's good to have a structure in place where everyone knows how to examine the significance of that violation. The traditional enforcement approach is significantly more vague in how it states what a Level IV or a Level III, II and I are. And that was one of the main reasons why we went with the Reactor Oversight Process for the operating plants was to have a way of determining what the significance was, letting the public know what the significance was, having the licensee be able, pretty much ahead of time, to determine what it was and for the NRC to be able to determine it in a fairly quick -- sometimes we have disagreements and they stretch out, but it's much more structured and it allows predictability and a clarity that we don't feel the traditional enforcement process provides you when things occur which aren't

-- when unusual things occur. Any other --

MR. GIBSON: Yeah, I'd like to address that because in a former life, not while I was with UniStar, but back in a former position --

CHAIRMAN JACZKO: In a former position right? I don't know if we want to get into reincarnation in this meeting.

[laughter]

MR. GIBSON: But I was with Southern California Edison for 20 years, and in fact, in about 1998, I worked with Bill Borchardt when he was the Director of the Office of Enforcement. And we worked with the Office of the General Counsel and with the NEI attorneys to look at the enforcement policy. Because under traditional enforcement, back before the reactor oversight process, we did have problems. It wasn't on the escalated enforcement. That gets fully vetted. There are hearings. There are meetings. The facts are confirmed before anything goes forward. Those are okay. But on Level IV minor violations, the industry is a learning and a sharing industry and we would share violations with South Texas, which is where I met Mark 15 years ago, 20 years ago. And we would actually compare a violation that San Onofre wasn't being cited at South Texas. And it was very difficult to get consistency. And we wound up spending an enormous amount of time and energy that would truly be better focused on just fixing the issue and not worrying about it. Green is not good in the reactor oversight process. In the corrective action program, in accordance with the NEI guidance on corrective action programs, a cited or non-cited NRC violation is by definition a condition Level II. There are 3 levels. So by definition, it will get an apparent cause evaluation and it will get fully vetted and that is subject to the staff's inspection. And we're focusing on fixing the problems rather

than worrying about, “How come he got cited and I didn’t?”

MR. HOUGHTON: If I could add one thing -- the traditional enforcement in the Reactor Oversight Process deals with willful acts, withholding information, or acts with actual consequences. And we of course believe that that part of traditional enforcement would apply under the construction ROP as well.

COMMISSIONER MAGWOOD: Thank you.

CHAIRMAN JACZKO: Commissioner Ostendorff.

COMMISSIONER OSTENDORFF: Thanks Chairman. I want to add my thanks to Commissioner Magwood for you all being here today. I want to react to a couple of you made comments about the importance of transparency and communications with the public. I would just echo that. I want to contrast maybe an example I personally lived through back in the ’80s when I was engineer -- excuse me -- executive officer in a submarine. Shipyard was being built and installed the main condensers by six inches too far forward on the port side, too far backward starboard side, so you had misalignment. It created an imbalance in the proportion turbine, and that fix -- now I’m going to slide seven on replacement or rework-- that fix took nine months, cost tens of millions of dollars. Now there’s no safety issue because the problem was found. There would have been a safety performance issue if the problem had not been found. But I know that that was in the press in Newport News, Virginia about these big delays with the USS Newport News. There was a lot of angst and gnashing of teeth and trying to make people understand what happened, why it happened, and what was found.

And so I encourage you all irrespective of how the Commission

comes out to really focus on how do you talk to the public on these things because it is fraught with the potential for misunderstanding.

For Mr. Gibson, I wanted to ask you a question on your slide eight. In your conclusions you say you concur with almost all the recommendations of SECY-10-0140. I just wanted to ask you this; can you just quickly summarize which recommendations you do not concur with?

MR. GIBSON: It is the -- we do like the matrix. I know that was the difference between the two. Some of the staff prefers the metro map flow chart. We do like very much and would like to have a more risk informed significance determination process. Risk is better accommodated under the matrix and that's our primary issue with the SDP process from my slide. I'd also like to say that we split up our comments too. So I'd like to go down to Mark because Mark specifically, you know, says we ought to -- go ahead Mark.

MR. MCBURNETT: A sense of urgency.

MR. GIBSON: A sense of urgency and not waiting.

MR. MCBURNETT: Mine was just encouraging with the pilot process to move forward and move forward quickly because I see us right now with -- you know, when I have two operating units that never see a violation, and then I have construction units that start to receive numbers of violations, the local officials, the local newspapers are calling and saying, "What's wrong with this construction plant?" And then I'm in the mode of trying to explain, "Well, these are really minor, inconsequential things." So I'm downplaying the significance of the violations and it's just that it's a counterproductive discussion. And I see that the Construction Reactor Oversight Process gets us around and gets us aligned with what we do in the operating units. It just makes a cleaner communication

and simpler explanations. I was encouraging moving forward with that quickly and suggesting some ways to move it forward without having to wait for inspections of the corrective action program as an example.

COMMISSIONER OSTENDORFF: Are there any deltas between where industry is and where the staff is? You want to bring up in this response?

MR. HOUGHTON: Those are the main two, Commissioner.

COMMISSIONER OSTENDORFF: Thank you, Mr. Chairman.

CHAIRMAN JACZKO: Commissioner Svinicki.

COMMISSIONER SVINICKI: Thank you all for being here today and for your presentations. I might ask -- I think Mr. Gibson, you just acknowledged that there's and the staff -- this is in the paper as well -- but there's more development work that would need to be done on the significance determination process. But something that the staff identified in the paper itself was that the experience in the ROP with sending things through significance determination is that sometimes if it's a complex issue, it's not processed through the SDP in a timely manner and that there's considerable licensing and resources that are expended in doing the risk determination and that again, the staff self-identified that they say, "This could be problematic in a fast paced construction environment." Do any of you have thoughts about, you know, how we would approach that or handle that? And as you've worked with the staff on the construction ROP, have you talked about this issue of the pace of things that might be building up and going on at a construction site? And could you share some perspectives about that?

MR. HOUGHTON: Commissioner, one of the things that happens in the operating reactor oversight process is that you have a threshold of 10 to

the minus six between the green and the white. And in PRA efforts -- and I'll speak more freely because the expert isn't here. But what happens is you may have a result which the licensee says is 1.2 times -- is nine times 10 to the minus seven. And the NRC says it's 1.2 times 10 to the minus six. And in actually, the error bounds are broader than that. And so sometimes you have prolonged discussions in that regard which are unfortunate and that's probably an area we need to try and improve the operating ROP because we want decisions sooner, whatever they are, so that NRC can inspect and we can move on also. I think in the construction ROP, we're trying to use the tool such that it's -- there's not as much wiggle room between things. For example, on a risk side, we would -- items would be decided ahead of time what that component -- what the risk of that component is so that you don't have to do an analysis of the situation. You say, "This pump is a high risk pump." You're in that area as opposed to being on the boarder of it.

On the Y-axis of the matrix, there is some language which is a little bit squishy and that's an area that we need to work on so that we can be real clear before we start what we mean by major repair.

COMMISSIONER SVINICKI: We tend to argue about the squishy areas. So if you can minimize the squishy areas --

MR. HOUGHTON: I hope that was helpful.

COMMISSIONER SVINICKI: Okay, that was helpful. Thank you. And the other thing I'd ask you just real quickly is you gentlemen are here because you've been involved in the development of the construction ROP. But another thing that would be going on while the construction ROP is being applied is of course the ITAAC process and ITAAC closure. Have you discussed at all

any of the, you know, nexus or if there's any parts of the ITAAC process that cast a shadow over into the c-ROP process and back and forth? And I guess this gets into dangerous territory of things like programmatic ITAAC and things of the past that have been batted about. But could you share any reactions you have on the ITAAC and c-ROP relationship and correlations or any issues that spill over?

MR. HOUGHTON: You want to start with that?

MR. GIBSON: ITAAC is -- I have over 1587 as of about an hour ago, ITAAC. And it's an area where each one we recognize has to be inspected and there's a 103g finding. We are working with the Department of Energy in fact working to look at how are we going to close ITAAC? What's the inspection processes and procedures? And there is going to be situations where in ITAAC, something will happen. There will be an issue with an ITAAC. Being able to assess that issue in a scruitable manner and hopefully have it risk informed as Tom was saying. Not all ITAAC are created equal and there are ITAAC that are tremendously important that escalated enforcement action would probably be warranted. So with that, we want to generate a framework which would apply to ITAAC as well as any other finding.

MR. HOUGHTON: And ITAAC is a requirement, just like a regulation of course. What the construction ROP will do is put a significance on it in terms of did the licensee identify it himself? How serious a change do you have to make? And how risk important is it? So that would inform the NRC's inspection activity. Would they do a, you know, one week inspection or two weeks or whatever? So you're on sort of two parallel paths. One is you've got to comply with the ITAAC eventually. The other is why didn't you?

MR. PIERCE: This is Chuck Pierce. I think that as we move into a pilot process, we're going to find areas such as the ITAAC areas and such as the previous one you mentioned, that we're going to need to do some thinking and tweaking of the process. I think as with any new process, I think there are going to be things that are going to be looked at and dealt with in the pilot. So I think these issues are prime issues for the pilot process.

COMMISSIONER SVINICKI: Thank you. Thank you all.

CHAIRMAN JACZKO: It has been an actually very interesting session. I think I agree with a lot of what you said in principle, but in practice I am getting stuck. And I am getting stuck because I don't know what we mean by risk here. And I think all of this makes a lot of sense. As I said, we talk about we want to categorize these things into risk significance. And I've been trying to figure it out in my head when we're talking. And I can see two kinds of things. There's a construction risk element which is how likely is how you're doing you construction going to lead to a plant that's safe?

Then there seems to be kind of a more natural way to look at the risk which is how much are you affecting components that we know when the plant is operating have risk significance? I'm not sure which of those is the right one to have because if, you know -- in the end, if you're making lots of little mistakes on a piece of equipment that's very risk significant from the standpoint of operation, that may not matter. But if you're making big mistakes in construction on things that do matter or things that don't matter, that might tell us that the construction program is not successful. And that may be a more important risk metric than the risk significance of the component when it's in operation. Because of course, we don't inspect everything. So we're trying to

get a handle on, how is the construction process going? Is it working well? For all the things we don't see and we don't inspect, are they going to be constructed right?

So in your mind, what does risk -- what do we mean here by this risk kind of -- if we go with the matrix approach? What is in your mind a risk metric?

MR. HOUGHTON: In terms, of course, of the component itself or the system, or the structure, one would want to pay more attention to a more potentially risky component. That's one aspect of it which you talked about. Second is I think the action matrix itself provides you a risk metric because it says in each of the cornerstones how many errors are you making in that cornerstone and how significant are they? So that by having this structure of cornerstones it helps take all the violations that occur and it says, there are a lot of violations in the design and implementation area or there's a lot in the procurement area, or there's a lot in the operational programs. And even though they may be less significant, it's a pointer that there needs to be work in that area.

COMMISSIONER JACZKO: I mean if we look -- let's take that as an example then so we've got the security program. Where is my risk determination in the security program? If I'm doing my inspections and I identify that -- I mean, I don't even know -- I mean, you're standing up the security program and then you're doing background checks and your background checks process is flawed. How am I -- I mean, what is the risk? Is that low risk? Is that a medium risk? Is that a high risk? And what's my metric and how is that at all comparable to what I'm doing with, you know, an actual construction or my ability

to properly inspect ITAAC?

MR. HOUGHTON: And what we didn't say to you was that there are going to be several SDPs. The one we've talked about is the one for hardware. And there will be ones for operational programs which will be a flow chart. And there will be one for security which will be more aligned and the staff, I'm sure, is going to talk about this.

CHAIRMAN JACZKO: Wait, so I thought I was hearing that you like the matrix better.

MR. HOUGHTON: We like the matrix for the hardware. For security, there'll need to be different SDP.

CHAIRMAN JACZKO: Okay, so there we would only have the matrix for the hardware pieces?

MR. HOUGHTON: Yes that's correct.

CHAIRMAN JACZKO: Okay. So then on the hardware pieces I guess what I'm hearing is you would assign risk based upon the risk significance of the component. The last thing, if you look at the matrix, half of the boxes are green. Why is that? I think the staff proposed them -- in the matrix you've got four columns on the left, you've got three columns on the bottom and if you can count up the boxes, half of them are green. So we're saying that half of all of – well at least in principle half of everything's green. Why is that?

MR. HOUGHTON: I think it's the logical effort of comparing the, how risky is it and what was the amount of degradation? Okay. I mean, if you look at the ROP you would probably say that 95 percent of the findings are green just because they come out that way in the RIS. And they're all important. As Greg said, green is not good. And you need to put that in your corrective action

program and NRC and look and see that it's fixed. But I think it's a result of a logic analysis.

CHAIRMAN JACZKO: I guess that is what I am trying to understand, what is the logic? I mean, you know, if I look at performance indicators findings, in principle, we're putting those into PRA's. And that's how we're getting the threshold. So we have a logic where we're saying if you go through the SDP and you get to a core damage frequency of 10 to the minus seven or delta CDF of 10 to the minus seven, I run that through and ultimately it gets traced back to the Commission's safety goals. And it's all kind of drawn back from that. So I can kind of objectively determine what's green, white, and yellow and red. Here, I just got boxes and they are different things. And what -- you know, is there some kind of logic that tells me why, you know, if I look at it that, you know, medium degree of non-conformance with a low importance is green? What's the logic for that? Why wouldn't that be a white? How do I objectively say that that's green versus white?

MR. HOUGHTON: Well, I'd like the staff to answer it too. From my point of view --

CHAIRMAN JACZKO: Okay, be prepared to answer that.

MR. HOUGHTON: [laughs] But, I think we would say that if the risk of that -- if you're in that first column and the risk is so low -- again, the colors determine how much inspection effort is added to the baseline. And so I think the logic is that if it's a very low risk item, that it should not require additional inspection other than making sure that it was corrected.

CHAIRMAN JACZKO: And again, I'll end with this. So, if there's a high degree of nonconformance. So I don't know what that means. But let me,

you can tell me if this is wrong, but let's say that I have a reactor coolant pump and I put the reactor coolant pump in -- well that's not a good example. Let's try something else. But say a containment cooling chiller or something like that and I put that it upside down. That component -- let's assume that that component is a low risk component -- but I've got a construction process that allowed me to put it in upside down. To me I would look at that and say that's of -- that's a high degree of nonconformance. And for something like that to happen -- even though it happened to a low significance item, that would tell me a lot about the process and that there's significant process flaws. So isn't there some way that that process flaw should be incorporated into that determination of the significance of the risk as well?

MR. GIBSON: Yeah, I think we, all of us, have had instances where that exact same thing has happened. In the corrective action program, you do an extent of condition. So you try to determine, is it programmatic in your breakdown. If so, where else could this have occurred? That immediately expands the significance. And through the SDP process, you know, you would escalate in the colors.

We would also say that we did take a number of findings from what I'll call the good ole days from when everything was in construction. And we took those construction violations and we put them in the matrix. I mean, you don't want to have every finding to be red and you don't want every finding to be green. We want to have a measured response by which the Commission would escalate at the level of engagement, the amount of inspection. And it confirmed pretty much that the appropriate actions would be taken at appropriate steps where everybody looked around and said, "Yeah, that was a complete

programmatic breakdown involving important safety systems and it would have been a red finding." So you can get to red within this Construction Reactor Oversight Process.

MR. HOUGHTON: And each of those columns does include either a -- there's a white, yellow or red at the top of it. So if you had a breakdown in all of your construction, your ability to identify it early on and whether it's been a problem before, you can get a white. Now a white is pretty significant. It's general quarters for the station. And a second white in that cornerstone puts you in a degraded cornerstone which is very significant. So I think it has some power there.

CHAIRMAN JACZKO: Thank you. I appreciate your answers. And now we'll have the staff next. Thank you very much.

MR. BORCHARDT: We're ready. Good afternoon. I just wanted to react to one thing that was said earlier in the presentation. And I think this is understood but I just wanted to say it to be clear that the construction ROP is much more than ITAAC verification. And it's entirely possible, at least in my mind, that you could fail to satisfy an ITAAC and there be no regulatory issue. It might not be a performance issue, might not be a violation or an inspection finding, it's just that the component or measurement or whatever it was failed to satisfy the ITAAC. What would have to happen is there would have to be some correction done in the plant until the ITAAC was satisfied. Then you get back into the process. And I think we'll probably explore related issues more in the following Qs-and-As. But Mike will begin the briefing.

MR. JOHNSON: Good afternoon, Chairmen and Commissioners. We're pleased to be here to discuss the staff's activities and response to the

direction that we got form the Commission that we got in December 2008 that asked that we consider the objective elements of the ROP and develop construction assessment program options for the Commission's consideration.

Of course, we have a construction oversight process in place today. We began implementing this process at Vogtle in July of this year and we recently completed our first quarterly assessment of ongoing construction activities. Our construction experience from Vogtle as well as from Watts Bar Unit 2 and the fuel fabrication facilities provided insights and we actually incorporated those insight into development of the process that we've proposed in the Commission paper and we're talking about today.

We're not going to spend time in the presentation talking about our stakeholder outreach efforts on this activity, although you should know they were extensive. We conducted 15 public meetings. We had a Federal Register Notice and we benefited greatly from that stakeholder involvement. The recommendation that we provide in the paper we're talking about today provides in our perspective a sound, clear approach to construction oversight and again benefited from the stakeholder input that we got.

Tim Frye who is the chief of the New Reactor Construction Assessment Allegations and Enforcement Branch in NRO is going to discuss the development of the current construction assessment program options and our recommendation with a focus of key considerations regarding performance indicators, significance determination process, and safety culture, our approach for addressing safety culture.

Chuck Ogle, who is the director of the Division of Construction Inspectors from Region II, will discuss our current assessment program

experience and he's going to provide another example for you with respect of how we would disposition a finding under the Construction Reactor Oversight Process in our current assessment process.

And then finally John Tappert, who is the deputy director of the Division of Construction Inspection and Operational Programs in NRO, will provide a summary and describe the next steps. And with that, I'll turn it over to Tim Frye.

MR. FRYE: Okay, thank you Mike. One thing I'm going to do is I think some of our industry presenters covered some of the background and some of the issues that are on my slides. So I will try and not be too redundant and I might skip over a few things. But thank you, Mike. Good afternoon, Chairman, Commissioners. In October of 2008, the staff submitted a Commission paper which described a construction -- are we on slide four? There we go, thank you - the construction assessment process that had been developed to support the new reactor construction. This assessment process which has been implemented at the Vogtle construction site uses tradition enforcement to assess the significance of inspection findings. NRC response to licensee performance is determined by actions specified in a construction action matrix which was modeled after the reactor oversight process or ROP action matrix. The input to this construction action matrix is based on the severity level of identified findings as determined by traditional enforcement. This current construction assessment process does not use performance indicators.

In a December 2008 Staff Requirements Memorandum, the Commission directed the staff to reconsider this construction assessment process and propose policy options to the Commission that address more

objective elements such as construction performance indicators, a significance determination process or SDP. As the industry pointed out, they sent in a proposal in July 2009, which proposed an ROP like framework. We did establish a working panel in December 2009. It was a multi-office working group to continue the development of options for revising the construction assessment process. And prior to that, in August 2009, the staff did submit a Commission paper informing the Commission of the work to date and the planned efforts to evaluate this NEI proposal from July 2009. The results of this working group were summarized in the recently issued Commission paper SECY-10-0140 that provided assessment program options and the staff recommendation for revising and improving the current construction assessment and oversight processes. Next slide.

So I think as the industry previously covered, the construction ROP working group considered all the relevant operating reactor ROP elements in developing the staff proposals for revising the construction assessment process including developing a construction regulatory framework, construction SDPs, construction performance indicators, the construction action matrix, the staff's approach to assessing safety culture during construction. And we will discuss each of these elements during our presentation today. Next slide.

Okay, starting with the regulatory framework, in developing the options for Commission consideration, the staff developed a construction regulatory framework that is very similar to the ROP regulatory framework. The construction ROP framework uses a top down approach that starts with a NRC mission statement for construction oversight and leads to six construction cornerstones of safety. In developing this framework, the staff carefully

considered all construction program areas and many different options. One early approach that was considered was to base the framework only on those construction activities that support ITAAC verification and the Commission's 10 CFR Part 52.103(g) finding to authorize operations. Subsequent discussion by the NRC staff working group with various stakeholders lead to the conclusion that the plant operating programs and procedures required by the combined license to support fuel load and plant start up were also important to construction cornerstones of safety.

Although developed independently by the NRC staff using many of the above considerations, the staff's construction regulatory framework proposal is very similar to the industry's proposal submitted by NEI in July 2009. There was good consensus and alignment from all stakeholders on this framework and it is part of the staff proposal. The staff believes that the use of construction cornerstones of safety will be an improvement over the current process as it will provide more structure to the oversight of construction. And the grouping of findings by cornerstone allows NRC staff to gain additional insights into licensee performance. Next slide.

So this is the framework that -- this is the regulatory framework that we've developed and in this framework, most findings associated with ITAAC verification would be assigned to one of the four construction reactor safety cornerstones. Findings associated with the implementation of construction programs such as the quality assurance program would also be assigned to these cornerstones. Findings identified through security inspections would be assigned to the security cornerstone and it would be handled separately from other findings as is done in the ROP. Findings associated with the development

of operating programs required by either regulation or license conditions would be assigned to the operational programs cornerstone. Next slide please.

The construction assessment process currently in use at Vogtle includes an action matrix that is intended to provide a consistent, predictable, and understandable agency response to construction performance issues. Similar to the ROP, this construction action matrix provides for a range of agency actions that are commensurate with the significance of construction findings. Generally, in the construction assessment process, regulatory involvement will increase as the number and significance of construction findings also increases. Unlike the ROP however, the current construction assessment process uses traditional enforcement as the input to the action matrix. And in addition, this construction action matrix does not include construction performance indicators as an input.

While a viable construction assessment process is currently in use, the staff believes that several improvements could be made. For example, if the Commission directs the staff to implement a construction regulatory framework then the number of current construction action matrix columns and the thresholds from moving from column to column would be reconsidered by the staff.

Additionally, similar to the ROP, thresholds for action could be tied to degrading performance in one or more construction cornerstones, rather than simply relying on the number and severity level of violations identified. If the Commission directs the staff to develop construction SDPs then these SDP results would replace traditional enforcement as the input to the construction action matrix.

Finally, a revised construction action matrix would have the

flexibility to add other inputs such as construction PIs in the future with little change needed to the overall construction assessment program. Next slide.

One of the key improvements to the current construction oversight process that is proposed by the staff is the development and implementation of construction SDPs. In developing options for construction SDPs, a significant challenge to both the NRC staff and stakeholders was in trying to figure out how to identify and apply construction safety risk in a quantitative manner. Another challenge was in how to handle programmatic construction deficiencies which the staff identified as the significant difference from the operating reactor SDPs. While developing these staff proposals, there was substantial debate among the working group members regarding the merits of using construction SDPs versus the continued use of traditional enforcement. In particular, there was significant discussion as to whether or not the benefits of construction SDPs would be outweighed by the resources required to develop and implement these SDPs.

After significant discussion and consideration, the staff reached general consensus that there should be an overall benefit to using construction SDPs. NRC staff have proposed the use of three different construction SDPs, one for programmatic issues, one for technical findings and a third for security findings. As a part of this proposal, the staff has developed the basic principles for two options for these construction SDPs. As described in the Commission paper SECY-10- 0140, these options include both the construction risk matrix approach and the flow diagram approach. It's likely that the risk matrix approach will be found to be best suited for technical issues while the flow diagram approach appears to work best for both programmatic and security issues. The basics for each of these proposed SDPs have been developed with stakeholder

input. They all appeared to be viable, but we need additional work to fully develop and implement on a trial basis. Next slide.

As previously noted, the current construction assessment process does not use performance indicators as an input. The staff has previously attempted to develop meaningful performance indicators and thresholds that would provide relevant insights into regulatory performance by a licensee during construction. During the past year, NRC staff again worked closely with interested stakeholders to attempt to identify relevant construction performance indicators. During this most recent effort, the staff used the same criteria used during the initial development of the ROP performance indicators and thresholds. This criterion requires in part that any metrics used for performance assessments should be objective, easily measured, and provide relevant insights into licensed activities. Numerous possible construction PIs were again identified and evaluated using this criteria. However, the staff still could not identify any PIs and thresholds for new reactor construction that met these criteria.

The staff does acknowledge that performance metrics are routinely used by the industry during construction. But I think as Tom Houghton pointed out earlier, the metrics that are used at a construction site which would include employee safety concerns, quality control reject rate, truly do not provide insights into licensed activity performance, and they are mainly for managing the scheduled control for the outage, or for the construction work.

Given the lack of relevant and available metrics and thresholds, the staff proposes to continue the further development of construction performance indicators but pursue implementation at a later time.

The staff plans to continue to reassess the use of performance

indicators during the annual construction oversight process self assessments to continue to try to identify relevant metrics. Next slide.

A review of historical construction issues identified in the U.S. and current international experience reemphasizes the importance of safety culture in the new construction environment. The current construction assessment process includes the method for assessing construction safety culture in a matter consistent with the ROP approach. The industry has commented that safety culture during construction is fundamentally different than during operations and cannot be effectively assessed by a ROP-like process.

However, absent another method to assess safety culture, the staff believed that adopting the ROP approach to construction activities is the best short term method for assessing licensee safety culture during construction. Therefore the staff is not recommending any changes at this time to the current approach for assessing safety culture during new reactor construction. NRC staff have been active participants in the agency safety culture policy statement development. We will continue to evaluate our approach to assessing construction safety culture as the agency policy statement is finalized and additional feedback is provided by stakeholders. Next slide.

The results of the staff's efforts are three options for Commission consideration. All three of the options recommend the continued use of the construction action matrix. Recommends the continued development and implementation of construction PIs at a later time and treat safety culture the same.

Option 1 is to keep the status quo. NRC staff would continue to implement the current construction assessment process using traditional

enforcement as the input. An advantage of this approach is that it has been successfully implemented by Region II at other construction sites. A disadvantage of this approach is that traditional enforcement could be viewed as being subjective when compared to other approaches. There are little to no additional resource implications with this approach, with this option.

Option 2 would be to implement a construction regulatory framework but continue to use traditional enforcement as the input to assessment. An advantage of this approach is that a construction framework and cornerstones provide more structure to oversight and the grouping of findings by cornerstones allows the staff to gain additional insights into licensee performance. A disadvantage continues to be the perception that traditional enforcement is more subjective and less transparent approach to assessment. The additional recourses needed to implement this approach are moderate as most of the development is complete and much of the process is currently in place.

Option 3 would be to implement a construction regulatory framework and to develop and implement the construction SDPs. The advantage to this approach is that it provides the most objective, predicable, and transparent method for assessing and responding to construction deficiencies. The disadvantage of this option is that it carries the highest resource impact due to the need for continued development of the construction SDPs, additional staff training, and the possible higher implementation cost associated with using SDPs. Next slide.

As described in Commission paper SECY-10-0140 the staff recommendation to the Commission is to approve the continued development

and implementation of the revised construction oversight process, as described in option 3. The process improvements in option 3 provide the most objective, predictable, and transparent approach to Construction Oversight and Performance Assessment. And with that I'll turn it over to Chuck Ogle.

MR. OGLE: Good afternoon Chairman and Commissioners. In the Region II center for construction inspection, we're currently providing regulatory oversight for several construction projects including the work under the limited work authorization for Vogtle's Unit 3 and 4 pursuant to Part 52, the Watts Bar Unit 2 reactivation in accordance with Part 50, and the construction of URENCO's Gas Centrifuge Enrichment facility and Shaw/AREVA MOX Oxide fuel fabrication facility both in accordance with Part 70.

There are separate oversight programs for each of these projects, however, they all share some common elements. For instance all include inspection, enforcement, and assessment to form an oversight program. All include the ability to escalate NRC actions and engagement as warranted. And the results of the process are for the most part public. Slide 15 please.

There are also differences between the oversight programs and the Construction Reactor Oversight Proposal. The construction significance determination process proposed by the staff for Part 52 construction projects is a more structured approach and is currently used for any of the facilities regulated by CCI. The structure will provide additional clarity and determining the significance of potential findings.

As Tim Frye mentioned, it may also involve additional effort on the part of the staff and the licensee. In addition, the method used to establish the regulatory response at the facilities under construction that are currently

regulated by CCI are different. The current and proposed oversight processes for plants under construction pursuant to Part 52 use an action matrix to determine the appropriate regulatory response to performance. The staff can refer to the ROP action matrix if appropriate for determining the response to performance issues at Watts Bar Unit 2. However the staff does not use an action matrix to determine the significance of findings at other facilities regulated by CCI. Slide 16, please.

The current oversight processes are working and the Center for Construction Inspection has experience with these processes. A response to identified issues has been appropriate and timely. And the staff has a good sense for thresholds, including the minor violation threshold. However, there have been some minor challenges for the inspection staff given the variations between the programs. Next slide.

I would like to provide a comparison of how a recent, actual construction inspection finding would be treated by the current and proposed assessment processes. The NRC has identified one escalated enforcement item during recent construction activities. This violation was associated with the Browns Ferry Unit 1, long-term torus integrity program and involved welding problems on the torus. A Severity Level III violation was issued for this condition. The issue would have been a Severity Level III violation in the current Part 52 construction assessment program.

In the proposed assessment program option, the staff would use the technical findings significance determination matrix to disposition this issue. Although the matrix is not finalized yet, the staff anticipates that this issue would be indentified as a white finding.

Our response at Browns Ferry was to issue a notice of violation and conduct follow-up inspections to ensure that the violation was adequately addressed. If a similar issue was indentified at a plant being constructed pursuant to Part 52, under our current assessment program we would conduct a supplemental inspection similar in scope to our actions taken to review a white finding in the ROP. The requirements in this procedure are similar to the actions that were taken to review the corrective actions associated with the violation at Browns Ferry.

If a similar violation was indentified and the proposed process was in place, the white finding would be assigned to the inspection/testing cornerstone. If this issue was the only white finding open at the time then a supplemental inspection would be conducted. Or if this finding was the second white finding identified in the inspection/testing cornerstone, the cornerstone would be considered degraded and a larger scope supplemental inspection would be conducted. Therefore NRC response to a single violation with increased significance is expected to be similar whether traditional enforcement or an SDP is used. However, the NRC's decision making process would be more transparent with the use of an SDP and the NRC response may be increased if additional significant issues are open in the respective cornerstone. Slide 18, please.

The Center for Construction Inspection has been engaged with the development of the construction assessment program options presented to you today and supports option 3 including the proposed pilot. In particular we intend to establish pilot program acceptance criteria to measure the efficiency, effectiveness, timeliness, repeatability and transparency of the proposed

process. Slide 19, please. I'll now turn it over to John.

MR. TAPPERT: So in summary, we will continue to implement our assessment program as described in Manual Chapter 2505 at Vogtle and at other sites being constructed pursuant to Part 52 as construction activities warrant. We believe the current program is both robust and viable. However, we are always looking to improve our processes and after considerable stakeholder interaction, the staff believes that there is an opportunity to improve the objectivity and transparency of the Construction Reactor Oversight Process. We are waiting Commission direction; and should the Commission direct the staff to implement our recommended option 3, additional work with all stakeholders would be needed to continue to fully develop the construction SDPs. The staff would also need to develop other guidance documents and train headquarters and regional staff in the new oversight processes. Staff expects that this work would be completed in approximately 12 months after a Commission decision. And once a combined licensee is issued the staff then recommends a one year pilot with a new construction oversight process in parallel with the existing assessment process. The staff would evaluate pilot results and fully implement the revised construction oversight process if successful and if the pilot results indicate concerns with the new processes then the staff would come back to the Commission with some additional options. So with that, that completes the staff's presentation and we would be happy to entertain any questions.

CHAIRMAN JACZKO: Thank you. Commissioner Magwood.

COMMISSIONER MAGWOOD: Thank you Chairman. Let me start with Bill. You did know today was Beethoven's birthday, didn't you? He looked it up on his Blackberry, I suspect. The industry panel cited several instances

where there were, I think they said, Level IV violations that in their view would have been minor or green non-cited violations. Just generally, do you agree with their general assessment of that?

MR. OGLE: I can address that. At least for the ones that would have come out of CCI, I would agree, most would be green non-cited violations assuming the corrective action program we deemed that it was working properly.

COMMISSIONER MAGWOOD: In your presentation you indicated that the regulatory response would be relatively equivalent, whether we stay the traditional process in those instances or went to the c-ROP. Therefore, I think the thesis from this panel had been it's a matter of transparency and predictability as opposed to the actual quality or quantity of response. Is that a fair characterization? Okay.

Given that, it seems that we are somewhat sensitive then to the industry panel had presented as being a problem of communications with the public to some degree. The concern that they raised was that on the one hand, we have the ROP which people were getting used to or on the other hand we have a traditional process with construction; these violations are coming out, people have to explain then why is this a bigger problem, what's happening? Is that part of the concern that the public will not understand if we have two separate processes? Is that part of what motivates the staff interest in this?

MR. TAPPERT: Yeah. I think a consistent communication vehicle is a desirable outcome. Just to build on the earlier response to the question about the cited violations that the industry panel talked about. We recognize that some of those do represent communication challenges and we actually have changed some of our processes to accommodate that. Early on, when we were

doing our QA implementation inspections, which a number of those Level IV violations came out of, we did not have the option of having minor violations of not documenting minor discrepancies with our requirements. And we've changed our processes to accommodate that; so many of those violations that were cited earlier would not be cited if they were inspected today.

But that being said, I think, to the extent that we can have a unified communication vehicle -- because a lot of this is about public communication. I think that an asset when you can talk about green findings and what have you.

MR. FRYE: I was just going to add because I think it is an important point that some of the violations that were cited there's a key aspect of the construction reactor oversight process, which is that we cannot non-cite a violation until we have confidence in the licensee corrective action program. That's clearly stated in our guidance and our inspection manual Chapter 2505. So that we need to go out and we need to first verify that an adequate program has been developed and we need to go a second time, and verify that it's being adequately implemented. Until we do that we cannot issue non-cited Severity Level IV violations, and that's really a key -- that's a key aspect in the current process.

MR. OGLE: That was also a key aspect in the ROP -- when we implemented the ROP. We had confidence in the experience that the licensee had with their corrective action programs and we were comfortable that when issues got entered into the corrective action program that they resolved correctly. We don't necessarily have that same experience yet with the construction organizations.

COMMISSIONER MAGWOOD: One last question. The pilots you

mentioned on several occasions; could you give us a little bit more of review as to what your thoughts are about that, how that will actually be conducted?

MR. FRYE: Yes, I'll take a shot at that. I think its -- we need to develop the program. It's going to take about 12 months. But we need to develop an acceptance criterion. How we're going to measure the -- whether the program is efficient, effective, if it's identifying safety issues and then the idea is that we just need to try out the new process and measure it against these criteria, these metrics that we've identified for evaluating if it is meeting our objectives for an effective, efficient, oversight process that will indentify safety concerns. And we'll -- if we do identify something that it takes us in the action matrix to the right level of enhanced regulatory response.

So -- and we think about 12 months is the right amount of length to fully vet the process. And actually I was involved in developing the ROP pilot program 10 years ago and I think it would probably be run very similar to that. What I laid down was some of the high points of how that worked and I think that worked pretty well.

MR. JOHNSON: In fact that I was going to suggest that we would borrow from what we did last time to pilot the program. We do want to make sure that the guidance is usable; we want to make sure that it comes out in the same place, so we would look to have different folks look at similar violations using both processes and see where we come out. We want to make sure we come out at the right place, so going to the Chairman's questions about how do you know that the extent of nonconformance and the extent of the risk significance -- how do you know that you have that pegged? You know, what do we get -- is it the right answer and do we need to tweak the tool. So we'll be looking at those

kinds of things based on criteria that we set up and we'll make a judgment about whether we need to make adjustments going forward.

COMMISSIONER MAGWOOD: Thank you, Mr. Chairman can I ask one more question? I know time is over. Probably not a completely fair question, but I'd like to hear your response to it. If a large concrete block were being moved around and it fell on a worker, would that elicit a regulatory response from us?

MR. BORCHARDT: Well, it certainly depends what else that crane was doing, what it was qualified to do, and where it happened on site. I mean, there's a lot of particulars, but yes, we would certainly do --

[simultaneous speaking]

COMMISSIONER MAGWOOD: Certainly OSHA, yes. Would it elicit a Nuclear Regulatory Commission response.

MR. BORCHARDT: Yeah, we would certainly inspect it as an event that happened and then look at the qualifications of whatever failed that caused the event.

MR. FRYE: Yeah, I mean, if it's used for safety-related work, for example, transporting safety-related equipment -- the crane that failed -- I think the situation you described is really an industrial safety concern, but we would certainly -- I would expect we would be looking at --

CHAIRMAN JACZKO: Would we fundamentally -- to be crass here, would it matter whether -- from our perspective, does it matter whether there's a person under the block or not?

MR. BORCHARDT: No.

COMMISSIONER MAGWOOD: Thank you.

MR. FRYE: You know, and in fact I believe that's one of the 5072 reporting criteria, you know, so obviously we are concerned about that sort of thing, accidents at a nuclear power plant.

COMMISSIONER MAGWOOD: from what you were saying, it is actually more important what the crane was moving as opposed to where it fell and who fell on.

MR. OGLE: Well, I guess what I would say is I would think that given the relationship we have with OSHA and the MOU, we would expect OSHA to take the lead on investigating the fatality. But in terms of the sling broke because the sling hadn't been inspected, that -- we'd probably get -- want to get into that too. The common things that would go back to the stuff that we -- is our primary responsibility, structure systems and compliance.

MR. JOHNSON: And we would always be able to use traditional enforcement when you had an actual event -- actual consequences as is the case with the operating reactor program using traditional enforcement.

COMMISSIONER MAGWOOD: You would use traditional enforcement if a worker were killed in an industrial accident?

MR. JOHNSON: You would always have the option to use traditional enforcement even though you would implement in SDP -- I'm really trying to anticipate looking at the degree in our performance and the risk significance where you may not fall within that SDP, we would always have the ability to use traditional enforcement if we thought it was an actual consequence that those tools didn't take us to.

COMMISSIONER MAGWOOD: Thank you, Mr. Chairman.

CHAIRMAN JACZKO: Commissioner Ostendorff.

COMMISSIONER OSTENDORFF: Thank you Mr. Chairman. Thank you all for the presentations and for being here this afternoon. I was particularly pleased to see from both panels' perspectives the level of engagement we've had with external stakeholders through your public meeting process. It appears to be a very fulsome understanding and transparency between the industry and staff here, that's always a good thing

Mike, I want to pick up on a comment that you were making a few minutes ago, and I think also Tim, with respect to the pilot project and you were talking about the parallel enforcement under the traditional approach, as well as under the SDP approach to compare outcome, is that what I understand the approach was? Is that what was done when the reactor oversight process was put into place?

MR. FRYE: Yeah, when we piloted the ROP ten years ago, it was running parallel with the prior process --

COMMISSIONER OSTENDORFF: The enforcement piece was running parallel is that what you're --

MR. FRYE: The whole thing was running parallel. Now one important thing is we're not going to double-hit someone for a deficiency or finding -- but we ran both processes in parallel and just to -- one reason for doing that is because you want to compare what your new program is telling you against your old program, that's just one of the checks that we would be doing.

COMMISSIONER OSTENDORFF: I'm want to shift to different questions and concerns, the recommendation in the paper for Option 3, with the significance determination process. The Chairman in the previous panel had talked about some questions that go into the matrix and about the details of how

we get into what the significance are of various risks associated with the construction oversight process. A few weeks back, we had a Commission meeting dealing with the alternative risk metrics for new reactors and, as I recall, and help me out here, I think that there was discussion that some of the risk profiles for new reactors would not be finalized until close to fuel load time period. I was trying to get a sense as to how there might be an interface between the new reactor risk metrics that are not yet in place and how the risk informed approach would be pursued for new reactors.

MR. FRYE: Yeah, I think I can answer that to a certain extent. The risk profile for new reactors really does not affect our significance determination for the SDP. Where it comes into play will be when this plan is built and you're trying to put it into the existing ROP, so that's a challenge we have and we realize that and we're working very closely with NRR, but the risk matrix with the different risk profile for the new reactors that has really no impact on --

COMMISSIONER OSTENDORFF: So going to this green and the horizontal access, which is the risk importance -- at first blush I would have thought that the risk importance of a particular safety system or system that might be impacted by the construction process would be a function of the risk analysis.

MR. FRYE: Well, it will be developed by the PRA evaluations that our risk branch has done to support the new reactor construction licensing reviews, so they will take the risk contributions to the systems that are in question and determine based on the risk importance of that system. That's how you'll get that X-axis.

MR. TAPPERT: I think the point is it's not an overly refined system

and I think we have sufficient information to indicate which of these three columns a given system our SSC would be in, so I think we have enough information without even the full-blown PRA to be able to make that sort of assessment. So, you have the relative risk importance of the various systems and then you have the contributions of the construction degradation or non-conformance , the two kinds of dimensions that the Chairman was speaking of earlier.

MR. JOHNSON: I think that's the key. We'll know enough to know the relative risk significance of the various components and structures that are being impacted by this performance deficiency, although, as you heard in that Commission meeting, it will be a while before we have full confidence in terms of what that actual PRA is going to look like and what it is going to play out with respect to operating experience. Hope that helps.

COMMISSIONER OSTENDORFF: That's good. Thank you. Thank you Mr. Chairman.

CHAIRMAN JACZKO: Commissioner Svinicki.

COMMISSIONER SVINICKI: I want to add my compliments to all of you. I was here for the Commission meeting in 2008 on this and you've come a long way, so I want to compliment you on all the hard work in bringing this forward. I want to return to the pilot for just a second. You talked about even with the ROP itself, and now with the construction ROP, run a pilot alongside the construction assessment approach that you're using right now for a comparison purpose, so if there is a finding and you compare the two and there's two different regulatory outcomes, which one do you actually impose or pursue? Do you go -- is it at a pilot site -- I guess which program is actually in place for the

piloted licensee?

MR. JOHNSON: I'm going to answer and Tim is going to tell me if I got it wrong. We're going to use the traditional enforcement -- that the framework with the traditional enforcement, as the program would pilot actually this SDP and then, of course, should there be an insight where we think we really are in the wrong place we'll have to figure out, as an exceptional case, whether or not we want to do something different. But the program would be traditional, of course, while we're piloting the SDP.

MR. FRYE: I would just say that the pilot is one of the things we have to develop. Once we get direction on the way to go, but I think what Mike has described would certainly be the way we would probably go. The current assessment process is the assessment process of record and so that would be what we would issue any actions on and use.

COMMISSIONER SVINICKI: Okay, that answer is unexpected to me, so I have to think about that for a second. We heard from the previous panel and it's so rare that there be this kind of unanimity and we heard such cries for the Commission to make a decision and urged to endorse the staff's recommended option, so that we could begin to capture the benefits of this new program. Maybe that's why they were really urgent for us to be expeditious, because the whole pilot process has to go on before they can really be under this new process is what it sounds like here, so it's a little bit longer duration until this is actually realized, under that kind of a construct.

The other thing I wanted to ask you about was performance indicators. And what I'm hearing, tell me if this isn't fair, I perceived that you did a really, really thorough look at performance indicators and their potential use

here. This is my turn now. I think you really discredited the ability of having the kind of data that you need to have meaningful performance indicators as part of a construction ROP. But yet you indicate that you would assess it annually as soon as -- one year after you put this in place. It seems like you so thoroughly identified the impediments to getting the kind of data you would need to have meaningful PIs that I'm kind of -- your openness to it looking at it soon or perhaps -- construction only goes on for X number of years in any individual case -- I'm challenged to think when you would really even be in a place to have meaningful data to be a foundation for PIs. So is that openness to looking at it as soon as 12 months after you put the pilot in place, is that kind of just a general -- it's your usual demeanor of saying we're open to looking at things all the time or do you really feel that you could even two years or three years from now be in a place where -- of course it always depends, if a combined license is issued, so that' obviously the first precursor. But when would you be -- it seems to me you would have to have an extremely active construction program, happening at many sites, for a long period of time in order to have any kind of contemporary or modern base of data for a PI program. Is that accurate?

MR. JOHNSON: I think that is accurate. I just want to tell you that I probably was the biggest proponent in terms of pushing the staff to find performance indicators and we did extensive work and ended up with scores of potential PIs and ended up having them be chiseled away to what we ended up with being none that we were proposing at this time, but I think it's really to the staff's advantage and to the industry's advantage to come up with credible PIs. At the time of the reactor oversight process, the industry was a major motivator in the creation of performance indicators, because they recognized if there were

objective kinds of things that we could find and measure that had a bearing on performance that took us away from the subjective nature of some of the things you can get into.

So I really do mean that we're going to continue to look, I'm going to continue to ask the staff to look as we get data, as we get indicators that show up, to ask ourselves does this have a nexus to our regulatory mission. Is there some way that we can satisfy the requirements of a PI to bring that into the program? So it's more than a statement from the staff, we really are trying to find PI's going forward.

MR. BORCHARDT: If there are PI's out there I think they will reveal themselves. I was the construction resident at Limerick 1 and Hope Creek, it's a long, long time ago, but they had PIs back then and they're used extensively for the management of the construction project. And even though they weren't a formal element of the inspection program back then, I paid very close attention to the PIs because they were talked about in every daily planning meeting held on site, and to the extent that there were some that gave me an indication of a hint of a degradation in the QA/QC program or some other element, that was a kind of little signal to me to go out and do an inspection of a certain area or have regional expertise come in and help me out on site. I think the same thing is going to happen. It's just that it's very hard to make any kind of a safety nexus to most of them because they're management tools, very effective but they're management tools.

COMMISSIONER SVINICKI: Well I think we heard that in Tim's presentation as well. The question is relevance, obviously that the constructor and licensee will be monitoring a ton of indicators, but what's their regulatory

relevance. Okay, I appreciate that calibration. Thank you Mr. Chairman.

CHAIRMAN JACZKO: Commissioner Magwood has talked a lot about Beethoven and I wonder if we -- I'm trying to think if there's a good analogy here with what we're doing, and what little I know of Beethoven I think towards the end of his life he was deaf, but he was still able to play music. I'm trying to think, maybe there's an analogy here that --

[laughter]

-- at the end of -- in essence what -- I'm not, you know, I'm not sure if what we have here is really a difference between traditional enforcement and the significance determination process. I mean, clearly in the reactor over site process we have a clear nexus with risk which ties, ultimately, back to the Commission's safety goals. I don't know that we have anything here other than different names -- colors, rather than levels that really fundamentally is different -- or maybe we just, you know -- or what we don't have is just as refined of a process to determine the level, whether it be a color finding or whether it be called a Severity Level I, II, III or IV. And so I look at this -- I'm trying to understand why Option 2 isn't really the best option.

MR. BORCHARDT: Yes, let me before Tim answers -- as the person sitting on the other side of the table with the least amount of involvement in the work that's going on -- I think it's clear that the regulatory tools that are available to us through our construction are going to be the same for either. Really what the staff proposed option does is provide the most enhanced transparency and predictability to the process. I mean that's the value of the SDP and the ROP. It's the same thing in essence. It's not really, from my perspective, that dramatic of a forcing function on what regulatory actions are

going to be taken. Or, frankly, that much of a forcing function on what corrective actions the licensee takes in response to the issues that are identified.

MR. FRYE: Yeah and I was going to add that. I think the benefit is that it's very objective, it's very repeatable, it's very predictable if you have this matrix that you know exactly where you're going to end up.

CHAIRMAN JACZKO: You are talking about the action matrix though not --

MR. FRYE: No, I'm talking about the risk matrix --

CHAIRMAN JACZKO: The staff is not recommending the risk matrix. You're recommending the flow chart. Not the risk matrix -- or not the significant determination matrix.

MR. FRYE: No, we are.

CHAIRMAN JACZKO: Oh you are. Okay.

MR. FRYE: For technical issues we are recommending the risk matrix -- the colored risk matrix as a -- as a good way to assess technical findings. And we would put ITAAC findings under there. And so as Bill said, it's just much more objective --

CHAIRMAN JACZKO: And that is where I am not convinced, to be honest. I hear you say that its objective but I -- you know, like I said, I look at it and I -- why are there four columns on the left hand side? Why is there a minimal column versus a low? That's not, to me, objective. I mean that's --

MR. FRYE: Well, the structure is based on engineering judgment, so there's really not too much magic that's there. But once we develop -- once we develop a working group of expert panels to take a AP1000 certified design and identify, you know, where on that X axis each one of the key systems would

fall out, that's pretty well said and it's very objective.

CHAIRMAN JACZKO: To get to a similar place though with level violation compatible -- I mean it's not exactly a very fine grain delineation between systems. We've have three levels of risk, four levels of non-conformance, and I mean I appreciate that once you kind of bin everything, all the arguments were in where you bin everything and what the differences are. That's incredibly subjective.

MR. TAPPERT: It's an attempt to give it some structure. And traditional enforcement has structure too. I mean we don't randomly pick violation levels. There's some logic behind this and this is just trying to provide some more logic in a structure to reproduce this is a given finding; this is a given outcome, and the regulatory response is appropriate to that finding. And part of the reason for the pilot is to kind of walk through it to make sure, while a traditional enforcement would spit out this, you know, the SDP is going to give me that, and which of those really make more sense or more just in our minds as the appropriate regulatory response. So that's why our recommendation is to continue to develop this, to make it as objective as possible, and to implement it for a year to see what kind of lessons we can learn from that process. But it's not perfect, right? I mean it's not completely turn the crank and gives it out. It tries to give some structure, which will provide a predictable regulatory response for a given situation.

CHAIRMAN JACZKO: And I'll just close this and the only reason why I push on this, quite frankly is because of the resource implications. I mean, Bill, you're telling me that the regulatory response are ultimately the same regardless of what you use. As a communication tool, I think that's a great thing

to do. But if the resource implications are very significant and we're talking about a year to pilot this, we need a year to get it ready, I don't know that that's the best use of our resources as an agency. If what we're really getting is an incremental improvement in the objectivity versus going from having a Level IV determination versus a green finding.

Yeah, I don't know that there's that -- I mean I'm not even convinced that there's that much real fundamental difference between those. In fact, what may come out of the pilot is everything lines up and things that are Level IV's tend to come out as greens and, you know, it kind of works out that. And then we spent a lot of time and effort -- and again so I wouldn't certainly be -- I think be leaning not towards Option 1 but towards Option 2 where we then take the corrective action matrix and use that as a metric to ultimately have communication. But the inputs continue to be essentially the traditional enforcement methods.

MR. JOHNSON: It may be possible to scale that pilot – if we get to a point where we're worried about resources such that we give it a try but don't extend a lot of resources. The industry's been interested in proceeding with testing. I do think that I know it's intangible in terms of the value of communication, the value of objectivity. I've found that if you can get people away from arguing about the significance and get them focused on the action -- the quicker we can do that the better off we're going to be. So I think it's worth investing in that test of the SDP. So that's why I think we're proposing that there's not a lot of risk in doing Option 3, and maybe not even a lot of resources and maybe potentially significant benefit.

MR. FRYE: Yeah, I was just going to add that as part of our

development work there will be a bench marking as we refine the SDP. We'll have workshops with the industry to benchmark this.

CHAIRMAN JACZKO: But we don't expect the bench marking to show significant differences, do we?

MR. FRYE: Well the bench marking would be, for example, to take historical performance deficiencies and see how the new process would -- you know, if we come out in the same close area.

MR. BORCHARDT: I was thinking about the issue you raised. You know, the way it's done under the traditional enforcement is that you have the enforcement policy and there's supplements for each area. There's one for construction. The examples used in those supplements are pretty general and high level. One of the great frustrations with the staff prior to ROP was the comparison between regions, all well intentioned, all trying to implement the policy as written, but just having slightly different interpretations resulting in the different regulatory outcome for identical findings.

As long as we have one center of excellence for construction, which is in Region II, we don't have a problem with consistency because there's only one implementer. But if we get to the point where we have more than one region doing construction inspection we'll either need to significantly revise, in a much more detailed fashion, the enforcement supplements or the other answer is to have the SDP with the risk matrix, the way it's laid out and that will provide a predictability and a consistency that wouldn't otherwise be there.

MR. FRYE: Just one more benefit to pursuing the SDP, and that is that the SDP results in colored findings which at that -- one of the key things that we had to figure out for the ROP was how to combine performance indicator

results with inspection findings and the color coding that came with the SDP allowed us to that. So we would have difficulty if we were to develop some performance indicators and we did not have SDP results to integrate -- the traditional enforcement and performance integrators would be difficult to integrate without this common color coding scheme that's based on some objective basis.

CHAIRMAN JACZKO: Well, I appreciate your comments and I've used all of Commissioner Apostolakis' time.

[laughter]

I appreciate your answers and certainly echo my colleagues thanks for a very good effort on the part of the staff. The Commission has this matter in front of us right now and certainly under -- my suggestion is that this is something that we finalize this month. I think that would be -- it's probably difficult given that we have less than a week before the holidays, but I do hope we can move forward quickly and at least get something moving forward. Regardless of what we do, the Commission endorses the new program, we're likely piloting it and we may find out that in the pilot that there's not that much difference from what we do. So -- but that might be the best thing, to try the pilot and see. Thanks.

[Whereupon, the proceedings were concluded]