

U.S. NUCLEAR REGULATORY COMMISSION

+ + + + +

BRIEFING ON STATUS OF NEW REACTOR ISSUES - COLs

+ + + + +

MONDAY, OCTOBER 16, 2006

MORNING SESSION

+ + + + +

The Commission convened at 9:30 a.m., Dale E. Klein, Chairman,
Presiding.

NUCLEAR REGULATORY COMMISSION:

DALE KLEIN, CHAIRMAN

EDWARD MCGAFFIGAN, JR., COMMISSIONER

JEFFREY S. MERRIFIELD, COMMISSIONER

GREGORY B. JACZKO, COMMISSIONER

PRESENT PANEL 1 INDUSTRY:

MARVIN FERTEL, NEI

J. BARNIE BEASLEY, SOUTHERN NOC

JAMES J. (JOE) SHEPPARD, STPNOC

JOE TURNAGE, CONSTELLATION GENERATING GROUP

GENE GRECHECK, DOMINION GENERATION

PRESENT PANEL 2 - OTHER STAKEHOLDERS:

SAM J. (JIMMY) ERVIN, NC UTILITIES COMM

MICHAEL W. SOLE, FL DEPT OF EP

DAVID LOCHBAUM, UNION OF CONCERNED SCIENTISTS

PROCEEDINGS

CHAIRMAN KLEIN: Good morning. Feels like a Monday morning, doesn't it. Today is part one of a two part Commission meeting on the status of new reactor issues and so this morning, we are going to hear from industry panel and then, we will move to hear from the stakeholders including representatives North Carolina Utility Commission, Florida Department of Environmental Protection and Union of Concerned Scientists.

Part 2 will take place this afternoon that will have a lot of our staff activities of NRC activities. And so, having been a Commissioner for 3 months and 16 days but who's counting, I can tell you that we are very active, involved in our processes for the new reactor activities, and we really need to make sure that we give our requirements clearly and then we expect industry applications to be very accurate and complete. And then in return, I think the NRC should respond in a timely manner.

We have a lot of rulemaking and guidance activities nearing completion and these will include a lot of stakeholder participation so we make sure our regulatory requirements are met and that they are and clearly focused. I look forward to hearing the discussion today, should be some good panels. And we have a very important job ahead of us to ensure public safety, security and public confidence so that electricity is provided it for the American people in a safe and reliable manner. So I look forward it to. Any comments from my fellow Commissioners?

COMMISSIONER McGAFFIGAN: Mr. Chairman, I think this is a very

important meeting. I looked at the prepared remarks of various folks ahead of time. I will tell the panel that's in front of me that I was hoping we would hear more from you than is apparent on the charts with regard to the rulemaking efforts we have underway. We've been fairly diligent about putting these documents out on the web page, Part 52 which I understand is an even a larger dump truck than the one in January, 73.55 et cetera which I think would qualify for dump truck status, 73.68, possibly P changes, and various other things that are out there. And so, if you have anything to say on that, I think this is your chance and I'm not sure we are going to have a lot of other meetings on those individual subjects. Perhaps we will, so, but I look forward to today's meeting. We have an enormous task in front of us. I will make one more comment: just so people understand I'm the pessimist on the Commission, I think. I think Chairman Klein will join Chairman Diaz in putting me in that place, but I always think of myself as the realist.

We are currently under a continuing resolution that has us funded at the 2006 level, fully \$100 million or so less than what the House Appropriations Committee wanted to give us, and what the House wanted to give us and what the Senate Appropriations Committee has marked out. That doesn't have enormous effects at the moment but will have enormous effects if it continues into next year in terms of our ability to carry out the program we have underway.

But I remind folks as we go through the next several years, we try for stability at the NRC but we happen to be embedded in an unstable political environment at times. So, I can't predict that this will be the last time we have

a CR that will disrupt the staff's efforts. And I think people have to just plan for uncertainty. With that, the pessimist will shut up.

COMMISSIONER MERRIFIELD: Well, Mr. Chairman, Ed always knows when he makes a claim of being a pessimist, I always try to counter balance him on those things and this will be no exception to that regard.

I agree, this is an important meeting. You know, I was looking back a little bit in terms of where we have come and that is not entirely surprising, that's generally the way I approach things. And as one looks back on the plants that we've built previously, we as an agency licensed 125 nuclear power plants in the U.S. from the period, including our predecessor agency the AEC, from the period of 1960's through the 90's. Obviously, there were a lot of things which could have been done better. And I think we need to focus on those and part of that will be the focus of this meeting, how can we do a better job of reviewing those applications in a timely way, and effective way that will meet the expectations of Congress and the American people?

But I think we need to think beyond just what are the issues that we've had with the regulator. I think there is obviously when you look back at the complications that transpired with the earlier generation of plants having been built; there is plenty of blame to go around in terms of what got some of those reactors to where they got. Obviously, we built a whole lot but I think that the record of many looks back on some of those that either weren't built at all or some that more importantly, some that were partially completed that failed for a variety of reasons.

And so I think all around the table and all around the room, we need to

think about not just how do we change the regulatory process, but looking forward, if this industry truly wants to move forward and order those plants, if it truly wants to put the money down to build vessels and steam generators and components necessary to make those plants work, getting the pieces together, having the oversight of the construction of those facilities, having that done in a timely way but in an effective way that meets safety requirements will be vitally important.

As we reflect today, I hope we can think beyond just how does the NRC fix its regulatory process to make this run smoothly which we have to do as well, but how do we do that in a more holistic way so that we're all looking at all of the pieces to make sure that that works effectively and so we can avoid the Shoreham's, the Seabrook's, and the Zimmer's and any issues that we had in the past. Thank you Mr. Chairman.

COMMISSIONER JACZKO: I would just like to add a few words to some of the things that have been said. As Commissioner McGaffigan said, we have a lot of work to do. We have a variety of rulemakings. Several of them, I kind of count four general rulemakings. We have three security rulemakings and we have the Part 52 rulemaking, all of which I think are inter-related and have a lot of important elements to them.

So I think as we go forward, we really have to make sure we get all of that work done and we get it done in a way that ensures we are providing the best framework to deal with licensing in the new generation of nuclear power plants. I think the idea as Commissioner Merrifield touched on a little bit here is that I think design is an extremely important part and he talked a little bit

about the need to achieve standardization. I think design is really important where we continue today to struggle with the current fleet of reactors with issues like fire protection.

This is an issue that I think with new reactors should be much easier to deal with because we will be able to implement the concepts and the necessary requirements through good design. And I think that that's an element that we really have to focus on as we go forward. I think there are some areas in particular in security that I don't think we have done enough to get at the good design and I will probably talk about that a little bit later.

But I think the most important thing that I think we have to keep in mind, I think there are two important things we have to keep in mind as we do this, one is obviously the operating reactors and to make sure that we keep our focus on those facilities. I would perhaps say, that I don't think I have seen quite as large a large a crowd as this at any of our meetings dealing with the operating reactors and I think as the Chairman has said many times, if something happens to an operating reactor, clearly, any efforts to build new plants will quickly be put aside.

So I think it is important and incumbent on to us to make sure that we continue to focus on the existing fleet. The second I think most important element is that we make sure that we are not rushing, I think into this too quickly. The plants that we are potentially talking about licensing and building are plants that will have a 40 year life and potentially be licensed for another 20 years.

I think we need to make sure in particular, given the strong emphasis on

standardization, that we are looking at the right designs today and that we are doing everything we can to look forward to see what the needs and requirements will be in the future because these are plants that we expect if licensed, to be operating for some time and we expect a high degree of standardization. So any flaws, any problems in design are going to be designs that will potentially affect the large number of facilities. So with that, I think I look forward to hearing from everyone here and looking forward to asking a few questions and point to some issues.

CHAIRMAN KLEIN: Marv?

MR. FERTEL: Thank you Mr. Chairman. Thank you Commissioners. We're please to be here. I think just on Commissioner McGaffigan's comment on rulemakings, we were not planning on discussing the rulemakings today because we thought the November 9th Commission meeting was going to focus on Part 52 and the other rulemakings. So if there are questions, we will certainly try and answer them but we were looking to November 9th for that. We understood today was to provide a status update on where we are in our design centered working group activities and also to discuss some of the issues that are in play and our thoughts on those.

With me at the table is Bernie Beasley from Southern Nuclear. Bernie's going to talk about the status of the AP1000 and he's going to touch on our approach to standardization across the industry, not just for the AP1000.

Joe Sheppard will follow Bernie and he's going to talk about where we are on the ABWR and offer some insights into potential schedule savings and efficiencies that we are beginning to think might be possible.

Joe Turnage is going to give an update on where we stand on the UniStar EPR activities and touch on a couple of generic issues that are in play right now and finally Gene Grecheck from Dominion will talk about the ESPWR and discuss where we are on DG-1145, the SRP and how important they are to moving forward with both high quality applications and very effective reviews.

We would like to thank the Commission for the leadership and the commitment that you put into the new plant effort. We would like to thank the staff who has been very engaged with us and we expect with other stakeholders but certainly with the industry trying to resolve issues. And we would encourage a continued high degree and I think the term we talked about this morning was "high quality engagement" just like we want high quality applications and high quality reviews. We think those engagements are really critical to achieving both our submittals and your reviews and we are looking forward to continuing that.

Could you go to the next slide please? If you don't want to, you don't have to.

COMMISSIONER MERRIFIELD: Can we get to the next slide, please?

MR. FERTEL: It's Monday morning.

CHAIRMAN KLEIN: They just like having your face on the screen.

MR. FERTEL: Well, while we are waiting for it, let me just acknowledge that sitting in the audience behind us are executives representing all of the reactor suppliers and just about, I think just about every licensee that's looking at submitting a COL. So hopefully Commissioner Jaczko, we are not

taking our eyes off of the current operating plants, but the commitment to new plants is very serious on our part to try and make sure that we are engaged with the NRC effectively and that we're actually producing the kind of submittals that will allow for an effective review.

When you look at the time where we are right now, it's a very critical time because about a year from now, you are going to get the first wave of high quality submittals in COL space and we want to make sure that they are as good as they can be. We continue to work not only on the licensing but going to comments made by the Commissioners on other elements associated with new nuclear plants, including deployment and construction. We are looking at lessons learned, not only from the 103 reactors that we did build -- actually, we built more than that, 125 going to Commissioner Merrifield's statement, that we did build looking at lessons learned from the most recent construction activities but also looking at lessons learned and what we have been doing at outages and other things so we can be smarter going forward on that. We are also looking at looking issues which affect us like financing, hardware, supply and other infrastructure issues. And as many of you know, companies are already ordering some long lead components and getting in the cue for those issues.

Maybe most important now from a regulatory standpoint, we need to continue the intensive industry, NRC, and staff and interactions on DG-1145 until the document is issued in its final form. And we believe that making sure the document codifies what was discussed accurately and that the standard review plant is harmonized with that, is absolutely critical to the applications

we file and to the reviews that the NRC does. And to be honest, to stakeholder participation so they know what they are looking at from a performance standpoint and can comment accordingly. We see similar interactions coming in the months coming up on updates to Reg Guides and other topical reports and we are fully committed to those engagements to try to make them successful.

Okay, don't change, one of the things we have found as we have gone through the COL application activities is we are finding that somewhere between 65 to 75 percent of a COL application for a particular design will be standardized and that means in regulatory space, the word should be verbatim. We are also finding that you can get 10 to 20 percent more standardized depending upon the site and the particular design. So we are looking at a situation where we are hoping that on average, we are going to see 75 percent to 80 percent of a design actually standardized that comes in here. We believe that's going to be very efficient from our standpoint and we hope very efficient from the standpoint of the NRC review.

We believe that if we can adhere to that discipline which we are committed to do, and if the 1145 and Standard Review Plan can be as precise and accurate as they should be and harmonized, there shouldn't be more than one round of RAIs and there shouldn't be very many RAIs. And if that's the case, we think that the schedule and we're not rushing on this Commissioner Jaczko, we're just thinking it's an efficiency thing, the schedule could be shortened on the order of 12 to 15 months because you don't have iterative RAIs and we are committed to working with the staff to try and

achieve that as a goal.

As I mentioned also, we are not just focused on the licensing part. We are looking at the lessons learned from recent years and implementing major material upgrades at our existing plants. What have we learned about doing those things right. We are looking at what's going on in the construction overseas. And what we are finding isn't necessarily rocket science. We learned that planning and preparation and training are critical and we are committed to factoring these lessons learned into the construction and startup processes for the new plants. I should also comment that Commissioner Merrifield made a good point about the experience on both sides in the first round. This is a lot different when you look at the process. There are standardized designs, all the engineering is done up front, the regulatory process shouldn't be changing.

I mean, our first current fleet as many of you know, we were designing as we built, and the regulations were changing as we were designing. So we have a much more stable environment for going forward. We are looking at modular construction and we are looking at a much more disciplined review process in ITAAC space and also in your construction sign as you go process, inspection process. So we think that there is really opportunity to really do it much smarter, much more efficiently and much better than our first round, and we are committed to doing that. With that, I would like to now turn the microphone over to Barnie to start the discussion on the status of the AP1000.

MR. BEASLEY: Thank you Marv, and good morning, appreciate the

opportunity to be here. Just starting out to talk about the AP1000 design centered working group approach. Since the first of the year, we have had some good meetings with the NRC staff and we are now scheduled for periodic meetings and briefings with them. I think this is very positive because it has allowed us to further define the COL application requirements, address key technical issues and also, has helped us to frame and define these issues.

The whole point around this is how can we better standardize, how can we work with the staff to ensure that we are all understanding the challenges we face and we can get a lot of Q&A between each other. Obviously, focus areas for future meetings are very important, that these meetings are helping us to do that, define the focus areas, define the areas that we need to work together on to answer questions and deal with challenges that we may see ahead.

One of the things that resulted out of this interaction with the staff and is very positive, I think, is the staff said in the time period between now and when this first wave of applications will come, we have the opportunity to possibly review some things. So working with the AP1000 group, working with Westinghouse, we and Westinghouse is submitting now, technical reports to address some of the design cert follow-up action items. And as the slides as we have submitted to you, right now, we know that we plan -- Westinghouse plans to submit 71 of these technical reports and we're working with staff very closely. Three of those have already been reviewed. We've already submitted 30 some odd. We'll submit the full 71 and that number may

grow a little by next year. And the request for additional information that we have had, Westinghouse is committed to timely response and has done that.

So a lot of good interaction going on and I believe this time frame between now and when the first application will be submitted is going to allow us to iron out a lot of these issues. So we are looking forward to our continuing interaction with the staff.

I want to address the standardization and go to my next slide by addressing standardization from the standpoint industry. Having been involved in this since we began talking a year, year and a half, two years ago, maybe even longer, as we began to talk about where do we as an industry go and what is our commitment? And I can truly say that the industry executives have sat around the table numerous times and our commitment in working with the vendors also is that we want to be as standard as we can be.

Now, we recognize that we won't be a hundred percent because there are some site unique differences and such but we do know that taking advantage of the lessons we have learned from the past building, construction, and startup program, that there is so much to be done. And that's our commitment and so, working with the NRC and we all come to this, embracing the design centered working group philosophy and concept and the high levels of standardization we believe that can offer, and again, back to what I talked about earlier, working through these issues with the staff and having a lot of interaction and interface.

We also in looking at the licensing requirements for standardization,

we're also looking at how can we make sure that the designs are as standard as possible? And we're continuing to drill down, continuing to work with each other, continuing to work with the vendors to do just that. Refine and make the design as standard as we can make it, recognizing as I said earlier, there will be some unique differences because of site specifics. We are doing things and again, for instance through our committee, the New Plant Oversight Committee. This is a concept I think is working well for us now. But it is through that committee that we are dealing with challenges internal to the industry. And it's through that committee that we have decided to do things like this cross consortium common program development. We got a lot of people engaged in that and a lot of people working to work on these programs and again, make the cross consortium programs that we can make standard, we are working very diligently to do that, such areas as training or maybe security.

Now, we all realize, there are a lot of challenges left. We know internal to the industry we've got a lot of heavy lifts left to make. But we also know that this is a lot of challenges we're placing on the NRC. But back to Marv's points, we know we will continue to work together, we'll continue to face these challenges and we'll continue to realize that there needs to be a lot of interaction, a lot of interface because we do want to give you the best application, the highest quality, the most accurate -- I will never say perfect because we won't give you a perfect application -- but we strive to give you the best product we can give you and I think through all of this work that we're doing and the interaction we are having with the staff, we can certainly

achieve that.

So a lot going on in the area of standardization and we will keep working at it and this industry is very committed, very committed to staying on that course. So, thank you.

MR. SHEPPARD: Thank you Barnie. Again, I'm very glad to be here this morning as well and to represent the efforts of mainly, of the South Texas Project at Amarillo Power with respect to the advance boiling water reactor. I would like to divert just slightly, though and address Commissioner's comment about operating units and I just want -- Marv addressed it but for my peers who are out there every day dealings with these plants, I just want to reiterate our commitment to the operating units.

It is something that I discuss with my board and with my staff on an on going basis. And within our organization, we try to draw a very bright line between the continuing support of the operating units and the new plant activities because we all understand that the precursor for any of this activity we are talking about today is the continued high performance of those operating units. If we can go on to talk a little bit about the advance boiling water reactor design centered working group, I think you all have been briefed previously about our overall schedules and I guess I just want to assure you we are proceeding in accordance with those plans, including the plans for ordering a long lead on components and in our case, that will probably be sometime this spring.

Probably more pertinent for this discussion however, is that we have begun the design centered working group process and that is going very well.

We have very clear principles and expectations that have been laid out for the design centered working group. And we are working actively to fulfill those expectations and we are also working with the NRC staff. We had a number of meetings; we have a number more meetings scheduled.

Specifically, with regard to the design centered working groups, we're working diligently to look at the issues that group needs to deal with and to disposition them fairly quickly. In our case, a limited number of issues have been identified in the tier one category and what we call tier two star which are the ones that directly affect the design certification. And we expect to have all of those resolved by the end of this year. So, again, in the spirit of no surprises and quality engagement with the staff, we want to identify any of those things that make sense either from a safety standpoint or just a much better way to achieve our overall objectives. We want to identify to the staff those very, very early and there will be a very, very limited number of those.

What I would like to do now is to move back a little bit and talk a little more generically, about schedules. As both Bernie and Marv have indicated, we sincerely appreciate the efforts that have been ongoing with the staff, with respect to the design guide 1145 and the Standard Review Plans. And I think we understand the budgetary basis for the 42 month schedules that have been published.

But we also really believe that there's a lot of room for improvement there. And we think that is a mutual activity that we have to give you the quality application that is in accordance with the design certification and the design guide. But then, on the other side, we need to not re-review what's

been reviewed before. And I think that it is the term that Marv touched on, we need to have that quality engagement to ensure that is the case as we go forward.

We think especially the environmental review appears to be an area where some kind of process improvement needs to be looked at. I think from a common sense standpoint, many of these early applications are for sites that have existing reactors on them. We ought to be able to draw something from that and still meet all the requirements of NEPA, et cetera, as we go forward. We would invite an active engagement with the staff to try to figure out, are there better ways to move those environmental parts of the review forward.

We also think that we need to really build on the lessons learned from the license renewal process and also, the recent licensing of the LES facility. We think those are success stories and I think they are success stories for the Nuclear Regulatory Commission and they are success stories for the industry. We think there are plenty of things there that we can look at to help incorporate into the process as we go forward, such that, as Marv said, we have a limited number of requests for additional information and that those are not iterative, that we answer the question once and we move on. And again, we understand there is mutual responsibility there, that we have to give you the quality application and then the NRC staff has to be efficient and effective in their review.

I guess the final thing I just want to mention is that we are pleased with the work that is ongoing looking at the limited work authorization process. We

think that if the rulemaking goes the way we think it's going to go, that we will end up with a process that looks at the safety aspects and focuses on safety objectives associated with that process, and again, can help us be more efficient in our construction process as we go forward.

So I guess kind of in conclusion, we look forward to working with staff to improve the overall licensing process. We think that there can be improvements in the overall effectiveness of that review process and that effectiveness improvements will result in better time lines. And we will be glad to talk more about that later. I'm going to turn it over to Joe Turnage now from Constellation.

MR. TURNAGE: Thank you very much. Good morning, it's a pleasure for me to be here. I'm standing in for Mike Wallace today. As we speak, he is in Finland kicking the tires of the EPR being constructed along with members of our board. I tell people that there were two hugely significant events last year that have brought us all to the bar here. One of them was passage of Energy Policy Act of '05. But the second one happened here about a year ago on November 2nd when we first met with Dave Matthews and his folks and began to talk about the possibility of parallel processing, if you will, the DCD and the COLA review activities. That resulted in very positive and I love this phrase I been hearing a lot more lately about "high quality engagement." I think that's been our experience as we begin to look at the use of design centered working groups, as we begin to look at early review and issue resolution processes in that context.

And so where we are now is far down the path of what could be a very

efficient and robust licensing process associated with concurrent DCD and COLA review with the ability to rise early, and resolve issues. We have had about 35 meetings with staff. There are about a little more than 20 reports which are scheduled to be submitted. And all of that so far so good has worked very well I think for us. That said, we understand that re-work is a bad thing and that we have to be really sensitive to design changes that could modify COLA work currently being reviewed and vice versa. So, while this appears to be a very attractive and efficient process, it carries with it the caveat that we have to be diligent in making sure we proceed with a fully and jointly informed status as our DCD is finalized.

All of this is about our objective to provide the conditions necessary for the Commission to conduct an effective and efficient review of the COLA application.

The second slide, I was asked to talk about a couple of generic issues. One was a thank you which acknowledges and appreciates how the NRC has been expediting the schedule for the issuance of central guidance documents, both Reg Guides and the SRPs. I think again, this notion of high quality engagement has been experienced as we've had a robust dialogue with regard to these guidance documents. And I would be remiss if I didn't raise the usual with something you already know about, digital design issue.

We're going to need to order simulators in 2009. We will need ahead of that, specifications for those simulators and ahead of those specifications guidance about regulatory acceptability of design robustness, fault tolerance, cyber security and all those things. So it's not -- this should be something

we're engaged in today. This one area probably where we can utilize what other industries have done to narrow space with actual laboratory and expertise that they have there, but it just strikes me that we need to signal the importance of digital control system design and regulatory acceptability and standards because it is something that we need to have behind us sooner rather than later. Gene.

MR. GRECHECK: Good morning. To follow up with what you already heard from the other three groups, a lot of what you will hear about the ESBWR will coincide with some of the work that's already been described to the other groups. I'm here representing 3 parties really, Dominion and NuStarts's effort at Grand Gulf in conjunction with Entergy and then Entergy's work at River Bend.

Similar to the AP17000 group, the ESPWR parties were already working very closely together, even before the design centered working group terminology was developed. And so for well over a year now, the parties have been engaged with GE doing design reviews and planning what the CLO application would look like. You saw some of the numbers that Marv put up about the standard content of the COL.

I just want to tell you that beyond the standard content, we are writing the applications jointly in that the sections that will be the same that don't just incorporate the DCC are being written by one party and then being reviewed by the other. So it's not even a matter of separate groups writing sections of the FSAR so to speak, but it's actually one group writing it and everyone else concurring with it. So when you do get it, it will be identical. It will be word for

word, exactly the same. As you know, we have indicated a schedule for those submittals; Grand Gulf and North Anna are planning to come in simultaneously in November of next year with the River Bend application to follow about six months later. In conjunction with that COL preparation, General Electric is involved in the DCD review with the staff as we speak.

There are two revisions to the DCD that will be provided to the staff that will be referenced by the COL applications. And those two revisions should incorporate the answers to the majority of the RAIs that the staff has asked, and also some design changes that have come up during the review process either through the staff review or through the review with the potential COL applicants where we have identified improvements and enhancements that can be made to that design. Those will all be incorporated in the DCD revisions that will be coming in later this month, and then, early next year.

The commitment then will be that as the parallel DCD and COL reviews go on, we will be keeping those documents exactly coordinated so that any changes that occur on either side of that will be reflected on both sides. As Joe was indicating, the concurrent reviews provide opportunities and challenges to both the staff and to the industry. The opportunity is certainly that we can resolve those issues at one point. And our goal is to move as many of the open items as possible out of COL space into the DCD so that we don't have COL action items, that we don't have issues that are not resolved at the design certification level. To the extent that they can, they will be resolved there and then, will be referenced by the COL application.

As you heard from others, we really, again, want to thank the staff for

the extensive work that is going on and coming up with a common understanding in the DG-1145. There were 7 workshops held that the industry was heavily engaged with the staff and we believe good results came. But there is a certain amount of interaction that needs to continue. As Marv indicated at the beginning, part of our challenge, both from the NRC and from the industry is to make sure that we review issues one time, document those reviews and then, move on and not have to reinterpret what we've already come up with.

If you think about the time scale over which the licensing and construction will take place basically over the next 8 or 9 years, we would expect there to be a significant amount of staff turnover both at the NRC and at the industry level. And it's important for us to agree now as to what some of these resolutions are and not allow some of that to be open to interpretation as new people come in and are not familiar with some of the positions that were made earlier. So we are really reiterating our desire to work very closely with the staff to make sure that the understandings are well documented.

There are some issues that still remain that we are engaged with. For example, plant specific PRA issues are still an item that is under some discussion. The PRA process has gone through an extensive amount of discussion on the operating plants. We spent a long time working out exactly what the protocols were, what the assumptions are. And it is not the time as we get into new plants to start rethinking now, the strategy under which we do PRA. And there are some indications that there are perhaps some

movements in that direction. Seismic is another issue. Certainly, the early site permit process identified some significant issues in the seismic area that needed to be dealt with. We think we have dealt with them at the ESP stage. Now, it's important now to move that into the detailed design. And there are still issues in terms of high frequency effects and how we amalgamate the site information into a new guidance for the industry that still needs to be clarified at the overall industry level.

So, finally, you have heard this before but I don't think it can be said too many times, the commitment of the industry to provide quality applications which is we heard from all of you at one time or another is absolutely there. We are committed to that. Quality to us means that the applications that you get will address the Standard Review Plans and DG-1145 and the other guidance that the staff has provided. We are committed to do that to the extent that we can, to the extent that we understand what those mean. So the next year before the applications come in, is a critical time period that both the staff and the industry understands exactly what the guidance requires.

MR. FERTEL: Just to wrap it up very quickly, I think what you've heard is a strong commitment to continue interacting with the staff and the Commission. I compliment the staff again. I think that they have been very engaged. I think the challenge is they are trying to meet a schedule just like we are trying to meet a schedule. And we may think we have understandings and they may think they don't have time to change certain words in the document.

We would suggest we need the words changed so that they have long term sustainability even after staff leave. So we think that is a challenge trying to get the stuff done within the schedule. We are committed for November 9th to discuss our policy views on Part 52 as well as the other 3 security rulemaking activities and any other ideas we have on making the process maybe more efficient that doesn't require legislation.

Right now, as you can tell, we are focused on producing high quality applications. But we're not doing that and ignoring the fact that we got to be planning for both the construction activities and we got to be planning for eventual operation from a planning standpoint. And we are looking at lessons learned from both past and recent construction to make sure that gets factored in.

We obviously believe from what you have heard today that there's the ability to save 12 to 15 months on the schedule, if we can do our part right in submitting high quality applications that addresses what's in DG-1145 and the Standard Review Plan. We are committed to try to do that. We think that would help both sides in the review process and we also think it actually helps for anybody that wants to intervene and take a look at what we are doing. Multiple RAIs, I think confuse the situation.

With that, we think that the second wave could actually be done probably even more efficiently, once we get smarter on both sides about how to go through this process and do it without undermining any of the efficiency or effectiveness of the licensing process or the oversight process. We again, thank you for the briefing today and we thank you for the leadership the

Commission and the staff is exhibiting.

CHAIRMAN KLEIN: Thanks Marv, and to the other panelists for your opening comments and views. Obviously, now comes the fun part for the Commissioners, we get to ask some questions. We have a very complicated process that we go through on the order in which we ask questions and Annette is our timekeeper to make sure that we somewhat stay on schedule. But we will start this morning with Commissioner Merrifield.

COMMISSIONER MERRIFIELD: Thank you Mr. Chairman. Going to and this picks up from some of the comments both Gene and Marv made -- in terms of trying to focus on the schedule and meet that, clearly, as you look through the detail elements of that, there are areas where our staff has a piece of information, we have the RAIs, we're trying to work our way through it. Some of it is also periods of time where we are waiting for the answers. And so that -- although it is in our schedule, it is really an obligation on your part and the vendors you have working for you.

One of the concerns here is, are we getting information back in a timely way? The RAIs are in part driven by the fact we don't understand what you have put in your high quality application. And so, in your process, what do you doing to try to improve the timeliness and quality of the responses that you and your vendors are coming up with in order to help meet that part of the scheduling issue?

MR. GRECHECK: Commissioner, I think the most important piece of that is to make sure that we understand the question before we start trying to answer it. One of the most inefficient ways of handling that would be to

simply handle this completely in the written format where a question gets drafted, it is sent to us. We forward it on to the vendor. The vendor tries to answer it and then we send it back and you say, no, that's not what we were really trying to ask.

So really, I think what we have certainly done on our ESP application, and I know General Electric is working very hard with the staff on the DCD, is to make sure that as a question is developed, there is an opportunity to discuss it either in a meeting or in a phone call, make sure that the question is properly understood. And in many cases, sometimes the information is available but just not formatted in a way that the staff could find it and in other places, it was missing as you said.

But if we understand what the question means, then, long before the written question is issued, we can already be working on it and make sure that it addresses it. Our goal certainly is number one, to do it timely within the 30 day time frame that is typically used for planning, but obviously, as someone said before, rework is never the goal.

So you answer it once, we should do our best effort to get it answered and we would certainly expect that our answers meet the staff's requirements and we can move on to another issue.

COMMISSIONER MERRIFIELD: Do you want to add anything to that?

MR. FERTEL: I think process improvement requires communication. I think that's where Gene is going to. Where we saw the most success even on the current operating fleet and finishing the OL stage was when the licensees had people basically in Bethesda at the time getting together with

NRC staff to sit down and say, what is it that you're trying to do and then to be honest, picking the phone up and calling back to their home office and saying, this is what they want, get it to them rather than waiting for the paper to come. I think that ought to be facilitated with standardized designs because we ought to be able to do this smarter this time around. But it does require people talking to people rather than paper passing in the mail.

COMMISSIONER MERRIFIELD: Getting to the issue, and Marv this goes to your last slide where you got a belief that the COL committee reviewed and approved in 27 months. Have you all come up with what you believe is sort of a detailed explanation of those savings you think are available in the process?

MR. FERTEL: We're working on that right now, Commissioner. That was basically a reaction to statements in a public meeting that was held with the NRC staff -- I guess now, it's been two or three weeks ago where there was a discussion about a 15 month time frame for RAI iterations. And we sat back down and said, wait a minute, we can have a dramatic impact on that if we are disciplined on our side and if we don't create reasons for RAIs, we ought to be able to cut that period down dramatically and that's the initial thinking and that's what we are looking at doing, how to do it.

The model in my mind is almost like a change control board that you have the plants right now where you don't let things just happen. We can do that on our side with AP1000.

I think on the NRC staff side, you may want to think about a process that is a little different than you've done in the past. If I'm going to generate a RAI,

maybe what I ought to do is have a justification paragraph above it which says why this is necessary given the licensee said they satisfied DG-1145. And the SRP ought to be identical. It doesn't not get out of the shop because people don't generate RAIs for the sake of it. They believe they are right. But it may be that they were not here when 1145 was written and they got a slightly different tweak on it.

COMMISSIONER MERRIFIELD: We have a knowledge transfer issue in that we got a lot of new folks coming on board and certainly, we don't want to go through the effort of having to re-learn issues we already know. I certainly appreciate that issue. I would be interested in getting when you have a little more detail in terms of areas where you think we can make some savings, I'd like to take a look at. The Chairman wants me to follow through on some of things. And I do believe, from what I know now, we can make savings. But the more good ideas, the better.

Joe, on the issue, you made some comments about digital I&C and I appreciate the timing issue associated with the simulators. What kind of thinking do you all have right now in terms of ways that could facilitate the staff review and resolution of some of these issues? Do you have some ideas for us to consider?

MR. TURNAGE: Not specific that I would go into this morning but in general, I think the industry is beginning to focus, we are pulled together through EPRI on this particular issue. NEI's very much involved, kind of acting as the coordinator of these activities. What was I was really suggesting though -- maybe what has to happen, some mechanism needs to

be put in place where we can begin to get clarity over the kinds of guidance which should be being formulated today in order for us to be able to move from regulatory guidance to design specification to ordering simulators in this kind of time frame. So what I don't see and needs to happen I think is line of sight about getting clarity about the criteria.

COMMISSIONER MERRIFIELD: Marv, real quickly, on your first slide, you had a breakdown of the limited number of site specific differences where you had 80 percent you think is going to be resolvable. Can you briefly explain what some of those differences are in those?

MR. FERTEL: Those are actually a range of numbers coming from the three, four different designs that we are looking at, what each one thought. Rather than taking an average across the four, what we did was put the ranges in and that's why you're seeing the ranges there. In fact, some designs actually go toward the higher end of standardization, versus some that are not necessarily -- they are lower in the standardization part on the site specific issues.

COMMISSIONER MERRIFIELD: Obviously, what came to mind was ultimate heat sink, seismic EP security. Are there any other big ones that you're seeing in that review?

MR. FERTEL: Off-site power. That's probably it.

MR. TURNAGE: And EP and security are being standardized to an exceptional state across all designs. That's not even being done at a design working group level. That's being done across the entire industry. So even there, there will be some implementation details that may be different at each

site. But the program will be the same or very similar to the same across all the plants.

COMMISSIONER MERRIFIELD: That's positive to hear.

CHAIRMAN KLEIN: Commission Jaczko.

COMMISSIONER JACZKO: One of the things I talked about earlier was the issue of design, the importance of getting design right. One area that I don't think we've done enough and I think is an area that we need to address is the September 11th aircraft attack. I think we're at a time right now where I think we have an opportunity to really take a good look at things from a design perspective. We have a series of rulemakings that are going on dealing with security, dealing with design basis threat, dealing with part 52, and I think all of these things should come together to give us good information about the ability of current fleet of reactors to withstand a 9-11 type aircraft situation.

I think what we have done with the current fleet is we have really taken a look, we've done a lot of studies, we've done a lot of analysis and we have come up with a series of mitigating strategies that will help to ensure that there is very low probability of damage to the fuel and any kind of off-site release that would threaten public health and safety.

But I think with a new set of reactors, that is literally in the design stage right now, we can do better. And we can eliminate a lot of the mitigating strategies through good design. So I guess a question I would have, perhaps for each of you, is do you have any plans right now to do these vulnerability assessments for -- talk about a large commercial aircraft? We don't have to

get into any specifics, if you do, but, simply be interested in a yes or no answer from each of you.

MR. FERTEL: Why don't I start. I think that right now, all of the designs the suppliers have been briefed by the NRC staff on the results of the Sandia Study. They were all privy to all the EPRI study work that the industry did.

We recognized that what we're talking about from those studies is beyond design basis threat. Doesn't mean that there aren't things you couldn't do in design and basically the designers are looking at what makes sense and it is a work in progress. But the insights that they have gotten are certainly helping and from comments that Luis made to me in the last week, he's at least been briefed on some of this and was pleased with kind of the reaction he has seen from some of the design people.

Obviously, Commissioner, at the end of the day, these plants will be well prepared to deal with the DBT and we are looking at that too in design space, other things we can do smarter at the plant that that will help us in defending against the design basis threat. So I think we're trying to do this smarter on the front end than when you got a plant built and I think that the insights that NRC has provided and the industry has provided and all the B.5.b stuff is provided are actually being considered as people are going down that path.

MR. BEASLEY: And just to add to that it's not just the vendors, but obviously we as an industry have people, experts working on committees and they are looking at the new plant designs, so there are a lot of things going on, and continue to look at it. And we'll keep working at it. But, still a few issues in play right now.

MR. SHEPPARD: I think both Bernie and Marv's point is we're well aware of the insights from what we did with looking at B.5.b. I think we all have groups that are going back and looking at the new designs and saying, where can we enhance? Where can we take those insights and make the improvements and put that in up front. I know in our particular design, we are doing that and I've been told that's what is being done across the board.

MR. GRECHECK: The same people on my staff who were responsible for coming up with the B.5.b mitigating actions and the people that are responsible today for operational security at the operating reactors are heavily involved in the design process. So it is to their advantage also because they are the ones that will have to implement these things eventually. They are making every effort to try to incorporate into the design all the improvements and insights that we have learned from them over the last several years.

COMMISSIONER JACZKO: As I said, I think we do have a good opportunity here. We are very much in the design stage and we have an AP1000 design that's been certified but there are certainly elements of that design that need to be completed. And I think we really do need to make sure as we go forward, we're not facing in several years with dealing with a situation in which we have to comment on current designs or current reactors that are being built and whether or not they've been designed to withstand a 9-11 type aircraft.

I think the answer to that question should be yes, they have been designed to do that. I think the first step clearly is getting good security assessments done so that we know what kind of design changes if any might

be necessary. And I think this is really an area that we that need to focus on and we have right now as I said, a series of rulemakings that I think touch on the edges of this but I don't think directly address it enough. So I think as the Commission considers these rulemakings in their final rule form, I think it is certainly something we that need to take a look at. Thank you.

CHAIRMAN KLEIN: Just a quick question: I know engineers always like to tweak things and make them slightly better. What kind of processes do you have in place Marv to sort of encourage standardization?

MR. FERTEL: Let me let maybe Gene and Barnie take it because what they are looking at is doing it almost daily within the design centered working groups.

MR. GRECHECK: Well, as I said before, the design reviews are being done jointly by the entire design control working group. Within Dominion, we have established a process that says no changes are possible without my personal approval. So that means that if one of our engineers want to tweak something, that not only does he have to go up through the thing but eventually has to come to me and explain why the standardized design is not going be acceptable.

I can say that as of now, that has never come to me. So, therefore, the understanding at the engineering level is that we not going to change the standardized design.

MR. BEASLEY: And within the AP1000 group, particularly within NuStart, we have a very structured process and some subcommittees or working groups that have responsibility for this. The parties who are involved

obviously are looking at these things, having input with Westinghouse but a very controlled and regimented process to your point to keep just everybody from wanting to put their own stamp on certain things. I think it is a pretty good process that's working and obviously if there is some point of contention, we have a way to work through those.

CHAIRMAN KLEIN: Well, a couple of comments. You made a comment about environmental reviews could be enhanced. And I guess Bernie, while applications may not be perfect, we expect them to near perfect. Vogtle has one coming through on an early site permit where you have two reactors already there, you are looking at two more. We've now looked at three early site permits that have gone through the process. What kind of time do you think would be reasonable to go through an early site permit on a case like Vogtle where you have two plants already there. How long do you think it should take to go through an ESP?

MR. BEASLEY: Well, gee, you put me on the spot there. Well, back to what Marv said earlier, considering that we have a site with two operating reactors considering a lot of the -- basically the groundwork has been done for many years and the ESP has simply come in and refined or updated a lot.

I think we ought to be able to -- we think that the review could be 12 months, 15 months, easily if we take credit for what's been there for many years and if we just work through that process. So certainly, shorter than what we've seen and of course, I'm quoting months without the hearing process, not considering the hearing process, but I think in that neighborhood.

COMMISSIONER KLEIN: Thanks, Commissioner McGaffigan?

COMMISSIONER McGAFFIGAN: Thank you Mr. Chairman. I'm going to start where the Chairman left off. In license renewal which I think is a wildly successful program, the environmental part of the process has typically been the long pole in the tent. The staff completes its work, it has to go to the ACRS and get them bought in and that takes a couple of months. But typically in license renewal, the long pole in the tent is the EIS. And we've been fairly successful, 22 or so months without a hearing, longer with a hearing. So I suspect that the license renewal environmental process is less complex than the ESP process. You know various people are using new seismic methodologies and the staff I think hopefully has learned from the first few and if people standardize on the new seismic methodology without basing it on some new Stanford graduate student's latest PhD thesis, then we presumably can do well there.

But I do commend Southern for coming in with an ESP early. I think that is a good thing. My understanding is there was an issue that came up with regard to EALs for the AP1000 that you are going to have to supplement your application a little bit on, is that correct in order to get the EP review that you wanted done?

MR. BEASLEY: I think that's correct, yes.

COMMISSIONER McGAFFIGAN: I think a reasonable goal for getting ESPs done is something in the order of 18 months, plus the hearing. And I do believe that with regard to Commissioner's Merrifield point, when I talked to Jim Curtis about some of his aggressive schedules for completing the whole process, 27 month, 30 month including the hearing, he doesn't have a

mandatory hearing. He does assume a Congressional change to eliminate the mandatory hearing on the basis that it is an entire different world today from 1957 when the mandatory hearing rule was put in place. But if you don't get rid of the mandatory hearing, you have to add x number of months, 4 to 6 months to the end of the schedule probably.

So we're all trying to figure out what the best thing to do is. We've got to figure out where the areas of greatest improvement are and I don't think you should hold this to a higher standard in new reactors compared to the standard that we achieve in license renewal which everybody says is a good process.

I would also commend Joe and the EPR folks and I hope everybody is planning to do it because you're saying you're standardizing in security and EP. But as I understand from Mr. Curtis's presentation to the staff in an open meeting, you're planning to submit your environmental report six months before the rest of the application, with the hope that the staff will start working on it, doing a scoping meeting, doing a draft EIS and having that ready to integrate with the rest of things. And you're also submitting a topical report, again, ahead of the rest of the application on security. And I think, that again, it's not rocket science to figure out that security, EP, environmental issues are likely to be the long poles in the tent in this enterprise. The part we are likely to do best provided you have all that discipline and the staff has all the discipline they claim they are going to have is the SER.

The SER, design centered SERs, keeping the DCD and the design centered review for the SER purposes straight is something that we have

entire control over and shame on us if we don't do it pretty well. But the rest of the stuff, we don't necessarily, have perfect control over.

In South Texas, are you planning to do 50.69 as part of your application?

MR. SHEPPARD: No.

COMMISSIONER McGAFFIGAN: Good answer.

MR. SHEPPARD: It is not part of the design certification.

COMMISSIONER McGAFFIGAN: It is allowed, but you would have to do a lot of extra work and the staff would have to do a lot of extra work. So that's something you will do once the plants are operating.

MR. SHEPPARD: Absolutely.

COMMISSIONER McGAFFIGAN: Good answer. I had seen press reports to the opposite and I just wanted to clarify that.

MR. SHEPPARD: We have had discussions with those people.

COMMISSIONER McGAFFIGAN: Why don't I leave it at that.

CHAIRMAN KLEIN: Any more questions?

COMMISSIONER MERRIFIELD: I don't have another question, Mr. Chairman. I know we've got two panels. I did want for the sake of the record and we do these things around here -- I appreciate Commissioner Jaczko's question that you all tried to answer regarding the design of these new units and being able to survive a crash like 9-11.

I'm remembering back -- age does that to you -- some statement, Dick Meserve, our previous Chairman made very eloquently, I think, at the time when we received some of those questions from folks up in Congress and others.

Dick answer, and I'll paraphrase it, is that in our country, we do not require office buildings or dams or chemical facilities or shopping malls to survive 9-11, and why should we pick solely on nuclear power plants to do so? I happen to believe that Dick was right. And at the time, so did the rest of the Commission and you can correct me if my recollection is wrong. But I think we were pretty much, all five of us at the time, in line with that. We live in a society where 44,000 people die each year in car crashes. We don't require auto manufacturers to come up with cars that would sustain a full high speed crash.

I think we've made tremendous progress as a country in making sure that the events of 9-11 are not repeated, whether it's information from our intelligence agencies that we can't talk about it, or the activities, some of which we all know about at the airport, some of which folks aren't fully aware. I think we've have done a lot to anticipate and to prevent a repeat irrespective of the design in the plants.

You all I think are quite well engaged in efforts with the vendors to make sure that to the extent that improvements can be made, that they are. But I have to say for the purposes of the record, I politely disagree with my colleague regarding putting that as a regulatory requirement. Thank you Mr. Chairman.

COMMISSIONER JACZKO. If I could ask a question, and certainly, I think just to touch briefly on the issue of the aircraft of the aircraft: I think what we are really talking about here, to keep in mind as we are talking about new designs. And I think that there is a lot that can be done, may not be

expensive.

I don't know the answers at this point but I think we have a responsibility to ask the questions and find the answers if necessary. One issue I did want to touch on separate from that -- I'm not sure who brought up the issue of long lead time components, but one of the things that I think is an important issue for the staff and for the agency as we move forward is our ability to inspect. In particular, given a lot of the components are going to be manufactured overseas and I think it is important that the staff have a good understanding of when those long lead time components may be built. I think there were some public statements regarding the EPR that some components have already been manufactured. I think both from a public health and safety standpoint and really from an efficiency standpoint, it would be important for us to have a good indication of when those components are going to be built so we can have folks on-site doing the inspections. If we not able to do that, we are going to be forced to do that through more of a QA type review which means going through a lot of documentation and more than likely would take more time than it would if we had knowledge of those things being built and we are able to send people and plan for being able to get people to the places they need to be. So maybe you can comment a little bit on that, if there are any plans to provide those kinds of schedules and that kind of information to the staff early enough to begin to facilitate that work.

MR. GRECHECK: Yes, Commissioner, it was about a year ago or so ago at one of the Regulatory Information Conferences that the staff started talking about an integrated schedule that would do exactly what you're

describing, the idea that we would provide the staff with important milestones in our schedule which would fit in with important milestones on the staff side and that way we would be able to mutually allocate those resources. And that is what we expect will happen. Certainly, as the design centered working groups meet with the staff, I think all of the design centered working groups are talking about meetings every six weeks. So as part of those ongoing meetings, we can certainly be identifying as some of these very, very early activities start taking place. Some of these very early activities in terms of ordering probably do not require on-site inspections but as we move down that road, we can certainly make that available.

At the time of the COL application, the first wave will only be a year away. Certainly, a very detailed schedule can be provided as to what is expected as part of that ongoing process.

We are committed to work with the staff to be able to integrate these schedules to make sure we are working from the same ones and to try to optimize that inspection capability.

COMMISSIONER JACZKO: Thank you.

MR. BEASLEY: Mr. Chairman, could I follow up on Commissioner Merrifield's comment? From an industry point of view, I want to make sure that it is understood that we agree with you. We agree that the aircraft issue should not be a regulatory issue. As I said earlier, we in the industry are working on our designs and looking at our security requirements but I want to make it clear where we stand on that issue.

CHAIRMAN KLEIN: Commissioner McGaffigan?

COMMISSIONER McGAFFIGAN: Mr. Chairman, I do want to associate myself with Commissioner Merrifield's comment. I'd put it in a slightly way. There is no general design criterion nor is there any notion in my mind or I hope the majority of the Commission of imposing a general design criterion about diving commercial airliners into nuclear power plants. I believe that we have made enormous progress with the existing fleet. We have shared those insights with you which were gotten at the cost of tens of millions of dollars of the taxpayer's money. And it was in this case, I think mostly the taxpayer's money rather than your money because we were able to get most of it off the fee base. The initial appropriation was off the fee base which it should be.

We have a system in place today that we're very proud of. As the Chairman described in his letter to Secretary Chertoff, the extensive damage mitigation guidelines you all are putting into place as a result of B.5.b make enormous sense. But that is outside regulatory space. And that's where I believe it should remain. The 73.62 rulemaking that you all are going to apparently comment on, on November 9th, it envisions target set analysis and envisions robust security, but it does not envision a general design criterion for diving commercial airliners into nuclear power plants.

I believe there is tremendous resistance to such diving commercial airliners at nuclear power plants. We know now more than anybody on the face of the earth about what vulnerabilities may or may not exist in the existing fleet. And we are capable of coping with them. I hope that to the extent that it makes sense, you adjust to that, but to put that into regulatory space is a prescription for asking each of you to reproduce Sandia's analysis

for your particular plant, and then, potentially, if our goal is no longer reasonable assurance of adequate protection but absolute assurance of perfect protection to do some of the things that people talk about outside the agency, build them underground with berms around them or something which is not what we are going to require.

We have to have stability if there is going to be a new generation of nuclear power plants. We have certified designs. Changes should be made with great reluctance to a certified design and only where absolutely necessary. So there is no general design criterion for diving commercial airliners into nuclear power plants.

CHAIRMAN KLEIN: Since we are on the subject, I must say in my last five years spending time in that five sided building, while I lived and breathed issues associated with nuclear, chemical and biological defense programs, I have been impressed both with the industry and the Nuclear Regulatory Commission on the actions they have taken to ensure reasonable security and protect the public.

There are some aspects that nuclear plants are so robust that helps. I can assure you there are other targets out there that are a lot more vulnerable than the commercial industry, commercial nuclear power. So I think both the NRC and the industry have really done well in that regard. And we need to just be aware of risk balance as we move forward and don't put the public at undue costs for unlikely events. We can obviously continue this discussion for hours. I would like to thank the panel for coming today. Certainly, the word "standardization" is good and we need to keep moving on that regard.

The design centered approach is good and we need to keep moving on that regard. The other aspect, you all have indicated on is don't gunny sack issues. I always tell people, the three important now tasks that we need to do and that is communicate, communicate and communicate. So as issues come up, we need to hear what the concerns are and we may push back occasionally, but we are a regulator. And I think its important for the public to have confidence in our system. But it's also important that we articulate our requirements and then respond in a timely manner. Thank you very much. We're going to shift now to the second panel where we will hear from North Carolina, Florida, and the Union of Concerned Scientists. Thanks.

COMMISSIONER MERRIFIELD: Mr. Chairman, while they are doing that, for the purposes of the record and for those of our audience who aren't as familiar with terms emanating from that five sided building, you want to give a little bit idea of what gunny sacking means because that is not a nuclear term.

CHAIRMAN KLEIN: Well, gunny sack is where you save all of the little issues rather than addressing them in a timely fashion and so what happens is rather then hitting them in a timely fashion, you build them all up and then they all explode. We need to do it in a timely fashion.

COMMISSIONER MERRIFIELD: Thank you Mr. Chairman.

CHAIRMAN KLEIN: That is a very technical term. Well, I would like to thank our next group for coming. We'll get to hear now from North Carolina, Florida and Union of Concerned Scientists. And I believe that for some reason, Mr. Ervin drew the short straw and gets to go first.

MR. ERVIN: Well, you can look at it one of two ways, Mr. Chairman. You can also look at it as I get through first.

At any rate, I do want to express my gratitude for the opportunity to be here with you this morning. I'm returning the favor that I think Commissioner Merrifield did for us last week in speaking at the World Energy Forum which we appreciated him coming to join us. I'm going to talk today mostly in pretty generic terms about State economic regulatory processes in the hopes that it will do you some good to at least be aware of what the state of the landscape is. I'm a history major, a lawyer and a State Commissioner which makes me a total generalist and I have a lot of surface knowledge about a lot of stuff, knowledge in depth about not much of anything. So, bear with me.

COMMISSIONER MERRIFIELD: You and I share the same breeding in that regard, so not to worry.

MR. ERVIN: That makes me feel some better at any rate. I really want to talk about two things with you. I tried to -- this is my initial foray into PowerPoint so I already caught my one typo. So I have demonstrated a lack of command over the English Language as well as surface knowledge. But what I want to talk about first of all, is what authority State commissions and similar agencies have to review proposals for the construction of new nuclear facilities and then secondly, the rules as they exist today governing cost recovery associated with such facilities.

On my third slide -- and I have a lot of stuff that I'm going to go through pretty quickly -- I talk about generically, what State commissions have to do in order to decide cases. Mr. Chairman, I believe you've got some familiarity

with this in your family as well, so she can talk to you about this in detail. But we essentially are an adjudicatory body and so we can't come in and be promotional or non-promotional of new plants. Instead, we have certain obligations to conduct proceedings that may become contested and subject to appellate review in order deal with the types of issues we have to deal with.

On slide four, I mention the thing that everybody knows which is that the States are divided at this point in terms of whether they retain traditional regulation as North Carolina does or whether, they had moved into attempts to restructure as Texas and a number of other States have done.

The answers to some of the questions that I decide to talk about vary with what regulatory structure is in place in a particular State. Under traditional regulation, you have an obligation to serve, you have monopoly service territories and you have a regulatory Commission as is indicated on slide 5. It has pervasive authority over rates and quality of service.

I set out on Slide Number 6, the traditional rate regulation formula. It is a cost plus arrangement in which you determine the so-called rate base which is the original cost of the utilities assets. You determine a return to be applied to that rate base. You add the resulting capital cost recovery figure to the rate or you multiply the capital cost recovery factor times the rate base in order to get a total capital cost recovery. You add that to the operating expenses and that's what the utility gets.

Most traditionally regulated States, but not all, also have a fuel adjustments mechanism and nuclear fuel costs can go through that adjustment as well. In restructured States, it carries a little more. In theory, at

least in a restructured State, the prices are set on a market basis. Many industrial customers and a fair number of commercial customers in such States have shop for power. But most residential customers in such States remain on so-called default service and there are different ways that the costs are recovered in the connection with default service contracts.

On number 8, I talk a little bit about that. In number 9, I what to talk a bit about certification and I'm sorry to fly but I don't want to take up everybody else's time. In a traditional regulated State like North Carolina, after you all get through with your process here and an applicant decides that it wishes to move forward with its project, they must come before a State Commission like mine and apply for authority to actually construct and operate the plant under State law.

The questions that are addressed in such proceedings tend to be cost related rather than safety related. And so in a standard certification proceeding before the North Carolina Utilities Commission with respect to any kind of plant, not just a nuclear plant but any kind of plant, we are generally going to ask two questions: One, do you need this to serve load? And secondly, is this the least cost alternative that's available to you for meeting your anticipated future load?

Under the decisional law in North Carolina, we are not absolutely barred from considering environmental issues with the thrust of that decision as I read it, tends to suggest that what we ought to do is focus on the cost and need questions and leave the environmental questions for folks who are assigned that responsibility under State law.

If you look at the restructured states, and I didn't do a comprehensive survey but I did check with some State Commission staff members and some States that I know there is some interest in new nuclear facilities. The certification requirements vary. Illinois has a statute, for example, that requires a public utility -- this is shown on slide 10 -- requires a public utility to come forward and attempt to get a certificate if they wish to build a new nuclear plant. I am advised however that since most generators do not constitute public utilities in Illinois, they are instead independent generators, that certification requirement does not apply. Therefore, it's unlikely that the State Commission would be required to certify an Illinois plant unless for some reason it was built by a public utility which is going to be in their environment mostly a distribution utility.

There is interestingly enough a statute that would require a certification as to the ability to dispose of the waste from the environmental regulator which for some reason appears in the public utility statute but that does not follow up with the State Commission.

Virginia seems to have retained a certification requirement. But if you are you talking about a plant in Virginia that would not be rate based, the requirements for getting a State certification from the Commission seem to be less so that you don't have to go through the kind of analysis necessarily that we would in North Carolina. There are some questions that would need to be answered, but they are not as strict. If your staff is interested in looking at any of these statutes, I have got the sites for them, if they would like them.

In a traditionally regulated State, obviously for cost recovery purposes,

you simply take capital costs, put them in rate base and depreciate them and you take the operating expenses as is shown on Slide 11 and use that to apply or carry out the traditional rate making formula. In a restructured environment and that's discussed on Slide 12, the generators that have actually entered into contracts with customers who have shopped would recover the cost associated with those facilities under their contracts.

There are a range of mechanisms for default services. Michigan seems, in its default service arrangements, to essentially traditionally regulate such service. Pennsylvania would have the distribution utilities who are required to provide default services issue an RFP. In Maryland, New Jersey and some other States, and this seems to be the trend in the restructured States, have gone to a auction approach. In all of those approaches presumably, the prices that were bid into the auctions were bid in response to the RFPs would include what the generator thought was an adequate cost to recover the plant.

Many parts of the country, obviously, are covered by regional transmission organizations. Those organizations serve both the traditional regulated States and restructured States. This is shown on Slide 13. To the extent that a generator wishes to bid into the generation markets operated by a regional transmission organization, they bid in whatever price they choose to bid. The standard pricing arrangement in those organizations is that the highest bid that's accepted becomes the price that everybody receives.

As a practical matter, in those markets right now, and they are operated by entities like PJM in the Midwest ISO, think ERCOT is going

toward this in Texas, California seems to be moving toward it in the California ISO MRTU proceeding. The price tends to be the cost of marginal generation that tends to be gas in the current environment and therefore, the nuclear generator is paid a price based on the gas costs and then they are going to get some premium that way.

So that is another way that cost recovery can occur. Lastly, there is some interest in different States and starting on Slide 14, in having other costs recovery mechanisms. At the time of the last nuclear bill cycle, many States adopted statutes that allowed to a greater or lesser extent, the inclusion of construction work in progress costs and rate base. Those statutes are still out there and provide some mechanism perhaps for the recovery of nuclear plant costs.

There are some more recent statutes and I start discussing those on slide 15 that deal with cost recovery mechanisms. The Iowa statute and I don't know of any proposals to build a new plant in Iowa but there is a lot of interest in the industry generally in this statute.

The Iowa statute provides that the Iowa Utilities Board develops the cost recovery methodology for any new generating plant more than 300 megawatts before the plant is certified, so that going in, in theory, everybody knows how the costs are going to be recouped. The idea behind that proposal is that you get greater certainty. It has been used with a coal plant. I don't know of any instance in which anybody has talked about using that approach in Iowa with a nuclear facility. Florida has a different approach shown on Slide 16. It's fairly complex and in the interest of time, I will rely on

the slide but there two statutes down there. The first requires the Florida Commission to approve an alternative cost recovery mechanism for a new nuclear facility.

So unlike Iowa, this is a nuclear specific statute. And then, there are certain rate making provisions that would apply for a new nuclear facility which are that it is exempt from competitive bidding rules. If you have a certification, that then eliminates any risk that you may have been found acting imprudently by starting construction. And there is also a possibility that you can have a so-called single issue rate case associated with a new plant.

Georgia, shown own slide 17, has gone to a cost deferral approach and I think that's fairly clearly set out there. And lastly, Duke in North Carolina is shown on Slide 18 and I can't really comment on this because its pending before us, has asked that we do certain things that, in their view, provide greater assurance of cost recovery. So that is a lot of material in a relatively short period of time and I'll be happy to answer any questions now or if your staff has them later they know where to find me. Thank you.

CHAIRMAN KLEIN: Thank you, Jimmy. Michael?

MR. SOLE: Mr. Chairman, Commissioners, I appreciate the opportunity today to speak before you on new reactor issues. Florida currently has five reactors in the State located in 3 locations, Miami Dade, St. Lucie on the east coast and Crystal River on our west coast, currently provide 3900 megawatts of power which is, roughly about 12 percent of our generating capacity.

Florida is keenly interested in the Commission's efforts in addressing

new reactor issues since we expect to see at least two applications for combined operating licenses in the next two years. Before I jump into specific environmental issues, I need to kind of tee up some issues that have brought Florida where we are today, some recent legislation, Florida is a growth state.

In the last five years alone, our population has grown by as much as 11 percent. To address the growth over the last several decades, obviously, the energy industry has also had to meet those demands, and has met those demands largely through the application and installation of fossil fuel power plants. It is also worth noting that Florida is expected to continue to grow in accordance with EIA projections, we expect to have as much as a 58 percent increase in our energy demand over the next 20 years.

Florida's renewed interest in nuclear power generation is not been prompted alone just by this population growth but stirred by events in the very recent past that caused us to re-evaluate our energy structure.

The unprecedented level of storms during 2004 and 2005 hurricane season in Florida spotlighted Florida's vulnerability to energy supply, especially in light of our reliance on fossil fuel and primarily natural gas. In fact, in 2005, as a result of the disruption of natural gas supply into the State, Florida's reliability coordinating council had to issue or declare a generating capacity advisory which basically appealed to citizens and businesses to conserve energy so we could avoid rolling brown-outs in the State. It was very serious in Florida during the last two years.

In response to these incidents, Governor Bush issued an executive

order directing the State government and specifically through the Secretary of the Department of Environmental Protection to develop recommendations for comprehensive statewide energy plan. This initiative led to the development of recommendations and finally, to legislation that Governor Bush initiated and subsequently passed by our Florida Legislature. This legislation addressed a myriad of energy related initiatives designed to promote fuel diversity, energy security and alternative renewable energy. I want to focus on some of those issues I think are pertinent to the Commission today. In looking at fuel diversity, the State's recent legislation directed the Public Service Commission to address what were considered some of what I call unintended inequities to nuclear power.

Commissioner Ervin I think put forth basically some of those changes that Florida took to ensure that in a need determination from our Public Service Commission, that energy diversity or fuel diversity was a key component. In addition, some of the challenges to constructing a nuclear power plant due to the capital intensive nature of not only the design process but the construction process, some of the cost recovery mechanisms didn't really seem to fit.

We face some of the same challenges that the Commission is facing today. Because it was anticipated that the industry may react to the lessons learned through the last several years, we are also directed to modify basically our Power Plant Siting Act which is a very similar process that the Commission has in siting a nuclear power plant. The Power Plant Siting Act is relevant to all facilities, power generating facilities in the State of Florida

and is a centralized coordinated licensing process that encompasses permitting, environmental permitting and other authorizations to include proprietary interest in the State and local jurisdictions.

Through this process, entities or applicants are required to minimize adverse impacts on human health, the environment and also not unduly conflict with goals established by local comprehensive plans. So it is kind of a one stop shop to address all the parameters associated with a power plant.

As I pointed out, it is a single license in the State of Florida and actually the process includes a land use hearing, a certification hearing, all or both accomplished by administrative law judge as well as a need determination by the Public Service Commission and the ultimate approval or denial of the project is vested with the Siting Board which in Florida is the Governor and the cabinet.

The changes that we made to the Power Plant Siting Act or some of the changes that were recently addressed by industry in the previous panel, how can we shorten the time frame to address encouraging changes to what was a ten year site plan in the State of Florida. When you looked at industry's ten year site plan for future power generation in Florida, 80 percent of that generation was going to come from natural gas, where just last year, Florida ran into significance supply disruption of natural gas.

So obviously, the encouragement to industry is to re-evaluate that and see how they can look to energy diversity or fuel diversity in this case to allow for a more stable energy environment in Florida.

The challenges that we face in shortening that time frame related to how

to ensure that we can protect the environment, and the public process is not challenged or discouraged in any way possible. It was a very significant challenge. And what we learned Mr Chairman is one of the things that you pointed out. There were several -- actually two mandatory hearings processes that the State went through in siting a power plant.

What we found is in some cases, the only people at that public or mandatory hearing was the applicant and the State of Florida and the judge, because in many cases, it was not a controversial process. However, we endured months of process just so we can meet those mandatory requirements. So in Florida, we were able to change those mandatory time periods.

I bring this up because again, we can shave some time off the process while still insuring adequate environmental protection. The elements that we look at in the Power Plant Siting Act include very much the same elements that you look through in your environmental report section.

They range from land use zoning, demographics, archaeological and historical resource, geoelectric hydrology, ground water and surface water protection, vegetation and wetland protection, ecology and entrapment of animals, threatened and endangered species, meteorology, air quality, noise and more. In Florida, the Power Plant Siting Act actually embraces not only the physical plant but the associated structures, transmissions lines that are associated with the project, roads, rails, et cetera. The one thing I will caution the Commission as you look at the environmental report section of the combined operating licenses, the NEPA process is one that you need to

embrace. I say this because in many times where we have looked to shortcut environmental requirements, and shortcuts is a bad word, but looked to streamline environmental requirements, occasionally we miss a procedural requirement in NEPA. And the EIS process and the challenges that you've seen in the past will continue and your success rate I think is important now. And in order to ensure that success, you are going to need to embrace the requirements of NEPA.

But I think there is process improvements that can take place in the upcoming environmental reports. I know that the Commission is currently working on its guidance document under DG-1145, I think, for environmental reports and we look forward to reviewing those when they come out. I have not seen the most recent revised documents but I have see some recent documentation or guidance from the Commission that is I think, relevant to some of the renewal processes.

And again, I looked at that process and I put it side by side to the State's Power Plant Siting Act process and I can tell you, they are very similar, looking at the same things, same environmental consequences, same issues that relate to other power plants that we site in the State of Florida.

It's also relevant to note that we will still go through the Federal permitting requirements for these power plants and that includes application for any Clean Air Act permits, Clean Water Act permits or Resource Conservation Recovery Act permits.

In this case, in Florida, specifically Florida, we are actually delegated those program permit requirements and as a result, we have the benefit of

being able to coordinate those reviews along with our Power Plant Siting Act reviews. As it relates to challenges for new nuclear reactor sites, one of the things I will ask the Commission to focus on is that of water. Water consumption, thermal plumes and competition for both surface water and ground water resources is going to be a challenge that we will mutually face.

These issues are not new to the Commission. They are clearly addressed in your environmental report section, however the challenge that they present, I think will require close coordination with States and local water jurisdictions.

Finally, I do want to highlight one of the environmental benefits that nuclear power can bring to the State of Florida. Florida is just one of three States east of the Mississippi that actually meets its national air and quality standards. And we intend to continue to meet those conditions.

The five operating reactors in the State have resulted in avoidance of emissions up to 67,000 tons of SO₂, 38,600 of NO_X, and 20.7 million metric tons of CO₂ just in the year 2005 alone.

While we are in attainment, we do participate in a cap and trade program under the Clean Air Interstate Rule that EPA administers. And as a growing State, when you have capped emissions, we expect to see challenges to make sure that we meet those caps.

Clearly, Florida is going to have to continue to look at alternative fuel generation whether it be nuclear, alternative fuels, et cetera to ensure we meet our growing energy needs. In closing, the State has supported the Commission's efforts in making revision to the infrastructure, to make new

licensing reviews more effective and efficient and reduce unnecessary regulatory burdens.

Like the Commission, we have not sited a power plant in the State of Florida for the last 20 years. So we similarity will be going through a review of our procedures and process and hope to continue a close relationship.

Thank you.

CHAIRMAN KLEIN: Thank you Michael. David?

MR. LOCHBAUM: Good morning Mr. Chairman and Commissioners. Could I have Slide 6, please? For more than 3 decades, it's been our view that the primary problem is not where the safety bar has been set, but rather, that too many reactors are limboing beneath that bar. Slide 7, please.

For example, the vast majority of the lessons that the NRC learned from the David-Besse debacle involved enforcement problems rather than deficiencies in the regulations themselves. Slide 8 please:

COMMISSIONER McGAFFIGAN: David, you may want to slow down. They got the wrong slides for the wrong person. She can stop it for a second.

CHAIRMAN KLEIN: We can put it on pause, not an Easy button but a pause button. I think you can probably go ahead. We have those slides. I think you can go ahead and we'll --

COMMISSIONER McGAFFIGAN: Let's see if we can take a second to get it right. Does everybody in the audience have the slides?

It's the people on the internet that's not going to know what the hell he's talking about. And anybody who uses it afterwards if you show it to your grandchildren someday.

CHAIRMAN KLEIN: If they want slides they can send David an e-mail.

MR. LOCHBAUM: Sure it's on our web site today. Slide 8. All we're seeking is for the NRC to do as good a job enforcing its regulations as it does in establishing them. The dividend for your doing that would be putting me out of a job. Next slide, please.

COMMISSIONER McGAFFIGAN: Is that possible?

MR. LOCHBAUM: Yes. Slide 9. My brother, sister and I have an ice cream business I'd rather go into. Same thing, preventing melt-downs. A quarter century ago, the United States Congress probed quality assurance problems during nuclear plant construction and posed four questions I think are relevant today.

Slide 10: How did the quality assurance programs occur? Second was, why were the problems undetected for so long? Slide 11 please. Third was, what is being done to prevent recurrence? And the fourth question was, how are we sure the completed plants complied with NRC's regulation?

Slide 12 please: The answers to those questions are relatively simple. The QA problems occurred due to ineffective management. Slide 13: The second question about how did the QA problems go undetected for so long was due to ineffective management coupled with ineffective oversight. Slide 14. The third question, the QA problems during construction were resolved because we stopped constructing nuclear power plants. We didn't fix the problem, we merely out-last-ed it.

Slide 15, please. If you look at the last plant that was put into service at Watts Bar, the question is, was Watts Bar an aberration or is it the script for

future plant construction? I don't know the answer to that. The other questions were easier to answer.

Slide 16: Going to Congress' fourth question, whether the assurance that the new plants were -- completed plants were in conformance, I think the past three decades have shown that question, we really didn't do a really good job. Over the past quarter century, event after event showed that we failed in that area.

Slide 17: The construction problems would have been avoided had the plant owners merely complied with the regulations and the depth of those problems would have been avoided had the NRC detected those violations sooner and compelled compliance quicker.

Slide 21, please. I have looked at NUREG-1789 and it does not appear that the lessons learned in answering Congress' four questions from a quarter century ago are reflected in NUREG-1789. Instead, the NRC seems ready to repeat those mistakes.

Slide 22 please. Extensive quality assurance breakdowns that took an inordinate period to defiantly detect caused serious construction delays and have also resulted in 36 year plus outages at operating reactors, 11 in the past decade alone. Ignoring this history or recognizing and praying that it will fix itself virtually guarantees its repetition. It's a proven recipe for financial and nuclear disaster.

Slide 23, please. I need to apologize for a typo in the subtitle here. It's supposed to read, "better than nothing," instead of "nothing better." My mistake. If you look at the existing fleet of reactors, there was a

comprehensive power ascension testing program for those reactors that managed to miss lots and lots of design errors. ITAAC appears even less capable of detecting design errors than these past ineffective efforts.

Slide 24, please. ITAAC does appear to be a faster way to miss all the design problems that were missed by the more elaborate power ascension testing programs in the past, but the quicker means of repeating mistakes shouldn't be the objective. An effective way of flushing out and fixing design errors should be the proper objective of ITAAC.

Slide 25, please. What should be done instead of ITAAC or to supplement ITAAC, the NRC used its systematic assessment of licensee performance for the plants under construction, at least the latter part of those plants and the plants currently in operation. The NRC rightly so, tossed out SALP for operating reactors and replaced it with the reactor oversight process. The NRC needs a construction phase ROP.

Slide 26, please. The construction phase ROP won't be a carbon copy clone of the current ROP but instead should be constructed along ROP's principles so that the NRC, its applicants and public share a common understanding of the applicable standards and measured performance against those identified standards.

Next slide please. We're concerned that with the emphasis on construction schedules, rather than quality outcomes, it becomes imperative that the NRC effectively apply its generic communication programs for problems identified during construction to avoid building in the same flaws elsewhere.

Next slide. As far as security during the construction phase, we think it's essential that mandatory, not voluntary security measures must be in place long before fuel arrives on-site. That's particularly true of plants being constructed next to an operating facility.

Slide 30 please, The other issue is drug-free work places at nuclear power plants. With the graying of the work force, that might suggest that future drug problems will be confined to Viagra shortages. Next slide, please. But the problems that occurred at Seabrook, Harris and many other plants, show that NRC's fitness for duty requirements need to go into effect long before fuel is received on-site. I would recommend testing the first panel before they leave today.

Next slide please. Safe culture is something I have not heard talked about at all except in very limited applications for new plants. Allegations about shoddy construction plagued many nuclear construction sites, causing extensive delays, and expensive remedies. Next slide, please. Currently, the NRC's investigations of harassment and intimidation allegations are very untimely. They take years to complete. The NRC must figure how to investigate harassment and intimidation allegations in a timely manner and then do it. There is a lot of talk about streamlining this and accelerating that. This needs to be on that list as well, figuring out how to do that faster and getting to that answer whatever it is.

Slide 34, please. We also looked at whether the past really is an indicator what the future will be. And I think there are some signs that it is. The vibration problems that were affected that resulted from modifications at

Guad Cities and Palo Verde, unless those were a result of low quality, disengagement between the industry and NRC instead of this high quality engagement we are talking about, those are problems that should have been avoided.

It doesn't suggest that design problems in future reactors will be avoided any more than those were. There is also the pressurizer heater problems at Palo Verde and Waterford. And there is a long list. There is scant evidence to suggest let alone prove that the nuclear industry and its regulator have magically cured all these past problems.

Slide 35, please. I personally believe this agency can match its performance in creating regulations by its ability in enforcing them, and not by dumbing down the regulation side. I think reaching this goal will yield better safety and financial performance by the existing reactors and new reactors if any are ever built. Thank you for considering our perspectives on this issue.

CHAIRMAN KLEIN: Thank you panel members for your comments and now, Commissioner Merrifield?

COMMISSIONER MERRIFIELD. We have a lot of information packed into a half an hour there. And I appreciate all the work of the panelists in that regard. I will start in accordance with the questioning, the first one to Jimmy Ervin. You talked a little bit about the direction that Public Utility Commissions are looking at relative to the construction while in progress program. That is something in particular you got it under consideration with North Carolina, so you have to be careful what you answer.

But I'm reminded perhaps because I'm from New Hampshire, and the

issues that Public Service in New Hampshire and the residents in New Hampshire had to deal with all that. The decision at the time to move away from that partially resulted in the bankruptcy of Public Service of New Hampshire, for a variety of other reasons.

In terms of the current look at charges, to what extent are you influenced by the changes made in the regulatory process in our agency and the discipline of utilities to meet the kind of requirements that we are establishing? Is that having an influence in terms of States willing to take another look at this?

MR. ERVIN: Well, of course I think the willingness of States to take a look at it at least under most structures will depend on what the utilities wish to do. We are reactive rather than proactive agency, generally speaking. It seems to me generally speaking, if you look at the history of earlier certification decisions in North Carolina, our statute was passed after all but one of the reactors that were ever considered in North Carolina and the one that actually went through the certification process was later cancelled. So we don't have a long history.

Generally speaking though, it looks to me as if the appellate decisions that we operate under would expect us to take the decisions that you make here and simply rely on them. We don't have any ability, I don't think to go behind your decisions and say, well, you should have required them to do A rather than rather than B, generally speaking. If they as an applicant failed to comply with your rules or adopt -- make some decision that is not governed by your rule, then, I think we would have some ability to look at the prudence

of those decisions and then to disallow them. We probably would also have the ability under our certification statute to say that certainly, you got an NRC or COL for your plant but that all of the analysis that we showed suggest that you ought to build some other kind of facility or that you ought to rely on some new efficiency or other types of consideration.

So we would take your decision as a given and would not look behind them. It looks to me like our range of consideration is totally different than yours. And there's no sense in having duplicative processes. At least the economic regulation process does not seem to duplicate what you do.

COMMISSIONER MERRIFIELD: This goes to and this isn't just a financial aspect but goes to your issues on the environmental side, to conduct a combined operating license application process for our agency we are looking at anywhere between 30 and 60 full-time equivalent positions dedicated to that, somewhere in the neighborhood of \$3 to \$5 million in contract costs, there is a significant up-front cost that will be imposed on the utility to go through our process.

Sometimes that process can be dramatically affected by decisions made about are you going to use cooling towers, are you going to use other forms of cooling for thermal cooling needs of the plant. There is an issue of timing, who goes first on some of that. How are you all resolving or wrestling with those issues so we don't go through this whole process, only to find later on, you are finding the proposal to be unacceptable for environmental concerns.

MR. SOLE: Commissioner, I'll say there are two ways of resolving that and one of them is supplemental timing of filing for the COL with the

Commission itself as well as the license application for the State for the Power Plant Siting Act, so that we are reviewing those together at the same time. Obviously, underneath one of the things that States will have an opportunity to do is to register our comments through your process.

While that without questions and opportunity, I would like to think we would be able to work more closely together so that as we review applications and raise concerns early in the process, we can raise them to the Commission as you are similarly looking at the environmental side of your COL.

So that any issues that Florida may have that we feel strongly about, whether it's the consumption of water, thermal discharge, we have concerns about those problems that the Commission hearings are concerned early in the process so they can help develop the final application so that both the Commission and the State of Florida are reasonably happy.

COMMISSIONER MERRIFIELD: Thank you. David, going to your presentation on Slide 12 and 13, two of the failings, you listed the problem as being ineffective management and second was ineffective management, ineffective oversight. I was reminded I think I will was Bob Dole -- if it wasn't, I apologize but when asked why he lost the election for President, he said, "not enough people voted for me", which obviously, masked the underlying issues. It's sort of easy to say "ineffective management" but I want to get a better sense and greater depth of your views of what were those feelings in terms of what we were doing on quality assurance and on failing to identify problems for so long.

MR. LOCHBAUM: I tried to address it -- apparently not well enough but I tried to address it later on with the problems of ITAAC and the need for a construction phase ROP equivalent and the need to get generic communications out faster.

It seemed like in the past, the NRC came in too late. The NRC didn't do much inspection during the construction phase and waited until shortly before the key was to be turned to come in and see if everything was okay. And if there were any -- some deltas between what was expected, that was a little late in the game to identify, the cost was higher and the options for fixing them were lower. So I think that needs to be factored out. The ITAAC just doesn't seem to be a way to get to those answers quick enough.

It also seems to be a fairly late in the process way of answering some of those questions. And the questions being asked are pretty superficial. So they really won't get to whether the design is adequate or not -- or the construction is adequate or not. So I think that's --

COMMISSIONER MERRIFIELD: I won't ask another question because I've run out of time but I would say your comments about H&I, and the timeliness I think certainly, I ask that questions all the time have been how we can be more timely? On the issue of an ROP for new construction, I would be interested at some later point if you had some more detail on what something like that might look like, it seems interesting, but again, I would need a little more depth to understand where you're going. Thank you.

CHAIRMAN KLEIN: Commissioner Jaczko?

COMMISSIONER JACZKO: I wanted to follow up on some of the points that

Commissioner Merrifield raised. Mr. Ervin, I think you made the comment in one of your slides, a lot of the processes that you deal with would happen after -- for instance, in this case, we would issue a COL application.

Is that a issue of practice or is that an issue of a requirement, because certainly one of the issues that we are trying deal with is making sure that we're dealing with as many outside issues ahead of time so we don't go through a licensing process that winds up getting caught up in some other issues extraneous to our responsibilities.

MR. ERVIN: there is nothing in our statute that would require that it come after. I do think that you would need to have a reasonably complete plant design in order to survive the review process because again, if you're looking at what it's going to cost, then, you would need to know what the design was to go back to some of the discussions that I had with Commissioner Merrifield to the cost is going to be determined to some extent by what you require and therefore, it has always made sense to me that that order was followed.

And I'm not really sure how you can do them in a combined fashion without the risk of the re-work what was discussed earlier. Our processes are different than those that Mr. Sole described because you're looking at many of the same issues. Ours are really -- we've got the ability to build this plant now based on the COL granted by the NRC. Here under State law, the reasons we ought to be permitted to do it and it seems to me to have a reasonable decision out of NRC before we could really intelligently discuss what needs to be done.

COMMISSIONER JACZKO: While I recognize you're from the State of North Carolina, is that generally true of States when it comes to the responsibilities of their utility commissions?

MR. ERVIN: Obviously I'm not able to speak definitively but I think at least for those States that are traditionally regulated, that's probably true. I looked, for example the Mississippi statute which is one of the ones I randomly picked out to look at is almost identical to ours, for example.

If you had some of these more light-handed review statutes like the Virginia one, maybe you can do that. I don't know but even the questions that are asked in the Virginia statute seem to me to assume that you know what you're going to do in terms of building the plant and you can't really know that until your processes are completed.

COMMISSIONER JACZKO: Mr. Sole, I don't know if you have anything to add to that. I know you raise a slightly different perspective certainly on the environmental side of that. That review could proceed concurrently perhaps with the work we are doing. But if there are other areas where you think the State activities would have to come after an NRC process was complete or are there things that can be done ahead of time or concurrently?

MR. SOLE: I think they can be done ahead of time or at a minimum, concurrently. In fact, I believe under the needs determination that Florida pursues under its public service Commission, the COL would not have to be issued as they go through and identify a need determination up front which is part of that process.

COMMISSIONER JACZKO: You talked a little bit about transmission siting as part of the scope of some of your environmental reviews. Again, that's not really an area that siting of transmission that we really have a role in. What's your sense in Florida? Is that something you see as an impediment in the future or is that issue being dealt with now or are the tools there to deal with it?

MR. SOLE: That is a good question, Commissioner. The tools are there to deal with it. Without question, that is an upcoming challenge as we put more power generation units on line in the State of Florida. Our transmission infrastructure has not necessarily kept up to pace with that generation capability. So we expect to see a lot more transmission infrastructure being invested in over the next several years. As part of our process, again, we don't look just at the physical plant but the connectivity of that plant as well which is helpful so that there is a thorough or robust review of the overall impact of the facility, not just the physical plant itself. But I do see need for additional transmission infrastructure in the state of Florida. In fact, one of the issues that we did also streamline is our Transmission Siting Act because that need exists.

MR. ERVIN: To go back to one thing I said earlier, certainly, the timing statements that I made earlier stand, but our statutes both on transmission siting and on generation siting have pretty quick time limits. We are required in a generating facility to convene a hearing within 90 days of when the application is filed. We are required to have briefs submitted no more than 30 days after the hearing is over, and we are required to make a decision, 60

days after the briefs are filed.

I don't remember the transmission siting rules but they are comparable. So the potential for massive delays at least in the North Carolina certification process isn't there, we got to give enough time for people who are opposed to the construction facility for various reasons to come in and be heard. But the General Assembly pretty clearly said, they want those proceedings expedited to the extent they can be.

COMMISSIONER JACZKO: I have some questions for Dave but I think we'll have perhaps another opportunity.

CHAIRMAN KLEIN: Commissioner Ervin, I couldn't help but note during your presentation, the lack of standardization in the way different States deal with their construction. The first panel talked a lot about standardization, it seems this is an area that obviously, there is not a standardization. I guess in your case, Mr. Sole, the State of the Texas did the same thing that Florida did in terms of a lot of the new units that were added were natural gas because they were low capital costs and then you can pass those costs on. I guess I would like your comments, how do you see the trend for fuel diversity for those larger capital type plants, coal or nuclear, compared to the short term low capital cost decisions among the various States?

MR. ERVIN: Well, I think -- again, I can't speak for all MY colleagues nationwide, I'm reminded of the disclaimer that my colleague, Marsha Smith s from Idaho gives frequently, that not only does she not speak for her colleagues, but she reserves the right to change her mind and therefore does not speak for herself either.

But with that caveat, there certainly is a great deal of interest within the State regulatory community in issues of fuel diversity. I think the situation you described in Texas and Mr. Sole described in Florida has been true in lots of other places in the country and there has been a renewed interest in nuclear generation at the State level, among certain State commissioners. There's also been a renewed interest in some types of coal generation at the State commissioner level in the sense that for the essential reason that you said which is that you don't want to put all your eggs in one fuel basket because you can have the kinds of things happen that happen with gas in the sense that the price went through the roof and you became dependent upon it and therefore the electric rates went up as well.

You would get others that would argue that if you go certain routes in terms of fuels such as pulverized coal, we have a case in North Carolina in which there has been substantial environmental objection to that case. There may be some in the event that a nuclear plant was ever proposed. So there are a lot of issues that need to be taken into consideration. Generally speaking, however, in the State regulatory community, fuel diversity is considered a good thing.

CHAIRMAN KLEIN: So I assume that you realized too many eggs in one basket, and that's why you looked at that long term more capital intensive sources?

MR. SOLE: That's correct, Mr. Chairman, absolutely.

CHAIRMAN KLEIN: A quick comment, David. I couldn't help but notice your comments on the drug issue that you volunteered the first panel but not

the second panel.

MR. LOCHBAUM: I'll be glad to pee anywhere.

COMMISSIONER MERRIFIELD: Not in this room.

CHAIRMAN KLEIN: The Commission might object to certain things.

I guess I was surprised on the drug comment because I have been fairly impressed with the policies we have for drug testing and requirements. Is there something we're missing?

MR. LOCHBAUM: No, I think it is a good policy because I worked in industry before and after the policy went into effect. It's just that it's not clear that when that goes into effect when the site's under construction. If it goes into effect upon fuel receipt, that may be too late to do much good.

CHAIRMAN KLEIN: Okay, so you're more concerned about during construction?

MR. LOCHBAUM: Right. Again, it's not the regulation, it's the timing of when it goes into place. I'm glad you asked that because I didn't mean to disparage the rule.

CHAIRMAN KLEIN: Commissioner McGaffigan?

COMMISSIONER MCGAFFIGAN: I'm going to start with Mr. Sole. If I were an applicant in Florida, would it be wise for me to come in as I'm preparing my environmental report to be submitted consistent with the Commission regulations, and talk to you guys and get everything worked out ahead of time? If there are plume issues or killing fish issues or whatever issues there may be, heat pump, here's my solution. Is that a useful use of their time while they are in the COL in developing the environmental report

part of their COL?

MR. SOLE: Absolutely.

COMMISSIONER McGAFFIGAN: I assume based on past history that if they have not done that and you see something in the application that you and your staff don't like much, that to protect yourself, you will probably exercise your rights as a party in the NRC process and submit contentions that they should have used cooling towers, or they are taking too many fish, whatever the issue is that they have not worked out with you in advance. Is that a fair guess as to this likelihood of what you might do?

MR. SOLE: "Likelihood" is a difficult word without question and we would reserve that opportunity if need be depending upon the State's concerns and how significant they are, whether we would actually petition or participate legally in the EIS process.

COMMISSIONER McGAFFIGAN: You might not because you have these delegated permitting authorities under these various acts that you can stop it on your own without having to use the NRC process. Is that the thought?

MR. SOLE: No, because one of the things, as a long term regulator, and let me say this way, I've been a regulator for most of my life. One of the things you do want to focus on is the regulation that you're required to administer and not use or abuse that. So if there is an issue that we're concerned that's part of, for example, the environmental reporting section of the COL, we would want to be up front with the Commission as well as the applicant that we have a concern on this aspect and not try to use other

regulations, because it's legal a world and without question, we need to make sure that our concerns are identified and they are justified by the law.

COMMISSIONER McGAFFIGAN: The issue of waste confidence, the Commission has a Waste Confidence Decision. We stand by it. We recently reviewed it in calendar year 2004 or something, we did a brief review – earlier than that. And we will review it at whatever required rate that we have to review it. But is that likely to come up in your environmental review because it isn't in ours. By definition the, Waste Confidence Decision removes it from our review.

MR. SOLE: I think it is likely to come up as an aspect of bringing a power plant to our siting board which is again, our governor and cabinet. Those issues will probably be looked at and discussed by the State of Florida. While it's vested with the Federal government, I think there is going to be questions on disposal and waste confidence issues.

COMMISSIONER McGAFFIGAN: How would you deal with them, given the lack of a structure?

MR. SOLE: I think the best way we can deal with them is keep in touch with the Federal government as they go through their process. We continue to watch recent Congressional efforts on waste disposal and where the process is and be prepared to advise and guide the Siting Board on where it is in the Federal process and give them the straight answer.

COMMISSIONER McGAFFIGAN: Mr. Ervin, you said that North Carolina the environmental issues will be handled by the appropriate State environmental body.

MR. ERVIN: Right, generally case law would allow us to look at them but we don't have primary responsibility for them.

COMMISSIONER McGAFFIGAN: And so, their involvement would be with the issues that Mr. Sole has been talking about. Your involvement would be with the rate issues?

MR. ERVIN: Generally, that's correct. I don't have a detailed knowledge of what all permits you have to get from the State agency because we have an agency that's similar to Mr. Sole's and different processes are probably different but you would have to go through proceedings over there as well.

COMMISSIONER McGAFFIGAN: I'm a little troubled with the notion of the sequential rate issue because -- I would be troubled if I were an applicant because there is a limited number of forging capabilities on the face of the earth for these large items that go into nuclear power plants. They have to get in cues to build those items. And they sort of have to know whether they are likely to be able to get reimbursed if they get in the cue --

MR. ERVIN: And that's the reason that I mention these specific State statutes at the end because like you are applying Congressional enactments, our job is to enforce statues passed by our General Assembly and I can outline for you what they are today. But of course the General Assembly always has the right to change the law. We are starting to see efforts to do that in some States, the Florida one in particular deals with nuclear. Whether that happens in the North Carolina General Assembly, I can't say.

COMMISSIONER McGAFFIGAN: I don't want to take too much time but if you have a 42 month process here and the last part of that is a hearing, the

staff has completed its work and the staff is ready to say the SER and the EIS are okay but we're still in hearing, there still may be contended items, there may simply be a mandatory hearing under current law, would it be fair to say the staff has completed its work in 30 months during that 12 month period in which you're waiting for the last items to be resolved in our adjudicatory process, would it be fair for somebody under existing North Carolina law to come in and say, we think we are going to get a COL --

MR. COLE: Sure, there is nothing in the North Carolina statute that would prohibit somebody from doing that. The timing of the application is solely up to the applicant. They know what standard has to be met under the law. They are free to file their application at whatever time they think they can meet their burden of proof. So that's really up to them.

COMMISSIONER McGAFFIGAN: I'm getting the sense this is pretty complicated at the State level which is what we had this panel for.

MR. ERVIN: Oh, and I can make it more complicated than that.

COMMISSIONER McGAFFIGAN: Thank you very much. Lay out all the complications. Those are the guys you that need to hear it.

MR. ERVIN: They know them too.

CHAIRMAN KLEIN: Commissioner Merrifield?

COMMISSIONER MERRIFIELD: I agree with Commissioner McGaffigan. I think this has been very instructive to teach us a little about some areas of our fellow regulators that we are not always fully sufficiently aware of. So that was very helpful.

This is more of a curiosity questions than anything that falls within our

regulatory scope, probably curiosity because I worked on the last reauthorization of Clean Air Act a long time ago. I know in my home State of New Hampshire, they have made a provision such that new generation from Seabrook Station nuclear power plant can qualify for Clean Air Act credits which makes that a more attractive option for the folks in the northern part of Florida Power and Light. But is that something that other States are considering and thinking about at this point?

MR. SOLE: Florida has with without question done that. We recently passed our version of the Clean Air Interstate Rule providing a cap and trade opportunity and by doing so, what we have done is we have allocated credits to the utility industry and said, here's your credit load. If you want to generate power and have no emissions and generate that much credit, that's fine. You may sell the credits. If you want to pursue coal technology and consume your credits and buy credits from others, that's fine as well.

COMMISSIONER MERRIFIELD: Personally, I thought that was one that Congress should have fixed but I was there when the deal got made and that was left off the table. David, you had just a little bit to talk about. I want to get back to your construction phase ROP, I've had a couple more minutes to think. Do you have some specific elements you would think about including in that.

MR. LOCHBAUM: I think the ROP framework which identified first what are the cornerstones. That similar approach should identify what are the important elements during the construction phase. Then once you identify those important elements, they are not likely to be the same, but once you

identified it, then you drill down to identify what are the measurables that would allow you to ensure that you're in the right space in those cornerstones and it alluded to security, there would be some other ones.

That's not the full list. That approach developed and periodically having the NRC inspectors and perhaps some performance indicators that the industry measures themselves like the ROP does would allow everybody to monitor how the construction phase is going. So if it's going in the wrong direction, hopefully, you would identify that soon and correct it before it got into the problems that Zimmer and others got in the past. That was the intent. I had not fully flushed out the idea but that was the concept I was putting forward.

COMMISSIONER MERRIFIELD: All right, thank you.

CHAIRMAN KLEIN: Commissioner Jaczko?

COMMISSIONER JACZKO: Just to follow up a little bit on that idea. Essentially, I would think the ROP has might be three main components -- really what we are looking at through performance indicators and inspections and then, we have the significance determination process. So clearly, your statement is about given there is no fuel, we would clearly need at least some kind of new significance determination process.

But one area that I wanted to touch on that was related to this, you talked about the ITAAC and said you didn't think that the ITAAC -- and correct me however you said it -- but the ITAAC was not necessarily going to get the job done in a way. Certainly the way our statute is structured right now, it really is the ITAAC that needs to get the job done by and large. As our

statute says, they are necessary and sufficient conditions to show that the plant has been built and will be operating in conformance with the license.

So if the ITAAC in your view aren't really going to get there are there suggestions you would have about how to improve and fix the ITAAC?

MR. LOCHBAUM: Well, the ITAAC, as I have seen tem, is so broad that it basically determines whether a safety system functions or not. Will it pump water from point A to point B? It doesn't get at the real important issues of does it do that under all design basis conditions? To go back a few years ago, Marty Virgilio led a team that went into Connecticut Yankee and found out that the transfer pipe was long enough but not the right diameter. So the test every month showed that it would get water from the CST to the plant but under the design basis conditions, it was not big enough to transfer at the right rates. The ITAACs are basically very simplistic moronic tests of whether the pump will run and whether flow will come out at the other end. It doesn't really get at the issue under all design basis conditions. When it is really challenged, will it do what it needs to do. If it did that, then, it would be fully adequate but it doesn't.

CHAIRMAN KLEIN: Commissioner McGaffigan?

COMMISSIONER McGAFFIGAN: First, I want to ask Mr. Ervin a question. How do State utility regulators, cost regulators, deal with the issue that these plants by law are licensed for 40 years? But if you look at our web page, you will see that 44 plants have been renewed for another 20 years, there is ten applications in and I think we got about 80 of the 104 plants now in the cue to ask for license renewal. So it looks like even the existing plants

will operate for 60 years for the most part or have the opportunity to try to operate for 60 years.

And the new plants are being designed I think from the get-go to operate for 60 years, perhaps longer. But you know, you're betting on a Commission 40 years from now, 30 years from now, deciding whether to renew a license for an extra 20 years, consistent with our current license renewal rule.

How do you deal with that? It is likely they are going to operate for a lot longer than 40 years. If they operate longer than 40 years, you can adjust the rate base accordingly.

MR. ERVIN: What we did with -- not we, I've only been in office 7 years and most of the rate cases were tried years ago when I was in private practice. But what was done initially was that the 40 year life was taken as the period to be used in establishing the annual depreciation and then also for purposes of determining the rate allowance for nuclear fuel disposal cost.

As license extensions have been granted, we have gone back and had a series of proceedings in which we have reviewed the level of nuclear fuel disposal costs included in the rates and in one instance that precipitated in part a rate case for Dominion North Carolina Power of one of the factors that led to a rate reduction was the extension of that period.

In the event that the condition that you described happened in a future rate case, we just make adjustments at the time. All you can do is do the best you can with the information that you got.

COMMISSIONER MCGAFFIGAN: You can't anticipate information --

MR. ERVIN: You can't anticipate it and if it changes, it changes, but

presumably, whatever license period you gave for a new plant would be the period over which depreciation and nuclear fuel is supposed to be calculated initially.

COMMISSIONER McGAFFIGAN: And the only comment -- I'm out of time, -- David, I think that a lot of the problems that you outlined with new plants, standardization is going to be a big factor in reducing or, at least, standardizing them. So if we have a problem, if these guys come with verbatim request and build identical plants, if a pipe is not wide enough at plant X, it's not going to be wide enough at all the other plants. I suspect that a hell of a lot of thermal hydraulic analysis codes that didn't exist when these plants were designed that are currently in service has been done both by the industry and by our staff in the design certification process.

I just don't expect that's going to be as big a problem. Now, I may be wrong but my bet would be that a lot of the things we saw when we let a thousand flowers bloom and had every plant designed to that utility's needs so there was nothing standard almost, that was where the problem was. And standardization is going to help a whole lot in reducing the problems that you're suggesting we had with the last generation.

MR. LOCHBAUM: Just a quick response to that very quick. Prior to joining UCS, one of my last jobs in the Industry was to work at Wolf Creek plant which was one of the two standardized plants. And I was out there and they had problem a problem with the turban generator controls. So I asked a question at the meeting, what is Callaway doing with this, the other plant? And the answer was something to the effect of we don't care what those

chuckleheads are doing. So, the plants were initially standardized but then, they drifted apart. Indian Point 2 and Indian Point 3 are another example, side by side, but then drifted apart.

COMMISSIONER McGAFFIGAN: Maybe we can get the guys behind you to swear blood oath that they continue to be standardized even after the licensing process in which case –

PANEL MEMBER: Who's blood?

CHAIRMAN KLEIN: My guess is that there is a lot better communication now than there was back in those days.

COMMISSIONER McGAFFIGAN: I sure hope so and I believe there is.

CHAIRMAN KLEIN: I would like to thank the panel for your contributions. As Commissioner Merrifield said, there is a lot of information there and so most of us have had a chance to look at that in advance. So I appreciate your time, efforts and comments. This portion is adjourned and we will reconvene at 1:30 and hear from the NRC staff.

(Proceedings are adjourned)