UNITED STATES NUCLEAR REGULATORY COMMISSION

PERIODIC BRIEFING ON NEW REACTOR ISSUES

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WEDNESDAY

APRIL 30, 2008

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The Commission convened at 1:00 p.m., the Honorable Dale E. Klein, Chairman presiding.

NUCLEAR REGULATORY COMMISSION

DALE E. KLEIN, CHAIRMAN

GREGORY B. JACZKO, COMMISSIONER

PETER B. LYONS, COMMISSIONER

KRISTINE L. SVINICKI, COMMISSIONER

PANEL 1: INDUSTRY REPRESENTATIVES

CHRISTOPHER CRANE, Chief Operating Officer, Exelon Generation, Chairman, NEI New Plant Oversight Committee (NPOC)

STEPHEN BYRNE, Chief Nuclear Officer, South Carolina Electric & Gas, Chairman, NEI New Plant Working Group

ANTHONY PIETRANGELO, Vice President, Regulatory Affairs, Nuclear Energy Institute (NEI)

NRC STAFF:

LUIS REYES, Executive Director for Operations

GARY HOLAHAN, Deputy Director, Office of New Reactors

THOMAS BERGMAN, Deputy Director for Licensing Operations, Division of New Reactor Licensing, NRO

CHRISTOPHER JACKSON, Chief Containment and Ventilation Systems Branch 1, NRO

BRENT CLAYTON, Chief Environmental Technical Support Branch, NRO

MICHAEL JUNGE, Chief, Operator Licensing and Human Performance Branch, NRO

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

CHAIRMAN KLEIN: We look forward to the discussion on new reactors today. This is one of several that we've had periodically. I think this is probably the discussion we have the most public hearings on, but it's obviously one that's very important.

I'm always impressed with the amount of work that has gone on, both by the industry and by our staff in making progress as we move forward.

What we'll hear today, first from the Industry Representatives and then we'll hear from our staff. I should point out that even though he's not sitting at the table yet, but this is a semi historic event that this will be Luis' last opportunity to sit at the table as EDO.

It may not be his last opportunity to sit at the table, but I'd just like to comment that before we start that while the new reactors is certainly something on our minds today, I think Luis' contribution as EDO has been very remarkable.

You're leaving the position better than when you came, which I think should be a goal of any administrator. So, you're commended for what you've done and we know how to reach you. You're not retiring, you're just moving.

So, any comments before we start.

COMMISSIONER JACZKO: I would echo the Chairman's

comments about Luis. We look forward to seeing him, again, in a different capacity. I certainly appreciate all your services as the EDO and as the Chairman indicated there are certainly a lot of visible changes you made to this agency since you've been here.

I think one of the ones that stands out most in my mind is all the work that you've done to improve diversity at the agency, in particular the Comprehensive Diversity Management Plan.

I think it's really an example and I remember you remarking to me once that we have more different organizations to address diversity at this agency than a lot of other agencies. I think that really is something that you should be proud of and has left a real important a legacy for this agency.

We have a lot to continue to work on -- to continue to improve upon what has already been done in that area. Thank you.

CHAIRMAN KLEIN: Commissioner Lyons?

COMMISSIONER LYONS: Well, I would also add that I think few people appreciate the set of challenges that the EDO faces on a daily minute by minute basis. I've been tremendously impressed, Luis, with the way you've handled those challenges.

I know that nuclear safety has improved in the Nation because of your contributions and I certainly thank you very much. I, too, look forward to seeing you, whether it's at the table or in Region II for many years in the

future.

COMMISSIONER SVINICKI: I don't have too much of a personal attestation to add, but I am aware of your tremendous resume of public service and I credit you for that. Thank you.

CHAIRMAN KLEIN: As everyone knows, we have a great succession plan and so Bill Borchardt will assume the post. In our senior staff meetings every morning he's moving closer and closer to his assigned seat. He started sitting in the corner and moves closer. So, by the time we convene our next one he'll be sitting in the proper spot.

So, we look forward to great things from the torch getting passed. Well, with that, Tony would you like to start.

MR. PIETRANGELO: Well, first on behalf of the industry, I'd like to thank Luis for his outstanding public service and I know the folks in Region II look forward to working with him as do we at NEI and we welcome Bill in his new position and we look forward to working with Bill as well.

It's been about six months since our last Commission briefing on new plants. There's been a lot of activity here. We really appreciate the opportunity to provide an industry perspective on the status of the activities.

Joining me to my immediate left is Chris Crane, who's the Chief Operating Officer of Exelon. He's also the Chairman of our New Plant Oversight Committee and Steve Byrne, the Chief Nuclear Officer from South

Carolina Electric and Gas. Steve chairs our NEI New Plant Working Group.

A little about the New Plant Oversight Committee. Its members comprise executives from all the companies who either are developing or have submitted COLs, design certifications and early site permits. It's really our equivalent to the Nuclear Strategic Issues Advisory Committee that we have on the current plant side.

And Steve's New Plant Working Group really is the regulatory and licensing focus also very high-level representation. Steve also serves on our New Plant Oversight Committee.

The topics we're going to cover today, a little on the current process overview where things stand. Some technical and policy issues, what our priorities are going forward and our conclusion.

Steve will do the current process overview, I'll handle the technical policy issues and Chris will bat cleanup on the industry priorities and conclusions.

With that, let me turn it over to Steve.

MR. BYRNE: Thanks, Tony. Mr. Chairman and Commissioners, we appreciate the opportunity to be before you today to present the topics at hand. We've gotten a lot of questions about how many applicants would intend to move forward with COLs. I think it's a relatively simple answer from our perspective.

We expect that the companies that have expressed their intent to file will indeed file. As you are doubtless aware that we've had nine COL applications to date and many of those companies have ordered long lead materials.

This is up to $100 million commitment in year one once you order those long lead materials. So, certainly on behalf of my company and Chris' company we've ordered those long lead materials.

We also anticipate that the companies that submit for the COLs will stick it through to the licensing process and will then make a decision to construct.

Now, some of those utilities may construct immediately. Some of them may make a decision to delay construction. There are a lot of factors that go in when you're talking about a process that lasts 10-plus years.

In our case, we started down this road in 2005. We don't anticipate that the new reactor will come online until 2016 at the earliest. It's a long process.

Very capital intensive as you're also doubtless aware. Some of the things that will go into decision making as to whether or not you build or build right away are going to be the permitting process, not just the COL permitting process.

We've got a lot of state and local regulatory agencies that we need to

get approvals from and some other Federal agencies, like the Corps of Engineers or the Federal Energy Regulatory Commission that we also need to get approvals from.

The projected need for power is going to play a big part in our plans. As we see it today, the need for power is there. Provided that need for power continues to be there, we will continue with our plans to build new plants.

Cost of fuel alternatives. In the southeast where my utility is specifically we're comparing the cost of nuclear with the cost of coal and natural gas. Those fuels are relatively expensive. We don't see the cost coming down in the short term and gas provides a lot of price volatility that we would just as soon avoid.

Financing will be, obviously, a big issue for us as well as the health of the U.S. economy and the world economy, particularly with respect to things like the recession or commodities and the availability of long lead materials.

If we continue to progress down the Part 52 licensing process, we expect that you'll see more orders for new plants and the Commission will see new license applications coming forward beyond this first wave of plants.

We anticipate you'll see more in the 2010 to 2014 time frame. We do not expect any surprises to what you have been told already for fiscal year

2010.

As you are aware, we've had a lot of interaction between the Commission, the public and the industry. We had a lot of public meetings, both at our sites and here in Washington, D.C. as we move forward with implementing and learning this new Part 52 process. And it has been a learning experience, I think, for both sides.

There's a pretty heavy workload not only on the Commission, but on the part of industry, but I think it's been made a lot more manageable by the NRC initiated design centered review approach. That's complemented on the industry side by our design centered working groups where utilities have chosen the same technology work together.

What we see out of this is a high degree of standardization and the industry is committed to a high degree of standardization.

You can see that in our COL applications you've received a number of reference COL applications and part of the AP1000 and the ESBWR. You've already seen the subsequent or so-called SCOLAs come in.

We anticipate that as other vendors see their second and/or third plant submitted you'll see other SCOLAs from those vendors also.

I'd like to talk a minute about a couple of potential process issues. We're going through a period where we're changing or amending regulation or adding new regulation during a multi-year review process for these

license applications. So, we shouldn't be surprised that there's going to be some rubs along the way.

I'd like to talk about a couple of specific examples. One of them is the recent changes to the LWA rule. And the other one is the upcoming issuance of secured regulations under Section 73 Parts 55 and 56.

It is clear to us that we need to issue guidance in parallel with new and revised regulations. That will be a common theme throughout our presentation.

Public interactions are important and we think that we need to continue those during the rulemaking process. It's going to ensure that guidance and rules are issued at the same time. Where that has not been the case, we think we've had some problems.

We go specifically to the Part 73 rulemaking. A lot of the new requirements are coming out in response to the September 11th attacks. As you're aware, our existing fleet has a set of requirements that changed after September 11th.

The new security orders are going to largely mirror codifying those requirements. So, we've got a set of security plans that have been developed for people who have already submitted or shortly to submit license applications that mirrored the security requirements at our existing facilities and some NRC approved templates for security going forward.

Now, the scope of the new rulemaking will be a little bit broader, but we don't believe that the new plant security plans are going to be significantly different from the existing security plans.

Now, the NRC has recently suspended review of the security plans until after the new Part 73 rule is issued. We think this decision should be reconsidered.

It's obviously going to be very difficult for plants with SER dates early next year to be effective when the security rule may not come out until early next year.

We do appreciate that you don't have a final rule yet with which to evaluate our security plans, but you do have a template. We think that the review can go against the approved template and then when the changes come out, presumably early next year, that we can fill in the gaps, if you will, and submit what the changes are to those regulations. That should make the review process easier and allow us to continue our schedules.

For the Limited Work Authorization guidance or LWA rules, this is another example where we need the guidance to come out at the same time as the rule did.

Now, as you're aware we commended the Commission for their changes to the LWA rule in 2007, yet the guidance for that rule was issued just earlier this month. So, we've had a rule in place for a short period of

time, but the guidance has just come out.

That draft guidance recommends segregation of construction and pre construction activities consistent with this new rule. We've had a number of our applicants that have been working for an extended period of time with contractors expending a lot of money on the development of these environmental submissions that go along with the rule and if we have to rely on LWA, we could be in a position where to go back and re-segregate would cost a significant amount of money.

In the case of an individual application we're looking at somewhere in the half a million dollar range just to revise that for a situation that should be bounded by the final construction environmental reviews.

We don't think that it was the NRC staff's intent to require a complete rewrite or resubmittal for near-term applicants. We're prepared to work with the NRC staff to resolve these issues in a manner that doesn't present an undue burden to the near term applicants.

We propose that we work with the staff to come up with some guidance by the end of June on how to handle the existing or near term applicants under the RAI process and that the new guidance be applicable to applicants that file after calendar year 2009.

Lessons learned from what we would call these process issues is important to implement guidance in parallel with the rulemaking process.

Where we deviate from that is where we get ourselves at cross swords occasionally.

Last item I'd like to talk about is enhancing the environmental review process. We understand that the staff is preparing a report and an action plan to enhance the environmental review process.

This incorporates insights gained from public interactions. We fully support this activity. We provided our thoughts on improving the process in a letter that was dated January 25th.

The main recommendations in that letter were to develop common standards for the development of the environmental reports and the environmental impact statements, improving the hearing process to add efficiency and then following the examples of license renewal process where you address specific issues in a generic manner.

Those are things like alternative energy sources, intake structures, physical impacts, and avian bird mortality. The enhancements are important because the strong industry commitment to standardization coupled with design centered review approach provide the high potential that the environmental review will become critical path for those applicants that submit after 2011.

We look forward to working with the staff to implement this action plan. With that, I'd like to turn it over to Tony Pietrangelo.

MR. PIETRANGELO: Thank you, Steve. At the top of our list on technical policy issues is maintaining standardization and high quality applications. You will always see this at the top of our list.

We know we have to do our part as an industry to give you a high-quality product to facilitate the staff's review.

Last year, we started pretty high up on the learning curve. The final rule came out; all the guidance came out while a lot of the COL applicants were developing their application.

We started out high on the learning curve, but I'm pleased to report we think we've moved substantially down that learning curve and we will continue to adjust as we get feedback from the staff on the quality of the submittals.

Beyond standardization and the licensing process, however, there's a lot of interaction at the industry level between the design centered working groups and others on standardization beyond licensing; down to the component level detail, down to the operational programs.

For this program for standardization to work it's got to start from the top. I know, and Chris will speak to this later, that at NPOC that has been a key issue and there has been a consensus agreement that we will standardize going forward. That's the only way this is going to work.

Let me turn to the level of safety. This is not so much an issue, but a

topic of concern. Back in the late '80s and early '90s when Chris and I were still in high school the Commission issued a policy statement on advanced reactors.

The expectations that were laid out in that policy statement were the new designs would have substantially enhanced safety margins. And we think through the design certification process and the designs that have been submitted to the agency for review, the industry has met this commitment either through the addition of trains, safety trains to certain designs or through the utilization of passive design features.

It's clear that these new designs are substantially enhanced safety margins. But in the same policy statement, the Commission also said that we shouldn't use the industry meeting these design objectives as a basis for new regulatory requirements.

We have to have the same regulatory requirements whether they're the current set of plants or the new set of plants, for the most part and Part 52 references Part 50 as the technical requirements.

There's been some discussion early on about perhaps changing some of the documents associated with risk informed activities, Reg Guide 1174; perhaps looking at -- even in that policy statement there was a decision not to change the quantitative health objectives to ten to the minus five core damage frequency versus 10 to the minus four. The Commission

said no and we agree with that decision.

There's obviously going to have to be some adjustments made going forward for new plants. For example, the Mitigating Systems Performance Index and the Reactor Oversight Process. Clearly, that's not going to work very well in the passive designs like the AP1000 and the ESBWR. So, we will have to make adjustments.

But with respect to the risk informed activities, the significance determination process, Reg Guide 1174, we think that those guidance documents are fine and should work very well going forward.

Next, let me turn to implementing the PRA requirements for new plants. That is a different requirement for the next generation of plants. In the final Part 52 issued last year there is a requirement for the license holder to have a PRA that meets the standards endorsed by the agency one year prior to core load.

One lesson we've learned throughout risk informing the regulations is that when a new standard comes out, there is a need to pilot that standard in an application before the NRC issues its final endorsement of the standard.

We've got that experience through the first PRA standard that was issued, the ASME level one internal events at power. That was, I think, issued by ASME in 2001.

There was a draft Reg Guide that endorsed that standard, but with the provision that we were going to pilot this through several applications which the industry did, got the lessons learned from that pilot program, got them back into the standard and back into the final Reg Guide that endorsed the standard.

That process took about five years. And that was with an area of PRA that we know the most about, where our state of knowledge is the best. We're learning the hard way right now with fire PRA. That standard has come out, but we move forward mainly to address the transition of NFPA 805 to develop fire PRAs and really the two pilots are piloting that standard and we're seeing some issues.

We think we're going to have to restructure that effort in order to get the lessons learned back into the standard and the methodology document, NUREG 6850.

Before the NRC endorses that standard final such that when a licensee does a fire PRA, they do it once and they do it right the first time. Given that, we think before, again, the Commission endorses a standard that will be a requirement for new plants that those standards need to be piloted first.

The other aspect of this and because we've been able to incorporate the lessons learned in operating experience from the first 30 or 40 years of

plant experience, there may be some elements of the PRA that won't be particularly relevant going forward in the new designs. I'll use fire as the example again.

The separation is so good with the new designs that we've pretty much designed out fire risk for the new plants. So, the value of modeling and doing the fire PRA for a new plant may not be there.

So, it's something we have to look at in implementation going forward less we devote resources to things that are really so low in the risk spectrum that it's not risk informed regulation, its more risk deformed regulation. It's spending time and resources on things that don't matter.

Finally, I wanted to mention supply chain qualifications. Worldwide there may be as many as 90 nuclear projects going forward. Chairman, we know you bring this up in most of your speeches.

We've been working with NUPIC, the Nuclear Utility Procurement Issues Committee, to improve the guidance and training associated with quality assurance audits of vendors and suppliers.

There's going to be a real focus on fraudulent parts and substandard materials. We can't afford going forward to have those turn up at our plants, let alone at some of the other plants that are going to be built overseas.

NEI has a huge effort ongoing on infrastructure, both the supply chain and work force. Most recently we sponsored manufacturing outreach

forums; one in South Carolina that Steve attended, the latest one in Ohio and we have another one coming up June 3rd in Houston, Texas where Chris is going to speak.

I'll offer a standing invitation to the Commission to attend one of these manufacturing outreach forums. We've had over 300 vendor representatives at each of the first two, overflow crowds.

One of the things we're thinking about because nuclear quality assurance is different really than everybody else's, we need to export what we do at our plants to the vendor so that they know coming in what the expectations are going to be and so that nobody's surprised and we're finding either fraudulent or substandard parts.

With that, let me turn it over to Chris.

MR. CRANE: Thanks, Tony. As Tony said at the beginning, I'll give a little bit of a wrap up, restate the industry priorities going forward and talk a little bit about some of the accomplishments. We think there are many positive that have occurred since we've last talked and give a little bit on conclusion.

Looking forward to the next decade, our top priority from the industry is to run what we have safely and reliably. We know there's not a new plant in the future if we can't maintain our current fleet.

We're going to be focusing -- putting our prime focus on the projects

that will be completed in the next 10 years. As far as the NPOC, the industry oversight group, we're committed to ensuring that we have high quality submittals being presented to the staff and in cases where they're not, we intend to continue to police ourselves.

So, the communications between us and the staff on the quality and timeliness is imperative. We have established a process with the staff on responding to RAIs. We're in the testing phase of it right now.

What we're looking at is trying to be back with the quality response within 30 to 45 days and then having the process in place that if it's applicable to others that they will be automatically incorporated into the other filings so multiple RAIs would not have to be submitted to the staff to the different licensees.

While we support the DOE funding for the development of the gas cooled next generation reactors, our primary focus is going to be on the near term and the projects, as I said, in the next 10 years.

Covering a little bit on the going forward, we are transitioning our focus or evolving our focus now to finalizing the understandings of the COL implementation processes, construction inspection, ITAAC close out, process for authorizing fuel load, plant operations.

We think that the public interactions, the public meetings we've had with the staff have been very constructive and the draft guidance that has

been coming together is well informed and continues to be constructed.

One area where we continue to have dialogue on is under the methodologies and the guidance we can put in place for monitoring the safety conscious work environment in the performance identification -- problem identification resolution process. I'll cover a little bit about that in the future.

We believe that we've made good progress in the current operating plants with the safety conscious work environment understanding safety culture. What we're recommending is that we would stay to the more traditional indicators for the new plant construction until we can evolve the tools and the metrics to be more applicable.

When we say "traditional", we would like to stay within monitoring quality rejections, monitoring inspections, monitoring problem identification and also doing trending on the NRC's inspections as well as the utility inspection.

So, we're working on the guidance for that, the implementation guidance and we'll continue to stay in communication.

The ITAAC closeout, I think we're in mid term in understanding the process. It is going to be a very complicated process. We want to make sure it has predictability and balance, but we understand the footprint that has to be under way. I think the dialogue from what we hear on our side is

constructive, but it's in process.

One area that we're starting to delve into more now is understanding the fuel load authorization process. We appreciate that the Commission has expressed a preference to use formal procedures versus an informal process.

We just want to make sure that it's something that we can understand and predict as we come up to the completion of the work activities signaling our readiness for fuel load and having it be able to be scheduled and predictable.

Moving to completing rulemaking. We talked a little bit about Part 73 and we understand the complexity with the rulemaking. We would appreciate, as Steve said, consideration for review in parallel with the templates.

One place where we believe that's working well is on the aircraft impact analysis where we have the designers doing their work in advance of the rulemaking coming out.

We appreciate some of the complexity on the staff and on the designers that are doing it at risk, but we think in these first couple of issues that we're working through it is a more efficient methodology that could be expanded.

On waste confidence, the current wording may be adequate, but we

do believe that a stronger regulatory basis could be presented with the waste confidence rule and we know that's under consideration, but we strongly endorse that. We think it would simplify some of the complications that the utilities are up against right now is within their board rooms.

So moving to conclusions, as I said, we do recognize some of the challenges going forward with the parallel reviews. We do appreciate that and whatever we can do to maintain flexibility or help with that we'd be more than willing.

One area that we have seen since our last conversation -- it was a point in our last conversation was how do we integrate our schedules in their massive databases that have many man hours and activities in them?

We want to continue to maintain predictability for the staff resources and for the licensee and the EPC. We're seeing some good work in communications with the TVA Bellafonte project that's sharing the scheduled milestones in some of the upcoming events.

We think we can grow on that on both sides and continue that dialogue, we find it as productive.

The last point. We do believe and we compliment the staff. There has been excellent communications in the area of public communications in the public meetings. We think it's hitting the right balance.

We share our appreciation for the willingness to work through the

process in that manner. We know sometimes it may be harder to resolve issues that way, but having the input up front and having the public meetings is beneficial. Thank you.

MR. PIETRANGELO: That concludes our presentation.

CHAIRMAN KLEIN: Thank you very much. I think there has been a lot of work that has been undertaken both by industry and our staff and so progress is occurring and obviously the position for which Bill is about to leave, starting up the Office of New Reactors has been very dynamic and I think we have a team that's in place that's doing what I have told our congressional oversight. We're hiring. We're training. We're ready. And so I think progress is occurring.

We'll begin our questions with Commissioner Lyons.

COMMISSIONER LYONS: Well, first, thanks to all of you for a good briefing. Before I get into a couple of specific questions, Chris, you mentioned the waste confidence. I would just comment that as least as far as I'm concerned we have clear guidance to staff that we do wish to move ahead with high priority on a review of waste confidence rulemaking. So, I certainly have very high hopes that that will continue on track.

A couple questions that I'm not sure to whom I should address them, but just curious on the extent to which you folks see good alignment between your view of key issues and staff's view of key issues.

You've referenced a number of ongoing meetings and interchanges with staff. I hope that's leading to good alignment on these issues, but any comments you'd like to make on that.

MR. PIETRANGELO: That's been our experience thus far. I think all of us have noted the good communication both ways on issues. I think everyone has rolled up their sleeves. Again, we've been on this learning curve where the guidance was relatively new and we're trying to work through the different interpretations and such.

The feedback we're getting from the COL applicants and others is that the process is working and it's getting better.

MR. CRANE: I would agree.

MR. BYRNE: I would echo those sentiments and I think the process we have set up now where the NRC is prepared to address issues with us at the new plant NPOC meetings and at the new plant working group meetings has been very fruitful.

COMMISSIONER LYONS: I was curious of the various issues that you've outlined. Are there ones in particular that you see as being ripe, perhaps is the right word, for Commission level action? Or at least as you were talking, I got the impression that the issues you outline, perhaps all of them, are still being actively discussed and explored at the staff level and they're not necessarily at the level where you're asking the Commission to

try to move forward directly.

MR. CRANE: I don't feel that we have anything that we're dead-ended on that needs to be elevated. I think the conversations are constructive. The staff might have, when they present, a different opinion, but I think --

COMMISSIONER LYONS: I was going to ask the staff, too.

MR. CRANE: I think everything is in process and in communications. We made our points about potentially looking at the Part 73 reviews and some of the other things for consideration, but we're also having those with the staff.

MR. PIETRANGELO: That's the one I would cite, the Part 73. That one caught us a little bit off guard. There was a lot of interaction in developing an approved template for the submittal that was targeted at hitting the mark when the final rule came out, at least with respect to the incorporation of the orders post 9/11 in Part 73.

So, when that was suspended that took us a little bit by surprise. As we recommended before, we think there will be a lot smaller delta to close if the reviews were done in parallel against the template and then the applicants would supplement their applications with whatever information was necessary to close the delta at the end.

COMMISSIONER LYONS: Maybe the staff can address that

one.

MR. PIETRANGELO: There has been excellent interaction in commenting on the Regulatory Guides and we appreciate the final draft language being put out at the same time that the draft Regulatory Guides. That helps the review process along.

So, we've got a lot of resources devoted to working with the NSIR folks through our comments on Reg Guides and trying to meet the timelines. I think its 30 days in most cases for commenting on the Reg Guides and that's pretty tough for us.

We've got great support from the companies to try and get our comments together.

COMMISSIONER LYONS: I do appreciate the picture that you've painted of strong cooperation, admittedly each in their own appropriate regimes, but strong cooperation with staff. And a good working relationship which is certainly positive.

I guess because of that, I'd like to maybe depart from your prepared comments or maybe read a bit into one of the comments that you made, Steve. And go to a subject of pet interest of mine.

You talked about construction decisions would be based on a number of different considerations and you listed several, but you didn't list work force.

I'm one of several members on this side of the table who have expressed a lot of concern on the work force, not only as it affects our ability to hire appropriate people from a regulatory perspective, but speculating that the whole nuclear industry is facing a tremendous challenge on work force.

I know there's a number of initiatives ongoing within industry, but I was just curious if any of you would want to speak to either those initiatives or your view of the challenge that we're going to be facing on work force from the perspective, I would say, first to the operating plants and second of new construction and new plants. I truly see this as a gigantic issue facing the Nation.

MR. BYRNE: There's no question that work force, whether you're talking about the nuclear industry or any industry is going to be a bigger deal to us going forward. I think the initiatives you've discussed probably just touched the surface of what we're doing at our individual utility levels. We're developing work forces now.

We are literally hiring training instructors and operators now for plants that are not going to come on line until 2016 or '17 or a later time frame. So, we see the challenge today. It's not really a challenge that's that far out in front of us.

Probably being in the Southeast, I may have a better advantage with

weather that the people like to come to the southeast as opposed to some other areas of the country, but we do today on construction projects on non-nuclear side when the weather turns better up North, we see people that want to leave.

Obviously, our challenge is going to be to train the work force, to attract the work force to nuclear projects and then to retain them once we start the work.

The modular construction is going to make things, we think, a lot easier where you're building modules at a single place and shipping them to different locations. And again, the vendors and the constructors are going to play a large hand in that.

So, much of the workforce issues we're going to have to work hand-in-hand with folks like Bechtel and Shaw to construct the plants. It's a concern. I think it's a concern that we can manage.

Obviously, in addition to just getting the work force, it's what you'll have to pay that work force is another big issue. That's a cost driver. We think the work force is going to be there. Most states have got a technical school program. They're ready, willing and able to support us. We're spinning those up now.

MR. CRANE: I would just second Steve's comment. It is a huge task in front of us, but I think we understand the staffing requirements.

We understand our staff up curves. All utilities have relationships that they're developing in the local areas for the schools as Steve said.

Just for our current plants, we're hiring approximately 600 new employees a year. We have a fairly robust recruiting methodology and network now. We're slowing our aging. We used to age about 5/8 of a year per year. That's actually slowing now.

As we look at the individual plants, we understand we'll need our simulators when operator training will have to take place in the 2012 time frame. So, I'm not dismissing the comment, but I think it's something that we're out in front of and we have not had a problem in hiring adequate recruits to this point.

MR. BYRNE: Another thing that we're doing on a utility by utility basis is looking at our total construction over that time frame and we're scaling back on other construction processes, so those resources would be more available to us at nuclear.

And today we take advantage of people that are internal to the company, but not nuclear that we rely on to come and work nuclear outages. So, we'll tap into that resource, also.

COMMISSIONER LYONS: Do you have anything to add, Tony?

MR. PIETRANGELO: We could do a whole briefing on what

we've got going on.

COMMISSIONER LYONS: I know you've got a lot of initiatives. Just as a comment, I'll be speaking tomorrow to the first graduating class at Cape Fear Community College in Nuclear Technology. That's just an example of the kind of partnerships that the industry has been working to pull together, which I think is very, very positive. I just hope it's sufficient.

We'll see if your optimism is justified.

MR. CRANE: It's cautious optimism.

COMMISSIONER LYONS: You did have my interest up, Chris, when you said you had a process for slowing the aging, but then you went on to qualify it and I was disappointed.

MR. CRANE: No vacations. Just keep working.

COMMISSIONER LYONS: Thank you very much.

CHAIRMAN KLEIN: Commissioner Svinicki?

COMMISSIONER SVINICKI: Thank you, Mr. Chairman. I'd like to start out by saying, Mr. Crane, that I appreciate you began your discussion on your industry priority slide was something that wasn't actually on the slide. You said the highest priority is that we run what we have safely and reliably.

I think that can't be said enough. So, I appreciate you starting with

that. I would recommend it be on your slide because I think it's that important.

Your second priority, you said, is high quality submittals. Again, that's something that I can't hear often enough because I think that you recognize that that's your obligation and in order to make possible what the agency staff is committed to undertake on the schedules they've committed to undertake it, that's absolutely essential. So, I appreciate those two comments.

I know these briefings are periodic and so I'm stepping in to the middle of a dialogue here that's been going on between the industry and the Commissioners. Mr. Byrne, you commented, you said that this is a process in your instance that will start in 2005 and if successful would conclude in 2016. That's a very long period of time.

I'm wondering if you or any of the other panelists would want to comment on whatever stage in this process that you're in, what do you appreciate afresh or a few years into the process, what are you struck by and what are you emphasizing to yourself in terms of now being involved in a process as opposed to maybe your expectations when you began?

MR. BYRNE: I think when I began I had a hope that we could supply much of the commodities, parts, materials from domestic sources and that's just not true. The global economy is a reality for us perhaps even

more so than some other industries in this country.

So, a good portion of the particular long lead materials are going to come from overseas. So, we're really dependent upon economies in other places as opposed to the U.S. economy for this.

I think as we've moved on this process, we have convinced ourselves more and more that nuclear is the right choice as opposed to some other options that we've been facing. And I've been heartened by the support not only at the Federal level, but certainly the state level for nuclear and rather than everybody I talk to telling us we shouldn't do it, a good portion of the people I talk to ask us why we've taken this long.

MR. CRANE: I think just focusing to expand. We believed at the beginning that the only way for us to do this wave of plants efficiently was to stay standardized within our classes.

There was a great deal of conversation in the last couple of years to do it and it actually is working to our surprise. I was involved in the '80s when we're building the plants and no two plants were the same and you couldn't get engineers --

COMMISSIONER SVINICKI: That was when you were in high school?

MR. CRANE: That was when I was in high school, yeah. You couldn't get engineers internal to companies that were building like units to

agree to make them alike.

I think it's rewarding to see that we're staying together. I think we just need to continue to police ourselves to ensure that we don't deviate from that.

COMMISSIONER SVINICKI: That's helpful and that's a good lead in, Mr. Pietrangelo. You had talked about vendor QA and vendor qualification. To follow on the comments we just heard, what is your general sense of how -- is that another steep learning curve that you talked about before?

What's your general sense of what you're finding -- you're getting a lot of interest at your workshops. But in terms of bringing people up to the levels they're going to need to be, where does that stand?

MR. PIETRANGELO: First, we're starting with an experience base that we didn't have before with the current plants. We went through a fraudulent parts issue in the late '80s. We went through industry initiatives to improve the validation and verification. It wasn't just kick the tires.

I mean, there's extensive industry guidance and documentation now available on qualifying materials that come into the power plant. So, we have that at the sites, but we've lost a lot of the vendors who used to form the supply chain, so we've got to kind of reinvigorate that process.

Nuclear QA is different than everybody else. We've got to get that

culture and that mind set out to some of these vendors who are coming to our manufacturing outreach forums and take the extra step to educate them on what it takes to be a quality nuclear supply vendor.

So, we've got their attention now through these forums, but I think the next step now is to export what we know we need to them such that they're not trying to hit a target that they don't know where it is.

COMMISSIONER SVINICKI: Thank you. Thank you, Mr. Chairman.

CHAIRMAN KLEIN: Chris, I always have to start off harassing you just to keep you on your toes. You talked about the COLs and how you're sort of peer reviewing those. Could you talk a little bit about how you do that among various utilities?

MR. CRANE: We have the different forums, NewStart being the largest where the ESBWR and the AP1000 are being prepared in groups, design centered groups and licensing groups. The templates were created and then the independent reviews are performed prior to submitting.

I've heard from -- those are the ones we're most associated with -- we've heard from NewStart -- excuse me, UniStar that they will be performing those the same way on an independent review and the same for Mitsubishi. We believe all the primary players are covered with that. The largest mass being in NewStart, but the others are following the same

methodology in the submittals.

CHAIRMAN KLEIN: Are you finding any challenges in terms of the ESBWR because what we expected -- the way the system was supposed to work was we would have a design cert finished then the COL would come.

So, obviously, you're having to do the COL on the ESBWR before the design cert is completed. Has that given you more challenges than you had expected?

MR. CRANE: Surely, it is more challenging. The ultimate way is to have the design cert complete and then be able to go into COL development. I think we have enough steps in the process now that we're staying current as the design review goes through.

We've worked with GE closely on their next revision for the design cert and ensuring that we're incorporating all of those aspects that are relevant into the COL.

We're following the Dominion COL as the template for all the remaining ESBWRs. Not optimal, but we're working through it and understand that it will be nice once the certs are done and the COLs will come in based off of that.

CHAIRMAN KLEIN: On a different subject on waste confidence. The industry has expressed interest in that and we're going

through that process. What is your concern on waste confidence? Is it for the existing plants or for the new plants?

MR. CRANE: As I said, I think the wording may be judged to be adequate for the new plants. I think there's many companies and regulatory bodies in the state that want to make sure that it is affirmed that if we go forward on new plants there is a more robust worded rulemaking that clearly ensures or that we can ensure the public as the regulators can ensure the public they're not going to be stuck with the used fuel for the long-term; that the Federal government will make its requirement.

So, it's more of a stronger affirmation for us and we're not trying to indict the current wording for the current plants, but we think it's reasonable and it should be adequate to help us.

CHAIRMAN KLEIN: I guess this is probably a question for Tony. It seems to me that the biggest issue that I have on waste confidence is your standard contracts for these new plants. Do you have those in hand?

MR. PIETRANGELO: We've been eminent for about three months, Mr. Chairman, on the standard contract. Our expectation is that we will have those standard contracts very shortly.

CHAIRMAN KLEIN: I think that's going to be an issue that's going to impact -- at least for me personally, it's hard to have confidence in

that responsibility of the Federal Government if you don't have those standard contracts. That's out of our purview.

MR. PIETRANGELO: We agree.

MR. CRANE: I think we have our first sit down as an industry with the DOE next week; that we'll be meeting and reviewing their first cut on them.

CHAIRMAN KLEIN: I think for the existing plants, the dry cask storage, we keep hearing we will get an application soon then we will start a technical review. So, I think for the current fleet its okay, but I think if you look at that future fleet that's an area that needs to be addressed.

MR. PIETRANGELO: We agree.

CHAIRMAN KLEIN: I've got a question for you, Steve. You talked about modular construction, which I think is obviously very important. I am familiar and probably Chris is getting familiar with the Texas companies that do offshore platforms and do modular construction.

When you talk to those people they say that they need to have those detailed designs already to start the modular construction on the time frame that you need them. So, my question is are you already behind on modular construction to really capitalize on it?

MR. BYRNE: No, I don't believe so. My bigger concern with the modular construction is that we cite the modular construction locations;

that they be on deepwater ports with rail and/or truck or both access to the plants that they're going to serve. So, we're working very hard along those lines.

In the case of the AP1000, I don't want to speak for the other vendors, but our constructor, Shaw, has been involved with the detailed design with Westinghouse, particularly for the secondary side of the plant and all the ancillary components for probably three years.

So, they're part and parcel with the design and the design issues, so they've been working on this for a while. They're also gaining some experience from other projects; for example, the one over in China.

I don't think we're behind the eight ball, but I'd feel a lot better once the facility was sited and I knew where it was going to be.

MR. CRANE: There's been significant dialogue; speaking for UniStar. They're in negotiations and conversations with some of the ship manufacturers on the east coast. They're continuing to work through schedules and costs and methodologies.

The GE Hitachi organization has got the backing of the Hitachi fabrication facilities in Japan. Multiple companies including ours went over to look at the feasibility of the shipments. Most likely, there will be expansion to the states of some of these fabrication facilities, also to support the ESBWR, but its bringing experienced companies over and

partnering with others to be able to do it.

That's our conversations in Louisiana and some in Texas with other companies on partnering more than having them come up the learning curve on their own.

CHAIRMAN KLEIN: Are the detailed drawings far enough along on the ESBWR to start planning for the modular construction?

MR. CRANE: No, it's in the schedule for the 2011 time frame for optimization of modularization. There's already a clear understanding of some of the large modules because they're equivalent to the ABWR modules, but after the design is complete there's a methodology that Hitachi has that they do their optimization of the module design at that point.

There's a lot of things to be weighed; local wage rates, shipping requirements. There will be different module quantities in size for the Dominion facility versus the Victoria facility. The Victoria facility has a shipping channel -- a road is being designed right now right from the ship channel up to the site.

There will be the opportunity for more larger modules in that plant. The dominion facility won't be able to have that, so more stick building or on-site modular building would take place. There's an optimization based off of the need of the site and the design.

CHAIRMAN KLEIN: Thanks. Commissioner Jaczko?

COMMISSIONER JACZKO: I just had a couple comments to start; certainly on waste confidence and I don't know that this is a new discussion. I think we've had this discussion in probably the last meeting we had, I think, in October.

I think I recall at that time I suggested you all might want to do a petition for rulemaking. Maybe that would get in the process faster. You sent us a letter which was de facto a petition for rulemaking and we still haven't gotten your rule. So, I think at this point that's something we need to take a look at.

I don't know why at this point we haven't gotten farther along on a rule because I think it is an issue we need to address and we need to address in a rulemaking.

The Part 73 issue, in particular the issue of the security plan revision -- or the review of the security plans. My sense on that is -- my guess would be this is an attempt to balance resources.

The Commission has been very, I think, interested in having the staff accelerate the completion of that rulemaking and as a result that may be one of the decisions that was made was to focus resources in completing the rule rather than taking those resources off to doing reviews.

That's certainly an approach I would support. I think the schedule right now is for the staff to have something to the Commission by June or to

the EDO around June. We should be able to get a rule out sometime in the fall.

Now, you may hear dates of final publication of March of '09 or late '09. A lot of that tends to be the OMB review process; all of those things.

As far as having finalized text, I think we'll be able to have that by the end of the fall, which I think at that point we should be able to go back and begin doing a look at their views. I don't know that it makes sense to do that, certainly in the interim when we haven't finalized the rule.

I think from an efficiency stand point we're better off to wait. I don't think the delay is that long. It is something we need to get a move on and get resolved as we do with the waste confidence.

I'll have to say on the LWA I'm not quite as sympathetic, I think, to the concerns on LWA. The Commission's intention with LWA was to redefine construction to eliminate the need for Limited Work Authorizations. I think that was very much what the Commission was intending.

At the time, I certainly expressed some concern that we were getting ourselves into a position where we were going to be opening up a whole new avenue for hearing requests for complicated issues dealing with how we resolve environmental issues with the Limited Work Authorization as well as what's going on with the EIS that we will do for the overall COL application.

I think these are the kinds of things that we're seeing right now. As I said, I'm not quite as sympathetic as that and I don't think it's an area where our resources are best spent right now in trying to work through some of those issues.

LWA is an option for you. It's not a requirement unlike COL and unlike the Part 73 issues. Those are requirements you need to have in order to get a license. LWA is an option for you to try and accelerate some of the work.

As I said, I had interesting discussions with Commissioners Merrifield and McGaffigan at the time. When I suggested that we're opening up a whole new opportunity here for hearings and a whole new can of worms, so to speak, on LWA, they suggested the whole point was to redefine construction so that people wouldn't need LWAs.

Well, obviously, that's not turning out to be the case. I think that's a bit unfortunate. I haven't asked any questions yet. I think I will try to get to some questions with a little bit of time left.

Chris, you mentioned a 30 to 45 day -- sorry; I do have another question. Containment sumps. I know we're going to hear from the staff later on this and I know at all these meetings I like to try and focus on the areas where I think there's need for continued improvement in the quality of the submittals. I'm glad to hear that that's a focus.

I think we've seen that, that you are putting a focus on that. I am a little bit, I guess, concerned by some of the things that I read in preparation for this meeting about the difficulties that we appear to have in resolving the containment sump issue.

I was aware of challenges, I think, with the AP1000, but as I read some of the background material from the staff also for EPR. What they said was the application submitted in December did not provide information adequate to bring the sump issue to closure.

APWR also had a similar -- did not include information sufficient to bring a long-term cooling issue to closure. Maybe you could comment on what are the challenges.

This, in my mind, should be in the category of fire protection at this point. We are expending a lot of resources right now with the existing fleet to get a handle on these issues.

Maybe you can comment on why this is continuing to be a technical challenge apparently for the new reactor fleet as well?

MR. PIETRANGELO: It shouldn't be as much of a challenge for the new reactor fleet because there won't be any fibrous insulation used in those containments. That will greatly simplify --

COMMISSIONER JACZKO: Why is the information not in the applications then? What's missing?

MR. PIETRANGELO: There's still a lot ongoing on the current plants, unfortunately, that we're trying to bring to closure on the testing and the supplemental responses that are due this year in order for the staff to perform its final review to close the issue out.

So, I think a lot of the vendors -- there's still a lot of activity in play for the current plants and we're learning as we go with this. I think when we checked in on this issue prior to the briefing everybody knows what they owe the Commission.

They're working to a schedule. There's been good dialogue between the vendors and the staff on that. Hopefully we'll be able to bring to closure soon after we do for current plants.

MR. CRANE: We'll find out the specifics and get back to you to let you know. We knew there was an issue, but we haven't heard the other side from the vendors yet what was uncertainty in that and why they didn't put it in. We'll make sure we give you a response.

COMMISSIONER JACZKO: As I said, I do think that's important and my view on the existing reactor side is that this is an issue that we're way behind on. It is one where we had a meeting on Monday to talk about materials issues. It's one of the areas where I continue to see a lack of interest, it appears, in resolving some of these complex technical issues on the part of the industry.

With the sumps, I'm not quite so sure that your best defense was to point to problems with the existing fleet because I have some concern that we haven't gotten that wrapped up either. That's spilling over now into the new reactors.

That does cause me some concern because as I said we're starting from scratch here and I would think that a lot of these issues should have been able to be resolved and worked through in the submittals.

MR. CRANE: I will tell you that we've had discussions up to last week with the EDO's office on closing this issue out. We agree. We've spent over $1 billion in the industry to put these sumps in and it is an evolving science at this date.

It's not the willingness of resources to close this out. It's having a final definition of what it takes to close it out.

COMMISSIONER JACZKO: Well, I have a couple more questions. Chris, you mentioned you're working towards a goal or have a standard of 30 to 45 days for RAI responses. How is that working? Are you meeting that target?

MR. CRANE: We're in the test phase now. I was trying to get some data on that earlier. We believe we're getting there. We have to continue to monitor and have the metrics in place to say we're consistently doing it, but it's at its infancy and it's the goal. It's what we're monitoring

ourselves to, but I can't give you the results yet.

COMMISSIONER JACZKO: I'd certainly be interested and perhaps the staff may have a better idea, too, of what they're seeing if that goal is being met.

I certainly would echo the comments that the Chairman made about the importance of standard contracts. I think that's an important issue that needs to be resolved.

The last issue that I would comment on that I think the Chairman referenced in regard to ESBWR is the simultaneous design review and the COL application. I certainly agree with his comments that that is not how the Commission envisioned this process.

I would note that it's not just an issue with ESBWR, but effectively with all of the designs that we're dealing with, other than perhaps with the ABWR. We have a similar situation where either a large amendment or a significant amendment -- perhaps large isn't the right word – a significant amendment is being worked on for design cert or the design cert itself. It is, I think, an area that will continue to present challenges as we try and coordinate all these activities as we move toward.

Those were all that I had. Thanks.

CHAIRMAN KLEIN: Thanks. I think part of that on the design cert we probably were overcome by events that we didn't expect a lot of

things happening, increased base load, global warming concerns and those things.

We are where we are and we need to move forward to the extent that we can. I think from our perspective as Commissioners what we would -- the reason we like to have these meetings is if there's anything that needs to be elevated to our attention. I think you're having good communication with the staff and so I would encourage that to continue.

And as Commissioner Lyons indicated if there's things that need to be brought to our attention please let us know. Thank you for your presentations.

PANEL 2: NRC STAFF

CHAIRMAN KLEIN: While we're getting settled, I think for those of us that have been watching Luis in the halls the last few days, we've noticed he smiles more. He's bouncing.

We noticed that Bill is sort of like the deer in headlights look. Welcome to your final presentation as EDO, but I'm sure not your final presentation before us.

MR. REYES: Thank you. Good afternoon, Chairman and Commissioners. Before we start the presentation, let me just thank you for

your kind remarks. But I'd like to, if I can, reflect on your comments in a different way.

I have spent 30 years in public service, all of it with this organization and I came in as an entry-level inspector. So, I think for those who are watching, this is an organization where you can come in, take advantage of the training, the developmental opportunities, and there are many, and you can us aspire to move to the highest level position at the career level.

I'm an example of that, but I think it's because the agency has such programs in place that that could be achieved. So, thank you very much. Okay. I'll start the presentation. We want to update the Commission on the new reactor issues. If I can have slide number two.

We plan to talk to you about the accomplishments and our recent activities, the status of the new reactor projects and rulemaking, some selective safety and environmental technical issues and some potential schedule impacts. With that, I'll turn it over to Gary.

MR. HOLAHAN: Thank you very much. I'm here today because Bill Borchardt is learning how to be Luis Reyes. I'm going to cover a number of subjects just on an introductory basis and then we have three of our technical branch chiefs here to give the Commission some insight into the types of technical issues that we're dealing with in the design certification reviews.

The three selected topics, ECCS sump design, LWA implementation and operator licensing are issues of interest, but they're only three out of literally hundreds of issues associated with each design certification. So, may I have slide number four, please?

The first point I'd like to make is that we are in the process of doing acceptance reviews as you're probably well aware. We have nine COL applications. We've completed a number of the acceptance reviews and we're continuing on others. Tom Bergman will give more detail into the project status.

I think it's important that we are getting to the point where the acceptance reviews are a proven process. This was something recommended by Commissioner Merrifield's task force to take a little bit longer on the front end to do an acceptance review, but in the process not just decide whether we're going to accept it or not, but to get enough detailed information so that we can actually construct a plan and a schedule that we were willing to be committed to.

And I think that's working well. It's not perfect. In fact, it has turned up difficulties. There have been a number of cases where we weren't willing to commit to a specific schedule because the information wasn't available from the applicant, but that was important to get on the table early in the process as well.

So, Tom will talk about project status including our acceptance reviews. Brent Clayton will speak to Limited Work Authorization. In fact, he'll cover the issues that the industry raised just a little while ago.

We've also completed a number of environmental and siting audits and they're an important part of our siting activities. It is also an opportunity for increased interaction with the public at the local level. Can I have slide number five?

I just wanted to mention a couple of other activities that are ongoing and are important for the Commission's awareness. Vendor inspection activities are becoming important. I think we're developing a very healthy program.

You heard earlier that NUPIC is the industry's version of vendor quality activities. We certainly interact with those people and we use the results of what they do, but we're also finding that international cooperation is important and valuable.

You heard earlier that there'll be a lot of construction of parts, manufacturing of parts for new reactors in other countries. We have good working relationships with the regulatory authorities in those other countries and this is a very good opportunity to exercise those relationships and having them help us with our inspection activities and we can help them with their inspection activities as well.

Another thing that we've put in place is planning and scheduling tools at a level of detail well beyond what we've done before. I think it's interesting that you heard some comments on that subject as well from the industry and I think there's also a level of transparency that we've been willing to put out there.

Our original schedules, the first time through, they are not perfect, but we are willing to put them on the table and discuss them with the applicants to say, "If you don't like our schedule, where can you shorten something that you're doing or can do it in a different order."

We've been willing to have those discussions in a public forum and I think it's been a little risky in some ways of sort of putting our issues out there on the table, but it's been worth while doing and I think it's a healthy process.

With respect to issues of being capable to get the staff and have them available to do the resources -- to do the inspections and reviews that are necessary, I think that's an important issue. We've come a long way on that subject.

As of today, the New Reactor Office has 425 staff. We have 40 known additional staff to join us by the end of June. And so in fact, we'll probably meet our staffing level of 489 by the end of the year. That doesn't mean we spent 489 FTE.

We still have a challenge in the fact that those people weren't here for the whole year and we're going to manage that. I think we've come a long way.

In parallel with just hiring people, we're dealing with training and qualification and knowledge management tools. We are rolling those together in what we think is a healthy way.

What I'd like to do now is turn it over to Tom Bergman to deal with the new reactor projects. And I guess before I do that, just a second before I do that, I introduced Brent Clayton. Let me also introduce Chris Jackson who's our branch chief who will discuss the ECCS sump designs and Mike Junge who will discuss our operator licensing issues. Tom?

MR. BERGMAN: Thank you, Gary. As mentioned, I'm going to provide an overview of reactor project status as well as some other activities. Of course -- go to slide seven, please.

There are three types of application reviews we do in the office: early site permits, design certification and combined license reviews. For early site permits, we've issued three to date: for the Clinton site in March 2007, Grand Gulf in April 2007 and North Anna in November 2007.

We currently are reviewing one early site permit for Vogtle. That review also includes a Limited Work Authorization. We issued the Draft Safety Evaluation Report in August of 2007 and the Draft Environmental

Impact Statement in September 2007.

Our current schedule is we expect to issue the Final Environmental Impact Statement in August 2008. The Final Safety Evaluation Report schedule is currently under review due to some additional information needed from Southern, but we do expect to complete that late this year.

For design certification, the agency had already certified four designs before NRO stood up. The Advanced Boiling Water Reactor and the System 80+ were both certified in May of 1997.

The Advanced Passive 600 in December 1999 and the Advanced Passive 1000 in December 2005.

We currently are reviewing three additional design certifications: the Economic and Simplified Boiling Water Reactor, the U.S. Evolutionary Power Reactor and the U.S. Advanced Pressurized Water Reactor.

For all three of those design certifications, we've completed the acceptance reviews and we have issued schedules for both the ESBWR and EPR. We do expect to issue the schedule for the Advanced Pressurized Water Reactor next week.

The final safety evaluation dates for the Economic and Simplified Boiling Water Reactor are June 2009 and for the U.S. Evolutionary Power Reactor May 2011.

In addition, of course, the new -- the revised Part 52 allowed

amendments to design certifications. We are reviewing an amendment to the Advanced Passive 1000. We accepted that application and the schedule for its final safety evaluation report is March 2010.

Four combined license application reviews, as Gary mentioned, we have nine out of 23 in house. We have completed seven acceptance reviews and are reviewing the applications. Those are Calvert Cliffs Part 1, South Texas Project, Bellefonte, North Anna, Lee, Shearon Harris and Grand Gulf.

We have issued schedules for three of those to date: the Bellefonte for the Final Safety Evaluation Report of February 2011 and Lee also with a FSER date of February 2011 and then North Anna, which is an Economic Simplified Boiling Water Reactor design, in August 2010.

We have two additional applications currently under acceptance review: Vogtle and the V.C. Summer. Our formal acceptance review won't occur until June. Staff are available doing portions of the acceptance review now.

This is a case where the applicant gave us late notification of when the application would come in house and it simply isn't feasible to begin that acceptance review earlier. The earliest we can schedule the staff was beginning in June.

We also have Calvert Cliffs Part II under acceptance review. So, it

could be six and a half, two and a half, but I rounded up. Slide 10, I guess.

We've developed, as Gary mentioned, a number of tools to improve effectiveness of our reviews. About a year ago we issued Reg Guide 1.206 and we did a pretty much a complete update of the Standard Review Plan.

More recently we have implemented an electronic request for additional information workflow and database. This pushes the work through the agency electronically in terms of getting concurrences as well as it provides a database tracking of the status of all those including when they go to applicants and come back.

And of course, as any database, it has reporting features on how the work is progressing. We have a tool known as The Wizard, which is a knowledge management tool. We have developed SER templates for both the Advanced Boiling Water Reactor and the Advanced Passive 1000 and we're going to develop templates for the other two designs.

These templates provide a lot of the boilerplate for the reviewers as well as give a standard format so that the SER has a consistent look and feel within a design center.

We have what's known as ADAMS Explore. This is a web based ADAMS and the way the applicants are submitting the applications is the combined license application is hyperlinked extensively into the design certification application.

With web based ADAMS, it almost appears as one continuous document. You can go between the two seamlessly. It's a big advantage for the staff. All these tools and EPM are integrated together through what is known as SharePoint, which is a virtual desk tie up that has all the tools available as well as some other features like a collaborative work space.

Of course, as Gary mentioned, we're using the Enterprise Project Management System, which isn't only a planning tool. Part of the power of the system that we are really just beginning to appreciate is in terms of project performance management, understanding where problems are occurring so we can identify and bring resources to bear before it becomes an issue in terms of achieving schedule.

These tools all together do help us focus on safety by insuring that not only have we planned the work out well, we can have enough resources to do a thorough job.

In terms of execution, as noted, we've completed all acceptance reviews and all other major milestones have been met by the staff. We currently hold weekly design centered based project performance meetings. These focus on critical path and other at risk tasks that could potentially slip schedules.

We have greatly increased the project status information and project risks on the internal web site. And we continue to look for ways to get

better.

Over the summer we will be offering all the project managers and management a course specific to the use of project management tools like the Enterprise Project Management System in monitoring and measuring and improving performance on projects.

We are also looking and we've asked industry to help identify metrics of interest to them as a way to convey project performance internally and externally.

As Gary mentioned, we have worked, I think, very hard to enhance the openness and transparency of our project execution. We have made public detailed resource and schedule information.

We are rolling those out for each project as they're ready and these are very detailed. This is a dump out of EPM down to the task level. It includes not only the tasks and the resources projected to accomplish the tasks, it shows start and stop times. It shows baseline schedule versus actual schedule; actual resources percent complete. It's a fair amount of information that we're going to put out there and we'll keep it up-to-date. We expect to probably update those schedules monthly.

Again, when we can get some good performance metrics developed, we do plan to make those publicly available as well. Additionally, we are going to revamp our web site.

From public outreach meetings we've gotten feedback that it's hard to find -- if I live near Bellafonte, I can't find Bellafonte. So, we are looking at how to not only improve the ease of access to the applications, but the content, the consistency and the organization of that website.

We hold really an incredible number of public meetings both near the sites related to both the environmental and safety reviews as well as here with public and with industry.

For the status of key rule making activities and I'm calling them "key" because all three of these have the potential to impact either design certification or combined license schedules.

The aircraft impact rulemaking. We're currently resolving public comments. We do expect to go to the ACRS in July, with the draft final rule to the EDO this September.

The Security rulemaking, which was mentioned earlier, we have a draft final rule going to the EDO this June. We are currently preparing the guidance documents associated with that rule.

As noted, we did decide to defer the reviews of the affected portion of the COLAs until the rulemaking and guidance were final.

I understand there's an urge to keep moving forward with the reviews and as a project manager that's my natural inclination. When we met with NSIR -- if you say the end in mind is to issue a complete Final Safety

Evaluation Report against the requirements in place at that time, we considered that this approach has overall less risk to the projects than potentially deferring work on that rulemaking and doing some template reviews.

It is the same staff who would conduct those reviews who are doing the rulemaking. We agreed with NSIR that the best course of action was to focus the resources on the rulemaking and guidance and get that complete and then do the reviews rather than do reviews and work on the rulemaking as resources were available. So, both approaches can work.

I think the key date for us is if we have an effective rule by March 2009. We think it's extremely unlikely that this would impact any Combined License Review schedule.

For the design certification rule making process this is of course a Lean Six Sigma initiative in the agency. We are looking for enhancements and policy changes that can expedite that rulemaking or change the timing of the start date so that the finish date moves up.

It isn't necessarily that we'll have to start the rulemaking after the Final Safety Evaluation Report is issued. There may be some ability to overlap those two processes, for example.

The need for this is right now in most cases the design certification reviews are driving the schedules of the first Combined License Reviews.

So, again, in conclusion we have a lot planning and review tools. We think they've been beneficial to the staff. They insure that we have the resources to perform a thorough safety, environmental and security review.

We've met all scheduled commitments to date and we continue to develop infrastructure to support the new reactor reviews. Good infrastructure is critical to our success. With that, Chris?

MR. JACKSON: Good afternoon. My name is Chris Jackson. I'm the Chief of the Containment Systems Branch 1. I'm responsible for PWR reviews.

I'm here to talk about one of the many interesting technical issues under review. We've gained an enormous amount of history, knowledge and experience over the last 20 years on this and related issues and we're bringing that all to bear on new reactor reviews.

We've got four design certifications under review. The AP1000 amendment includes a new sump strainer design as well as the ESBWR, EPR and APWR are all design certifications that will have to address this issue.

In this presentation I will touch on our knowledge, capability and guidance that we have available to do the reviews, the level of detail in the original applications and how we're managing that, as well as our coordination efforts. Can I have the next slide, please?

10 CFR 50.46(b) addresses long-term cooling. This is the regulation that covers this as well as the general design criteria on containment systems and emergency core cooling systems which rely on recirculated water.

Reg Guide 182 Revision 3 addresses long-term sources of water and at a high level covers all the issues we know about the sump. This guidance has been augmented with more detailed guidance in a number of areas in the recent years.

Reg Guide 1206 covers the applications -- contents of applications and it specifically directs applicants to address this issue. With the experience we've gained over the recent years we feel that we have the capability to review any new reactor design; active, passive, boiling water reactor or pressurized water reactor.

As we all know, this is a very difficult issue. It's got large uncertainties; however, new reactors are better suited to address this issue. They have option of choosing materials to go into containment, insulation, coding.

They can always choose materials to minimize debris generation and take steps to minimize debris transport and they can maximize the surface areas of the screen. Unfortunately, the first applications were not adequate to bring the issue to closure.

We received a lot of information over recent months. I can give you a couple of examples. Detailed design information on the sump strainers, assumptions associated with the head loss weren't supported by data and key aspects of Reg Guide 182 Rev. 3 weren't addressed.

We received a good deal of information over the last two months and we've got schedules for the remaining information that we need and we are scheduling those reviews accordingly. So, that's good.

The information we don't have, though, is pushing some of the schedules out. So, some of the information that we're awaiting does have schedule impacts.

The last point I want to touch on is innovation. We see a number of designs taking innovative approaches, which is good. We have a unique trash racks. There's passive designs. Refueling water storage tanks and containment. Each of these have benefits, but we will be challenging the staff to do a detailed review on that. Move to the last slide, please. Slide 15.

NRR is doing a number of reviews in relation to Generic Issue 191 and they're learning things on a day-to-day basis. We're working very hard to make sure that we stay in tune with them. We meet with them regularly. We make sure that we have the same knowledge they have. A lot of coordination going on there.

Additionally, we're working with Office of Research and the Office of Nuclear Reactor Regulation, lessons learned from the closure of GSI 191 that's incorporated into new guidance.

Additionally, we're working to maintain -- remain aware of what our international counterparts are doing. For example, at a recent MDEP meeting or Multinational Design Evaluation Program meeting, we discussed the EPR design and some of the things our foreign counterparts have done there.

Additionally, on a recent trip to Japan the sumps were described there. We sent some questions related to the new reactor sump designs.

So, in conclusion, I wanted to point out we feel we have the capability and knowledge to review the new reactor designs. Although the level of detail in the original applications was inadequate, we feel we are managing that by scheduling the information and scheduling the reviews appropriately.

We're working hard to remain coordinated with all our other counterparts who are knowledgeable about this and we're going to move forward with safety focus design certification reviews.

That's all I have. I'm going to turn it over to Brent.

MR. CLAYTON: Thank you, Chris. Good afternoon, Chairman and Commissioners. I'd like to talk to you today about three implementation issues that we've identified with the Limited Work

Authorization or LWA rule.

I'm one of three Branch Chiefs that's responsible for doing all the environmental reviews and Environmental Impact Statements for the new reactors.

The former speaker, Mr. Byrne and Commissioner Jaczko, stole part of my thunder on the separation issue, but I'd like to go through it briefly anyways just to make sure everybody understands.

One of the significant changes of the LWA rule is the new definition of construction, which is consistent with our statutory authority. It's limited to things that are directly related to radiological health and safety or common defense and security.

There are some things that came out of the rule that I don't think we fully understood when we issued it. The first one is the separation.

A definition of construction, just to set everybody on the same wavelength here, those things are construction I talked about, but everything else is called pre-construction in the rule. Even if it's going on at the same time as construction, it's pre-construction and construction.

While this definition came about as part of the Limited Work Authorization rule it really affects all the applications even under the old Part 50 process for construction permits, for combined operating licenses or for early site permits. Slide 18.

The way this issue of separation came up is the new rule requires applicants to submit in their environmental reports a description of the impacts -- the environmental impacts of the construction activities and to include the impacts of the pre-construction activities so that we can consider them in our review -- the cumulative impacts which is required under NEPA and under our regulations.

In some areas, doing the separation is fairly easy. We issued some interim staff guidance on April 8th for public comment for 60 days. I expect when we get comments back from that we'll have a meeting with stakeholders to try to work through those issues.

In that guidance there are some areas where it's more difficult to separate the impacts; socio economics, for example. If you have part of your construction work force is working on construction and some are working on other things you've got to build a new school for their kids. It's kind of hard to separate exactly how you do that.

In our interim staff guidance we went along with the principles of NEPA and the NRC regulations. The level of detail that you need to discuss these impacts should be commensurate with the level of the impacts or the significance of the impacts.

In the past we've found that the significance of the impacts in most cases have been small. So, our guidance to the industry or our draft

guidance is that doing a rough estimation to separate these activities such as 50/50 or 70/30 is probably good enough in most areas. We don't think it's going to be a huge effort to do that.

Although I'm a little surprised at the half a million dollar estimate by the industry. Anyway, we'll continue to work through that. If I could go to the next slide, slide 20.

The second issue is applicant interactions with other permitting authorities. Again, some of those are really easy, some are more difficult. Under the Endangered Species Act, for example, for projects that are funded or authorized by government authorities -- by Federal Government authorities, they go under Section 7 of the Act.

If it's a private activity that doesn't have government funding or authorization then it's under Section 10 of the Act. So, that's a place where clearly the industry can deal with the Fish and Wildlife Service and whoever and take care of those issues without our involvement.

With the Army Corps of Engineers, though, it's a little different. When one of our applicants approached the Army Corps of Engineers and said, "We want to build a barge slip and a haul road." The Army Corps of Engineers said, "Why?" They said, "Well, we're going to build a power plant; probably a nuclear power plant." They said, "Well, we need to see the whole project. We have to do an Environmental Impact Statement on

the whole project. We don't have that budgeted. It's going to take us a long time to do it."

So, we're working with the Army Corps of Engineers to try and update our 1975 MOU, which doesn't even address Part 52. It's just got the old licensing process.

I'd like to thank Carol Bernstein from the Corp for being here today to support our meeting. She's the staffer who's been assigned the lead for helping us update that MOU.

They recently requested to be a cooperating agency in our Environmental Impact Statements and we're considering that and we're working our way through that. It will probably work out, but there's some questions that we have to get answered first. OGC is helping us work through some of those issues.

The Corps has indicated that if they are a cooperating agency with us, they think they can support our review schedules, which will be, I'm sure, a benefit to the applicants.

They probably will require additional details in the applications that we wouldn't be requiring otherwise for the Corps to have the information they'll need to issue their permits, but its information that the applicants would have to provide to the Corp anyways, so I don't think it will be an extra big burden for them.

We are meeting with the Corps again in about two weeks to continue our discussion on how to revise the MOU and how we move forward on this.

And the third issue is the schedule. The industry asked us if they submitted an LWA application if it would impact or how much it would impact their application for a combined license.

We said we don't know, but if you tell us in advance so that we can work it into our schedule and our resource model, we don't think it will have much impact. If you spring it on us at the last minute and we don't have time to build it into the schedule it may have some impact and we'll address it on a case by case basis, especially if in those cases we're resource limited.

And that was the end of my prepared remarks. If there's no questions now, I'll turn it over to Michael Junge to talk about operator licensing.

MR. JUNGE: Thanks, Brent. Good afternoon. I'm Mike Junge. I'm the Branch Chief for Operator Licensing and Human Performance. I'm here this afternoon to talk about operator licensing for new reactors. Next slide.

Over the past year we've held several meetings with industry, INPO, NEI and stakeholders to discuss operator training and licensing. From these discussions we've created this time line.

If you consider the earliest COLA we're somewhere in the minus 80, minus 79 month time frame. As you know, to load fuel we have to have licensed operators. To accomplish this we have to have several things occur in parallel.

For the industry, the applicants must train the operator instructors, procure a simulator and develop a training program for new reactor operators. Licensed operator training will begin approximately 42 months prior to fuel load.

The plant reference simulator is required for operators to be examined and we expect that to be available approximately 22 months prior to the fuel load.

For the NRC, we must train and qualify licensed examiners for new reactors and we need to develop a training qualification program for the examiners and procure simulators as well.

So, we're working on an information paper for you that will explain our approach to the training qualification of inspectors and examiners. Next slide, please.

Existing regulatory guidance addresses the training and qualification needs of licensed operator candidates for operating reactors. Current regulatory guidance doesn't address the situation when the plants are not operational or under construction.

So, cold licensing is a process used prior to fuel load that will provide a consistent method for operations personnel to acquire the knowledge and experience required for licensed operator duties following construction.

Both NRR and NRO operator licensing branches have met with NEI, INPO and the industry numerous times to discuss the licensing and training of personnel necessary to operate the new reactors. The need for efficient and effective operator training will be necessary.

The interactions have been very positive, very productive and the staff is currently reviewing a technical paper on a cold licensing process submitted by NEI.

This paper covers areas in which consensus between NRC and NEI and industry have been reached and they include overall operating crew experience.

There will be two operators with previous operating experience on each crew and also documentation of experience for each individual used to meet the cold license eligibility requirements.

The time spent obtaining experience prior to licensing must be meaningful and consistently calculated and the final determination will rest with the NRC. Next slide, please.

The industry group members requested that we continue to meet and discuss exams and how they'll be handled for digital control rooms. The

discussion topics included how many general fundamental exams to administer; do we have multiple utilities; take one examine at one area; how to handle digital failures, et cetera.

Following a visit to Halden with the colleagues from Research and TTC, the ham lab which is a digital simulator control room, we identified several additional issues that need to be discussed.

The first is the communications are different at digital control rooms. The operators are sitting at computer monitors rather than walking around to the different control room panels. One operator won't know what another is doing on his monitor, whereas the old control room, if you walk to a panel you know what systems are on the panel, so, you knew which manipulations he was performing on what systems.

Also, oversight by the control room supervisor is different for the same reason. He won't know what screen or the systems that the operators are manipulating. The alarm handling is much different as well.

So, we need to evaluate these from a human factors standpoint as well as an operator exam standpoint. The group is really interested in getting these exams done right. Next slide, please.

We're heavily involved with the TTC, NRR and the regions in determining examiner trainer and qualification needs as well as simulator needs.

We've entered into discussions with the industry, Westinghouse, GE and GSE, for example, for simulator market research. Our plans for digital control room simulator training involve three options.

The first option is to purchase the second simulator of each design off the shelf from each vendor. These would be copies of the simulators made for their first customers.

The second option would involve purchasing simulation models and services to have the models work in a common NRC hardware/software environment.

The third option would involve contracting training services so that our examiners and inspectors would train at vendor facilities.

For examiner training and qualification our current plans are to continue our discussions with NRR, regions, TTC and the industry on how the exam process might change and in cooperation with the TTC will modify or create a new qualification training program based on what we identify.

Following completion of a licensed operator training program, the NRC license examiners will administer initial exams approximately 18 months prior to fuel load.

Since the plants will require about 45 operators, operator licensing classes will be larger than normal; approximately 50% and there will be about 30 candidates per class.

To administer these exams to large classes and to maintain the rate of exams for the operating fleet we'll need additional examiners. They'll be placed in the regions based on the number of new reactors expected in each region. Next slide, please.

We interface with NRR and the TTC and the regions on a regular basis regarding the transition of the new reactor operators into the operating fleet as they become operational.

Since the regulations require re-qualification of operators, many operating reactor examiners will be cross trained into the new design reactors to review and administer these re-qualification exams. We plan to train these examiners during initial exams as we move forward.

That concludes my remarks.

MR. REYES: That concludes our prepared remarks and we're looking forward to your questions and I'm very happy to agree on any action item starting Monday.

CHAIRMAN KLEIN: Good plan. Well, thank you all for a very good presentation. Obviously, a lot of activities going on. So, you think your going to meet your 489 number?

MR. HOLAHAN: Yes, sir.

CHAIRMAN KLEIN: Good. Commissioner Lyons?

COMMISSIONER LYONS: Thank you all for an excellent

briefing. Let we start with a first question that I also asked to the industry representatives. I'm not sure if it's for Luis or Gary.

I'm curious about your view on the agreement between staff and industry on identification of key issues. Are there any substantial disconnects? I haven't heard any.

MR. HOLAHAN: I haven't heard any either. I think it's interesting that when we prepared our presentation for today we didn't consult with industry, but in fact there's a fair amount of overlap in the issues that they raised and the ones we raised. I think that's probably an indication that we've got the same things on our mind.

MR. REYES: On my level in addition to the daily or frequent staff exchange, I meet with the vendor senior management and all the COL applicants' senior management all in one meeting.

We discuss some issues that are generic to all the applicants of a particular design and sometimes we discuss site specific issues to make sure that in fact, the vendor, the COL applicants and senior management of the NRC are in agreement.

And we're doing that with all the designs that are currently the subject of COL applications.

COMMISSIONER LYONS: I think it speaks very well for certainly our management, our staff and the same for industry that we've got

this level of alignment on recognition of the key issues and working together to solve them. So, there are lots of compliments to go around.

I was going to ask a question on the sump chemical effects, Chris. You and some of the industry comments may have answered this. There was a statement that the new plants based on current experience would probably avoid use of fibrous insulation.

Is that sufficient to say that the chemical effects are largely behind us or do we still have to continue to pay attention to the chemical affect issues in the sump designs?

MR. JACKSON: We still have to pay attention. The choice of materials and the choice of chemicals makes the job much easier. So, we know the bad actors. We know how they work together.

We have guidance out there, so it's much easier for somebody coming in with a clean containment to choose the materials.

Now, what we have to make sure is that the testing that's been done in effect umbrellas what they have so that as you build in the innovation, you can introduce more chemicals or different chemicals. That would be the nature of our review.

But from a design standpoint, they have a leg up, but our review would still make sure that they have adequately addressed them.

COMMISSIONER LYONS: In general, are you finding that the

containment designs are coming in, let's say, much cleaner than the existing plants?

MR. JACKSON: By and large we're seeing much less use of fibrous insulation if no use at all. So, we're seeing much more reflective metal. So, yes, big improvements.

COMMISSIONER LYONS: Thanks. A question for Mike on some of the operator exam issues relating to the Digital I&C, which I've kind of been interested in the past. I'm looking at you're slide 23 that talks about a time line on instructor training and a number of other aspects.

You also mention that there's a paper on its way to the Commission to talk about a number of these issues including simulators for the Digital I&C.

I was just curious. Based on that time line are we still acceptably following this timeline? I'm noticing it says start instructor training 67 months out. That's still a ways in the future.

MR. JUNGE: I heard today they've already started, so that's a good sign for the industry. On our side, we're running right to the limit of we need a simulator by 2010 so we can have it operational by 2012 so we can have our examiners and inspectors ready.

We're planning on hopefully getting more examiners 2010, 2011 time frame, so that we will have the capability to handle the increased number of

exams we're expecting.

The industry is also going to take -- as I talked about, we're going to have experienced operators in the control room. So, they're going to have to take operators from the current fleet and use them in these new reactors.

So, we're expecting the number of exams to go up for the operating fleet as well as for the new reactor fleet.

MR. REYES: On the industry side, they have a very detailed staffing curve that includes everything from pre-construction activities, construction activities, initial operation. It goes through all that and, of course, that curve moves back and forth depending on when you want to start pre-construction and construction.

Within those curves, they recognize that you need the operating staff. I'm aware of some of the negotiations already going on between some of the applicants and the vendors regarding simulators.

On our side, we are preparing the 2010 budget as we speak and you'll see a request for funds for the NRC related activities for staffing and equipment, such as simulator or an equivalent.

We're still working on what is the best approach. There's a recognition that in fiscal year 2010 we need to do that.

There is an issue that we haven't resolved. As you know, we survey the industry to give exams. How many exams are planned to be given to

the current fleet? We have that feedback for 2010 and it's a decrease from 2009.

We're trying to make sure that that issue was responded to at the right level in the industry and they -- to make sure. Once we plan for a much smaller number of operator exams, we can't recover. We won't have the resources. So, we have to resolve that part.

COMMISSIONER LYONS: In fact, that point came up, I think, on a visit I had in Region II -- no, Region III. It did seem very surprising that industry was projecting a decrease in the number of license exams required in 2010, which to me made absolutely no sense.

So, I'm glad you're elevating that and making sure that's really what they want to say.

MR. HOLAHAN: Can I just add one thing? Not to belabor the issue, but this time around with digital control rooms and large displays and computer capability now, which is so different from when everyone else was in high school and I did a little work on the Calvert Cliffs simulator, that was 1970's, having computers to run simulators was an enormously difficult problem. To put a simulator together these days -- to put a control room together or to put a simulator together is a much more manageable task.

I think that's why the NRC has a feasible task in front of it to get it done and get it done in time.

COMMISSIONER LYONS: Well, I very much hope you're right, Gary, but it's certainly an area that I think you and I think the Commission, too, needs to really stay focused on. I'm nervous about this area, but I hear you and I hope it's all going to come together. I'll stop there. Thanks.

CHAIRMAN KLEIN: Commissioner Svinicki?

COMMISSIONER SVINICKI: Thank you Mr. Chairman. I thank all of you for very informative presentations. I raised with the industry representative the issue of the quality and completeness of submittals. I notice, Gary, that you said "acceptance reviews are a proven process".

So, I take from that we have a data set now that we could determine some trends. Is there a trend there in the quality and completeness that you would comment on?

MR. HOLAHAN: I think the database is we've basically completed, I guess, seven acceptance reviews. We're doing a few more. I think the most noticeable thing is that the subsequent plants, not the first of a kind, but the second of a kind looks like they really are learning the experience from that first application. And so, in fact, I think Tom probably has more of the details.

We've even had acceptance reviews for which we laid out a 60 day schedule, which we actually completed in a much shorter period of time.

It wasn't that we got a lot smarter; it's that the system got a lot smarter.

MR. REYES: We did.

MR. HOLAHAN: Well, maybe we got a little smarter, but the process just worked better.

MR. REYES: If I could add, we also have seen an improvement not only within the design center, but there's a lot of good communication across the industry. So, when we see the first reference of a new design it's much, much better than the first reference of the previous design; meaning, lessons learned from this one were transferred to a completely different technology.

So, there's a lot of cross communication in the industry. We're seeing not only through the reference plants and the subsequent COLs but across designs.

COMMISSIONER SVINICKI: That's encouraging. I hope we'll see that trend continue. Tom, I wanted to mention, I think sometimes success is enabled by the most mundane of things. I appreciate the time you spent talking about the planning and review tools.

I think it's really important for the Commission to understand how it is -- I'll contrast it to what I call "and then a miracle happened school of planning". I really appreciate and I'm going to take a moment just to

commend Chairman Klein because one of the first things he told me here is that he wanted to invest in software and IT and work planning tools that were going to give us any chance of success in getting done the workload that was projected.

So, I appreciate you're taking the time to cover that. I think it's important for us to hear. I would hope that you would bring to the Commission's attention anything that you feel that you lack in that area. I think it's important that it be addressed.

I think my last question is for you as well, Tom. On the security rulemaking, as I understand it you talked about a projected schedule of having a rule in place by March 2009; is that correct?

I think if you back that up that requires a draft to the EDO by end of June of this year.

MR. BERGMAN: Correct. That's draft final.

COMMISSIONER SVINICKI: What's your confidence level on getting that to the EDO on that schedule?

MR. BERGMAN: We are very confident.

MR. REYES: You were not here in the previous Commission meeting, but I made a point -- either Dr. Mallett is going to deliver it to me in June or his replacement will soon move to his office.

MR. BERGMAN: We did need a planning and scheduling

system for that deliverable.

COMMISSIONER SVINICKI: We're at 100% confidence. Okay. That's doable.

COMMISSIONER JACZKO: Just to clarify, he'll be delivering it to Bill.

MR. REYES: Yes.

COMMISSIONER SVINICKI: Thank you. That's all I have, Mr. Chairman.

CHAIRMAN KLEIN: Thanks. Tom, I have a few questions. I'll start with you. On the early site permit for Vogtle, could you talk a little bit about efficiencies that we learned internally for the first three processes that we went through and what you learned and implemented to make the Vogtle one any better? How much more efficient do you think we were?

MR. BERGMAN: In terms of schedule, I'm probably going to have to get back to you with more details on that. In terms of schedule, it's very hard to apply to say, "Hey, we were able to cut huge steps out of the process."

In terms of the types of issues we face, we've got a better understanding of that. We've learned how to work better with applicants and that's paid off, but we still continue to struggle in the reviews with -- the site issues, it seems, drive the schedules heavily. There something unique

about every site, even where it's only three-quarters of a mile, I think, approximately there from currently operating units. That's what makes those very challenging.

But the process especially with respect to the Environmental Impact Statement is they're already very efficient. They already learned from the license renewal program how to do EISs very short. The roughly two year period for an EIS is very good and that drives that schedule.

Now, it turns out in this case because of some siting aspects that are related to the safety reviews, the safety reviews have been extended a little bit there. But in general, that is a pretty good process.

MR. REYES: We don't have the number here, but it's a significant reduction in the effort and the time on the fourth early site permit based on lessons learned on both sides.

The fourth early site permit is very precise. The technology was picked instead of doing an envelope analysis. So, a lot of improvement on the industry side and a lot of practice by us. We had done three of them, so we did get smarter and much significant improvement.

MR. BERGMAN: The total schedule is shorter there.

MR. CLAYTON: If I could add to -- on the environmental side. As the Commission has encouraged us to do, we look for whatever information is already out there; other agencies' Environmental Impact

Statements or environmental assessments or previous ones here.

I was talking to one of my staff members this morning. One of the alternate sites for Bellefonte is the former Clinch River site, which TVA still owns. I got one of my staffers this afternoon going out looking for the EIS that we did back in 1974, '75.

There's information there that may still be viable. So, we start with what little we can find.

CHAIRMAN KLEIN: You mentioned about the amendment for the AP1000 on the design cert. Do we expect an amendment on the ABWR?

MR. BERGMAN: No, we do not expect an amendment to that design. We expect South Texas to pursue departures.

MR. REYES: We know what they are and they're just safety improvements. For example, the turbine on the high pressure core injection system. Since the design was certified, we've seen a much improved turbine to drive that pump.

So, there's a handful of departure from the certification, but there all practical and improvements on safety.

CHAIRMAN KLEIN: Very good. I would like to compliment you on your public outreach activities. I think across the board that we've done a good job in having public meetings, raising issues, talking to people

and I think that will really enhance the communication as we go forward and reduce unnecessary anxieties.

So, congratulations on your public outreach. I read where public meetings are held often and I think the more we can do that the better we will be. So, keep up the good work.

Chris, I have a question for you. On page 14 of you're slide you talked about the detail that was lagging. I assume that the detail that was lagging gets corrected on future COLs; is that correct.

MR. JACKSON: My presentation was focused mainly on the design certifications. The COLs we're seeing are incorporating this information by reference. My statement was directed towards design certification.

CHAIRMAN KLEIN: How about on design certs? In other words, the detail that you're seeing; EPR did lessons learned from the AP1000 and the ESBWR helped for those design certs?

MR. JACKSON: We didn't see a big improvement from my standpoint. The Mitsubishi design, the EPR came in very close to each other, so I don't think they really had an opportunity to learn from those.

I didn't see a benefit there, but since then in the last two months we have gotten a lot of information and we have the rest of the information scheduled or the applicants schedule and we're planning our reviews

around it.

CHAIRMAN KLEIN: Hopefully, we won't have quite as many RAIs on the last two as the first ones.

MR. JACKSON: That's our hope.

CHAIRMAN KLEIN: Commissioner Jaczko?

COMMISSIONER JACZKO: I had a couple specific questions back on the sump issue. Again, in some of the background material that was here there is a statement for ESBWR that GE's plan is to use an active pump after 72 hours following a low pick. Do you know more about that? Can you explain what that --?

MR. JACKSON: I'm reviewing the PWRs, but I can touch on it briefly. ESBWR is a passive plant. It's passive for the first 72 hours. After 72 hours, they're permitted to credit --

That's where the issue is. The passive plant becomes active at some point and we would have to consider those issues.

COMMISSIONER JACZKO: How does that issue affect the sump issues? Am I misunderstanding?

MR. JACKSON: The long-term cooling is typically done through some sort of recirc, so they take water from the suppression pool or one of the other pools in containment and cool it.

So, that would potentially be susceptible, but right now the

discussions are still going on with GE as to what systems they'll credit and whether they would be affected by it.

MR. REYES: If you don't need to recirculate the water from there then there's no issue, right?

MR. JACKSON: Yes.

MR. REYES: If at some point in time --

COMMISSIONER JACZKO: These wouldn't be pumps for recirculation? These would be pumps to supply water for recirculation?

MR. HOLAHAN: No, no for recirculation.

MR. REYES: Yes. Because the water is down in the basement of the building and whenever you're going to get the water from the basement of the building back into whatever action to mitigate the accident, at that point in the accident mitigation then the issue surfaces. As long as you don’t do that, the issue is not there.

MR. JACKSON: There's still discussions with ESBWR on exactly what they're going to credit when and whether those issues will come into play.

COMMISSIONER JACZKO: If I could go back to a comment, I think Tom, that you made and one that I'm not quite sure that I agree with. But I'll perhaps give you an opportunity to expand on it a little bit.

You made a comment about -- in the design cert about looking for

ways to have additional overlap potentially within an SER being issued and potentially a rule going out earlier than that.

Can you comment a little bit more on what you meant by that?

MR. BERGMAN: I don't want to prejudge the Lean Six Sigma process, but it is possible that you can start the rulemaking process while you're developing the FSER. Right now, our current plan would be you issue an FSER, then you go to ACRS, then you begin rulemaking.

It is possible that you could overlap those two processes somewhat. You have to go through that FSER, ACRS before you finalize the rule, but you may be actually able to overlap the two.

We want to both shorten the process and if possible move up the start date so that the end date comes forward.

MR. REYES: The Lean Six Sigma process specifically looks for something they call idle time. And idle time could be as simple as you do things sequentially with a gap on them or you could before you do the last step on one sequence start the step on the next sequence as easy as lining up the staff and doing some work.

Lean Six Sigma as a business process improvement minimizes idle time. In Lean Six Sigma lingo that's what Tom was talking about, reduce the idle time on the process which has several sections.

MR. HOLAHAN: In this case, there's an additional

consideration, which is organizations like the ACRS will have already reviewed the design and if you simply did the standard rulemaking process they would review the design as part of the final design approval. Then they'd review it again as part of the proposed rule. Then they'd review it again as part of the draft final rule.

It seems like there's a lot of opportunity for rolling that maybe into two or maybe into one process.

COMMISSIONER JACZKO: Well, I'd certainly be interested in what comes out of this, but at this point I'm somewhat skeptical of this approach. I think one of the things that's important to keep in mind is that these rules go out for public comment and I think this information is valuable for people who want to comment.

I'm not sure that we want to put out too much simultaneously. I think there's already a tremendous amount of overlap going on with the design certs as well as the COL review as well as potentially an LWA hearing that may be in progress.

At some point we make it pretty much impossible for members of the public to track everything that's going on at the same time. That is an important part of our responsibility and I hope that that's being factored into whatever we're looking at from a Lean Six Sigma that we continue to ensure that the public has ample opportunity to review materials in sufficient time to

be able to comment in an informed way on these rulemakings and the entire process.

I get a little bit worried when I start hearing about more overlap because I think we've got enough as it is.

In that vain as well, I would certainly encourage whatever follow-up meeting we do on the interim staff guidance on the Limited Work Authorization that certainly the staff makes sure that a large group of stakeholders is present because we certainly got a lot of comments on the rule as well.

A lot of people raising varied kinds of issues that we're struggling with. Going back and reviewing some of it. If, in fact, some of the things we indicated was, don't worry, those issues are going to be resolved in the interim staff guidance.

We certainly have an obligation, in particular, to make sure we go on to those commenters and insure that they participate and do comment and work this out. I think as I said I was not sure that this rule was going to do anything other than create more problems. So far, I'm not sure that I was wrong.

So, I think as I said, it's something -- it's an opportunity, it is not a requirement for anyone and I don't know that it's necessarily going to accelerate. I would just comment, too, we touched on this earlier.

We have a lot of applications in front of us. We have a lot of interest and there's a lot of desire on the part of industry to move forward with applications.

The real issue in a lot of ways is who's actually serious about constructing? I have heard from several people that the most important issue for construction, obviously apart from getting a license from the NRC, is the approval of Federal loan guarantees. Right now, there are not sufficient Federal loan guarantees for more than several nuclear power plants.

At some point, there appears to me to be a disconnect in terms of what the goals are in terms -- we right now have nine applications, I believe, for 15 units. Clearly, not all of those can be funded right now with Federal loan guarantees that are about $8.5 billion.

At some point if that issue is not addressed, then either that statement needs to be changed from the industry or those plants aren't going to get built.

So, I think we need to be careful as we look at these things that we don't get too far ahead of ourselves in terms of what's actually going to happen with any of these applications if they get approved in the end.

I didn't really have any questions in that round. I apologize. I have one quick question.

CHAIRMAN KLEIN: Brent, did you want to comment?

MR. CLAYTON: I'd just say we certainly plan to proceed as you suggested and we'll keep you posted on our progress.

COMMISSIONER JACZKO: Great. Appreciate that.

CHAIRMAN KLEIN: Commissioner Lyons?

COMMISSIONER LYONS: I don't have any more questions. Just a comment out of what you just said, Greg. It's my understanding and I may be wrong and the industry folks are still here and can comment.

The importance of the loan guarantees is very different, whether you're looking at a merchant plant or looking at a plant on a rate base. I think you'll get very, very different answers on the importance of the loan guarantee depending on which group you ask.

COMMISSIONER JACZKO: I asked both and I've received the same strong assurances from both that that's important. Now, again, I'm sure people's situations may change, but I have bifurcated that question and was surprised by some of the answers I got.

COMMISSIONER LYONS: That would surprise me.

CHAIRMAN KLEIN: I've asked the same question and I've gotten different answers. That depends on who you ask.

COMMISSIONER LYONS: I don't have more questions.

CHAIRMAN KLEIN: Just one question. What's our critical

path for getting a Digital I&C for us so we can train our staff to be ready to give exams and get trained?

MR. JUNGE: To have the simulator? Going backwards from that slide, our training is going to start at the same time the operator training is.

MR. HOLAHAN: What does it take for the staff and the Commission to do to get that simulator in place?

MR. JUNGE: We have to resolve the three options that we're working on and we'll need it in place at least 12 months before the examiner training finishes. So, there is an overlap of time that we don't need it, but it's coming down.

COMMISSIONER LYONS: There's another little detail of funding it.

MR. REYES: Fiscal year 2010 budget will answer your question. We're wrestling with what to ask because there's two or three ways to go. There's two or three ways to go and we're trying to make sure we ask you resources for what we need, but that we're smart that it is the right thing; not necessarily what we've done in the past.

So, as we speak Dr. Mallett spent the day yesterday working the budget issue. He came with a number that I didn't like. So, he's going back. Bill will have an answer for you Monday.

MR. BORCHARDT: I thought it was alright.

MR. REYES: Bill will have the perfect answer for you Monday.

CHAIRMAN KLEIN: Any more questions?

COMMISSIONER JACZKO: Just one question. Maybe you can update me on where we stand in general. I don't want to get into specific issues on any applications that have been docketed.

Where do we stand with seismic issues? I know that's been a recurring issue and one of the technical challenges. If you can update us on where we are there?

MR. HOLAHAN: Do you want to take it, Tom?

MR. BERGMAN: In terms of --

COMMISSIONER JACZKO: Laura is sitting back there.

MR. HOLAHAN: We can ask an expert. Before she gets there, we have in fact -- in the presentation to the Commission, you heard us talk a lot about issues on design certification because in fact we've avoided dealing with issues on COLs because of the possibility of hearing and separation of functions and stuff.

We'll probably continue to do that; to focus on design certification technical issues.

MS. DUDES: Actually, I want to go back to one question Glen

and I were talking about the critical path for the simulator. We're sitting in our chair. We think its design. We hope that everyone is focused on getting the plants designed and that will allow us to get our simulator.

With respect to seismic, I'd like to turn it over to Nilesh.

MR. REYES: I think I know the answer.

COMMISSIONER JACZKO: Whoever wants to answer it.

MR. REYES: Here's the expert.

MR. CHOKSHI: One of the issues we have been talking about is so-called high-frequency issues and we in February, we have reached agreement with the industry. Our interim staff guidance will be out within a couple of weeks. It's going through the process.

COMMISSIONER JACZKO: As I recall, there was also an issue with the ability to analyze core borings.

MR. CHOKSHI: That's the geotechnical -- and we also issued an ISG. The primary issue there was the availability of the testing labs and facilities. Industry is addressing to increase that capability.

COMMISSIONER JACZKO: Has there been an increase at this point?

MR. CHOKSHI: Yes. There has been some increase. There are more instruments available and a number of people are trained and we have developed a position on how to deal with a limited number and what to

do subsequently.

MR. REYES: So, at a high level, we don't see that as a significant issue. We have to resolve the interim staff guidance. You heard about the availability of more instruments and more people trained.

And we have a path to resolution on how to resolve the high frequency analysis, but there's work to be done. We don't see that as a big stumbling block.

COMMISSIONER JACZKO: Thank you.

CHAIRMAN KLEIN: Thank you very much for a good presentation. Obviously, you can tell by the audience participation here today that this is an area of interest to a lot of us. Thank you for your hard work and good luck in your next assignment, Luis.

MR. REYES: Thank you.

CHAIRMAN KLEIN: Meeting is adjourned.

(Whereupon meeting was adjourned.)