UNITED STATES NUCLEAR REGULATORY COMMISSION

BRIEFING ON FIRE PROTECTION ISSUES

+ + + + +

THURSDAY

July 17, 2008

+ + + + +

The Commission convened at 2:00 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: STAKEHOLDERS

RICHARD MUENCH, President and CEO, Wolf Creek Nuclear Operating Corporation

JOSEPH DONAHUE, Vice President Engineering, Shearon Harris Nuclear Plant, Progress Energy

DAVID BAXTER, Site Vice President, Oconee Nuclear Station, Duke Energy

KEN CANAVAN, Senior Program Manager, Risk and Safety Management, Electric Power Research Institute (EPRI)

JIM WARREN, NCWARN

PANEL 2: NRC STAFF

WILLIAM BORCHARDT, Executive Director for Operations

JACK GROBE, Associate Director for Engineering and Safety Systems, Office of Nuclear Reactor Regulation

MARK CUNNINGHAM, Director, Division of Risk Assessment, Office of Nuclear Reactor Regulation

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

CHAIRMAN KLEIN: Good afternoon. We're meeting today to have a briefing on fire protection issues. We're going to hear about NFPA 805 and the pilot programs. We're also going to talk about the fire PRA modeling. We'll hear first from a group -- from industry and then later we will hear from our staff.

This is an area where it has not been a stellar performance I think either for the NRC or the industry. One of the objectives I think we all hope to come out of this meeting today is a closure plan with definite milestones and deliverables. So, with that in mind, any comments from my fellow Commissioners?

COMMISSIONER JACZKO: I'll just make some brief comments. I appreciate the Chairman's comments and I agree. I think this has not been one of our most transparent and consistent regulatory initiatives and that dates back several decades, I think.

And I do think we need to get to the point where we put closure to this issue and we have a clear, transparent regulatory program that licensees can comply with and it is clear when they're not complying and we enforce against noncompliance.

And that the public is able to understand what the level of protection is at facilities and what we're doing to ensure that that protection is established.

And I don't think that either of those criteria -- any of those criteria are currently being met by our fire protection program. I think that is something that we do need to address.

I do continue to believe that NFPA 805 provides a path forward, but it will only provide a successful path forward if we're able to ultimately enforce whatever regulatory provisions we have in place, whether they be the existing regulatory provisions or the new provisions for NFPA 805.

So, I look forward to hearing the comments today from individuals and then from the staff as well as we go forward.

CHAIRMAN KLEIN: Commissioner Lyons?

COMMISSIONER LYONS: I guess I, too, would like to comment that this area has probably raised more concerns in my mind and in my time at the NRC, more concerns than any other area.

I was dismayed shortly after Greg and I arrived to hear that some of the Hemyc tests were still ongoing and that truly did amaze me. I agree it's an area where I think in retrospect we could have and should have been moving faster.

At the same time, I have been impressed in visits now to many, many sites that we have -- that the licensees have under our oversight put in appropriate defense in depth and compensatory measures.

Nevertheless, it's not an area that I think is, as you said, a stellar performance by the agency and one that I would look forward to changing. And I look forward to this meeting as being a step towards those changes and towards closure on the whole issue.

CHAIRMAN KLEIN: Well, I think you might -- as I recall you're going to be starting with your presentation.

MR. MUENCH: That's correct. Thank you for the introductions. I appreciate the opportunity to brief the Commission on the status of Industry activities to address the fire protection issues that you've discussed. And if we go to the next slide.

As requested we'll be covering Operator manual actions, fire induced circuit failures and the implementation of NFPA 805.

I'd point out on the last topic there'll be three other speakers who will touch on fire PRA and so forth. So, we'll be covering that in a fair amount of detail this morning.

As far as Operator manual actions are concerned, that's the third slide. The licensees are working very hard to complete their corrective actions for the inspection findings that need to be resolved before March of 2009 consistent with the enforcement discretion. We all intend to be there on or before that date.

I would point out to be clear that there is an overlap between that activity and the activity to address circuit induced -- or fire induced circuit failures, multiple spurious operations because in both NFPA 805 and in the proposed alternative approach that's contained in SECY-08-0093, there are allowances for Operator manual actions under certain circumstances; credible Operator manual actions. And so, I think what you'll find is that in some cases some of the Operator manual actions that have been -- that will have been dispositioned by March of 2009 there may be a change in those as a result of the application of the methodology NEI 00-01 and SECY-08-0093; the methodology that's in SECY-08-0093.

In addition to that obviously you'll see more application of Operator manual action subsequent to March 2009 if we adopt that methodology. So, I just wanted to clarify that.

As far as fire induced circuit failures, we have reviewed the information that's in the SECY-08-0093. Of course, we've discussed many elements of that with the staff before the issuance of that document.

Conceptually, we believe it's a meaningful alternative to addressing fire induced circuit failures, multiple spurious operations. There are a lot of details that we need to work out and according to the schedule that the staff has proposed we need to work those out before the end of the year.

There's quite a bit to do before the end of the year and we're committed to working quickly and frequently to resolve those details.

These have to do with making sure that we draw the right line between the required training and the associated circuits. We address issues having to do with making sure that we can make adequate use of fire modeling and other issues such as the application of 3G3.

We have some questions about the treatment of multiple spurious operations when we control shut down from the ultimate shutdown panel. But as I said, we're committed to address those issues and we're optimistic that we can resolve those details.

In addition, we still believe probably one of the important points of contention between us and the staff at this point still is some use of risk insights

and I'll talk a little bit more about that a little bit later.

For the next few months, we intend to continue to meet with the NRC to discuss and ask the questions about the details, make sure that we understand it correctly and make sure that we know how to proceed in a way that we can apply that methodology consistently across all the different plants in the United States.

And in parallel with that we will be developing implementation guidance for the use of risk insights for resolutions of some remaining issues after the application of that methodology and preparing a revision to the industry guidance in NEI-00-001.

Our goal ultimately would be for the NRC to endorse that guidance.

On the next slide I talk about the use of risk to address fire induced circuit failure in associated circuits. We believe that's appropriate to a limited extent.

Even for non-NFPA 805 plants we believe the regulations do not prohibit it. We believe it's consistent with the Commission's policy statement on the use of PRA and the failure to allow that could result in some potential less than optimum situations.

So, the first one would be the actions -- we could decide to adopt some Operator manual actions for associated circuits, for example, that while they would be safe and they would result in a level of risk that's very acceptable they may not be as -- they may raise a relative risk compared to what it would be if we did not take those actions.

For example, if you had a spurious operation of a valve that isolated the

refueling water storage tank from the safety injection system we may choose -- and this is just a very hypothetical example -- we may choose to take a safety injection pump and put it in the pull to lock situation until we were able to ensure a flow path for that safety injection pump.

As long as we could prove that that was a credible action and we had an amount of time necessary to do that. Whereas if you would model it with your risk model it would say you probably didn't need to take that action in the first place.

We think it could result in a time-consuming and costly requests for exemptions and license amendment requests and perhaps even costly modifications to our plant for low risk and low safety significant items.

I'd like to move ahead to the transition to a NFPA 805. Of course, the license amendment requests for the pilot plants, Oconee and Harris, are in. We think it's important if you look at the other 14 utilities with 46 plants that have committed to NFPA 805, we think it's important to learn the lessons from those pilots. We have learned a lot about those licenses submittals already and we're sure we're going to learn some more as your review proceeds on those license applications.

We want to make sure that the ensuing plants have the benefit of refinements to our license application request template, that we resolve some PRA issues that have surfaced in the development of those models, and we want to take full advantage for the ensuing plants for learning from the request for additional information that will come on the pilot plants.

We'd like to give you the next round of submittals that minimize your effort because we've answered those questions -- as many of those as we can -- in the ensuing license amendment requests.

Fire PRA is a challenge. You're going to here a little bit more about that from Joe and Dave and especially Ken. The preliminary results are conservative.

That can resolve in us taking some actions that are less than optimum and we're working with the NRC to improve on that modeling and to make the model more realistic. Our goal is to resolve those issues by the end of this year.

The final slide, I'd like to talk a little bit about the extension to enforcement discretion. We have received a copy of the proposed staff approach to extending enforcement discretion.

We have on two occasions in the past few years submitted a proposal that was different than the staff's proposal. In the staff's proposal we are delaying the plants that would be committed to submit their license application request within the first six months of the safety evaluation reports for the pilot plants.

They would be allowed six months to make that application and people who are scheduled after that would look to their current committed schedule. We are concerned about the resource constraints in our industry.

We think that approach will exacerbate that and attenuate the peak demand on those resources by overlaying the development of the models and the license application request for those plants on top of some of the later plants that will be making their application.

So, we would request that the Commission consider an alternative approach where we would come up with a more realistic schedule for all of the ensuing plants, not just the plants that are scheduled to submit in the first six months after the SER. That concludes my remarks.

CHAIRMAN KLEIN: Thank you.

MR. DONAHUE: First of all, I'd like -- Joe Donohue, Vice President, Progress Energy. I appreciate the time to discuss our transition. First of all, I want to state that we realize and we think it's very important that fire protection really is a defense in depth approach and I think that's an important piece both in preventing fires, prompt detection of fires, control and suppression of fires and the separation of safety systems.

And by bringing all that together, we do believe that NFPA 805 gives us our best tool for improving the safety at our plants.

A little bit about the fire PRA implementation. It is a very significant effort and I will admit that it was probably -- we did underestimate the size of the effort it was going to be.

Extensive fire walk-downs were done in the plant which actually is very good because we now model every fire source that we have in our plant.

We have evaluated over 4,000 fire scenarios so when we actually run the fire PRA model we try to look at as many opportunities and that allows us to get at not only the way the plant is designed, but then the hot short issues and the multiple hot short issues. But it is running 4,000 fire scenarios.

We did have an extensive preliminary review with the NRC team in March that did come in when we were not fully complete with our fire PRA. We do appreciate their time coming in. It was very good input at that point in time.

Many of their comments we had on our radar screen of areas we needed to finish up, but getting that information was important to us. In the time from the NRC peer review – our review, we spent an awful lot of time in the last two months finishing the PRA, taking as many of their comments to heart and we believe we addressed many of the concerns from the team.

We brought in an additional industry expert team, some of which have been involved in the 6850 process, which is important because that's the basis of our fire PRA.

And we did a focus review on those areas that the NRC felt that they could not pass judgment because we were not complete in those areas. So, we do believe with the submittal of the fire PRA that came in with the LAR that we do have a very strong PRA that for the most part meets Category -- greater than Category 2 and 3 quality standards.

We have some that are Quality 1. We do have a couple open items we're working on. Predominately, that's in the area of documentation. And we do look forward during the NRC review of our LAR that they'll come back and take a look at where we are and substantiate our completion of that model.

We do believe that the fire PRA that we did submit is accessible for use in a risk-based application. In this case, NFPA 805.

We did spend nearly 50,000 man hours; 20,000 probably in what I'll call the safe shutdown area and the transition area and another 20,000, 25,000 in the fire PRA. So, it was a very extensive effort, but I do believe we've got a good model of the plant.

The other part to keep in mind is a lot of times we focus on the fire PRA. It is just one input into making decisions as we move forward because we still have defense in depth.

We use the safety margins in the plant and the actual modeling and we use the fire PRA to make the risk decisions or to make the right decisions. It is not just based on one model and one tool.

Also, as we transition to NFPA 805 you do carry forward your classical fire protection requirements: fire brigade, fire training, fire programs, corrective action programs and we have carried those over and we affirmed our programs at Harris as it exists today.

We have looked at implementing a nuclear safety performance criteria consistent with the new code. We've addressed fire safety and non-power operations, which we have not done before. So, we have that in our toolbox.

But as I mentioned, the transition resources were far greater than estimated, but we'll take that, have shared that with the industry and will continue to share that with the industry and we will improve on that as we deploy across our fleet.

Generic issues addressed: Not only did we ensure we're in compliance

with the NFPA 805. We did address the Hemyc and Mt fire wrap. We did extensive testing of our equipment and our fire wraps physically in the plant and incorporated that into our models.

We have addressed the manual actions that were addressed in the risk 2006-04 and we have addressed the multiple hot shorts in our model and in our LAR as we go forward.

Even with the NFPA 805, we are implementing modifications: new cable raceway, new fire rated cable upgrades to the Hemyc wrap to make it compliant with the code, additional cable separation and we have added some incipient fire detection in critical cabinets.

Eighteen mods are complete to date, so we're not waiting to the LAR. We have another set of mods on our next outage and we do plan to complete our full compliance mods by the end of 2010.

We hope the SER is approved by March of next year and we'll be implementing the mods as we go forward.

So, kind of in summary, NFPA 805 transition has been submitted. We do believe it's a good process, but it does take significant resources and we are on track to complete our implementation by the end of 2010 with both transition to the code and the modifications to the Harris plant. Thank you.

CHAIRMAN KLEIN: Thanks. Dave?

MR. BAXTER: I'm Dave Baxter. I'm the Site VP at Oconee nuclear site. I had the great fortune of seeing some of the presentation Joe was going to

do, so I was not going to repeat some of the same things hopefully.

One of the things I wanted to mention was Oconee being one of the older plants; we're celebrating our 35th year in commercial operation actually this week. I think we've proven that using NFPA 805 it's a good fit for older nuclear sites and I think it will be for the other older nuclear sites as they come along. So, it is a good fit.

One of the things that we've learned from a lessons learned point. On our safe shutdown analysis when we first went into Appendix R we looked more at where cables were not. And to really truly implement 805 you have to find out where all the cables are.

And so, we had a large reconstitution effort to find out where all the cables are because we started from Appendix R a different flow path than some did knowing what functions we needed; figuring out where cables were, where fires were.

And so coming into 805 we had to start with the reconstitution effort. We had already started that before we moved into 805, but that was a big chunk of our work was just the reconstitution effort of finding out where every single cable is.

Going through the pilot process as any pilot process it's complicated, it's time-consuming and sometimes expensive. You go to numerous industry meetings.

We try to stay in lockstep with Harris and with the industry because we weren't just representing Oconee, we were representing the industry. So, that

adds some to the time and some to the complications.

Like Joe, we probably spent somewhere in the neighborhood of 60,000 man hours on this project up to this point. And again, a good part of that was reconstitution.

Looking at it further down the road and just going through the implementation phase, not counting the modification, for the three units at Oconee we'll probably spend about $10.5 million to go through this process.

As we were going through it one of the things we found that documents and calculation reviews took a little bit longer than we expected. We had a main team doing the work and taking some of the burden off the plant folks and the plant engineers, but in the end the plant engineers have to own it, operations has to own it and so that review process does hit at the end of the project.

We didn't give ourselves enough time for that review. That's one of the things we learned and as we go forward we'll make sure that doesn't happen again.

We also made an assumption early on, Oconee being a three unit site, we were hopeful that we could have one fire PRA for the site; that the units would be similar enough that we could just have one fire PRA.

What we found as we were going through the cables and the fire PRA Unit 1 and 2 are similar enough to have a PRA in and of themselves, but Unit 3 was different enough that we ended up with separate PRAs for the site.

So, we have a Unit 1 and 2 fire PRA and a Unit 3 fire PRA which adds

some to the cost and to the time.

As we work through NUREG-6850 we found that it turned out to be somewhat conservative, but it also allows you to do some detailed analysis in those areas where you might have a hard spot or a burden. And that's very good to have in there.

We believe it's a good foundation to build on, but there are efforts on the staff's part and the industry's part to continue to fine-tune it as we go through the process and that's very important to do that.

Although we recognize that there's further tuning to do to NUREG-6850, we still believe that the basic fire PRA models realistically modeled the plant. There are a few places where we had to do some detailed analysis, but in general it worked.

And again the process was fairly manpower intensive. The modifications that we'll do for both the fire PRA -- we have some modifications that we're doing for other issues at Oconee that we'll take credit for and this will just add to it.

Go ahead, Dale.

CHAIRMAN KLEIN: Thank you, Dave. Ken?

MR. CANAVAN: Good afternoon. Ken Canavan, Risk and Safety Program Manager for the Electric Power Research Institute, sometimes referred to as EPRI.

I'm here today to discuss a little bit about fire PRA technology and that's Probabilistic Risk Assessment for those who aren't familiar. My presentation today

is divided into three parts.

The first is EPRI's fire PRA philosophy. The second is a little bit of information on the methods development for fire PRA and the third relates to some methodological issues as well as our progress to date on some of the conservatism's that you've heard about earlier today and some of the challenges that we see in the future for fire PRA methods. Next slide.

The EPRI fire PRA philosophy and, in fact, the general philosophy of the risk and safety management program at EPRI is consistent with the PRA policy statement which endorses and encourages the use of risk technology in all risk informed regulatory matters as supported by the state of the art and in this case EPRI is committed to supporting the risk informed performance based approach for fire protection.

What does that really mean? Well, it means that we need to develop and use realistic methods which involve research to reduce the conservatisms or the bounding approaches that we initially adopt as a way to simplify our models, to make our models more attractable.

It involves the collection of realistic input, operational experience and other events so that we can reflect the as built and as operated plants.

And lastly, all good risk informed approaches involve monitoring and feedback process. So, looking into continuing to improve the methods and the data collection so that we can ensure that the applications we do today remain applicable in the future.

Generally, this approach applies to all risk informed regulations regardless of the hazard group that they're in. Next slide.

In the area of fire PRA method development. NUREG/CR-6850 and EPRI 1011989 is a joint NRC and EPRI -- NRC Research and EPRI developed document that provides the majority of guidance for developing a fire PRA. It's commonly called 6850 for short. I don't understand why people don't use EPRI 1011989. I guess it's a little harder to say.

During the development process portions of the methods were piloted individually and at various plants, but no integrated pilot was performed during development process.

Currently, there are two fire PRA pilots of the integrated type and you've heard some of their results already today. These pilots are the first time it's integrated and as an integrated methodology as we outlined in 6850 and initial results are conservative.

That outcome is not unexpected. Actually, it's quite expected. And it's a product of a number of minor to moderate individual conservatism's that come together in ways that were not predicted by individual pilots of selected portions of the methodology.

Some of those individual minor or moderate conservatism's are in the methods and some are in the first time application of the method's misunderstanding, for example, which is easy to occur when somebody is writing a several hundred page guidance document.

But at this point it's important to talk a little bit about where conservatism is, and at least to some degree, it's present in all PRAs. And it's important to note that it's okay, but significant departures from reality are not desirable from a PRA perspective. So, we don't want to get too far from it, but minor conservatisms are expected.

I have a little analogy here and at the risk of getting myself in trouble I'm going to go ahead and use it. Conservatism in the PRA is like clouds to an astronomer. The clouds can make it a little bit hard to see exactly what you want to see or they can make you wait till another day or put in a little more work to see clearly the risk insight you need to get. Next slide.

COMMISSIONER JACZKO: I think you survived that. Good analogy.

MR. CANAVAN: I was a little nervous about that. I put up a number of the fire PRA methodology issues that we're working through right now in the area. I won't go through the whole list, but I will go through a couple of my favorites

Fire ignition frequencies. We need to review and potential revise the fire ignition frequencies to reflect the as-built/as-operated plant and what kind of experience we're seeing today.

Credit for incipient detection. Currently the methodology in 6850 does not describe or recommend a treatment for the incipient fire protection systems in the PRA, which means if you put in an incipient system you wouldn't get full credit in

the study. That's sort of important reinforcement to good behavior.

Treatment of large oil fires. We need to clarify some of the guidance on modeling of large oil fires. And I'll let you read through the rest of the issues and just move on to my next slide, Others Issues, Progresses and Challenges.

In the area of other issues there's a shortage of trained risk personnel. This affects not only the fire PRA performance, but although more acutely in fires because there's even less people qualified to do fire PRA, but risk analysis in general are in short supply.

It's due to attrition, even to other industries like aerospace and petrochemical industries, as well as normal attrition due to retirement.

Practical modeling limitations. We've heard a little bit about fire modeling. There's actually two kinds. There's the probabilistic kind and then there's the fire growth and propagation modeling.

And in this case we're talking about fire propagation and growth, which have some limitations. And in some cases a limited amount of judgment is necessary to address the fire growth and propagation issues and ways to document that and what is considered good judgment needs to be put in the guidance. Okay. That's the issues.

Progress. Hopefully this is good news. Education of risk professionals and fire PRA training are being performed. Education of risk professionals - EPRI has a one-year course designed to train the next generation of risk professionals and it occurs over a year.

We recently had 14 graduates in June and in the area of fire PRA training we're offering training periodically both by the NRC and by EPRI. These courses are usually joint with the developers of 6850.

And not only that, but vendors and consultants are now offering training on a per fee basis. So, there's training out there if you really want it.

EPRI and NRC Research are working to refine the PRA methods and draft resolutions are under development for all those issues identified on the previous slide.

These resolutions are being developed by the extended 6850 team, which includes not only the original 6850 team, but it's augmented by other industry and NRC personnel.

And significant progress has been made in a very short period of time. It's impressive. We think the extended 6850 team deserves credit for the amount of work accomplished in such a short period of time.

However -- there's always a however -- challenges remain and these include the available resources. And while we're training people as quickly as we can, training qualified people does take some time and there are some time constraints and the iterative nature of fire PRA development.

Just as a quick aside, prior to NFPA 805, fire PRA methods were being developed by EPRI and NRC and they were on a much slower pace to completion then they are now.

And while 805 has accelerated development, it's clear that we're going to

have some -- at least short-term -- that the methods will evolve over at least the short term.

But as an aside and in closing I did want to say that internal events PRA methods have matured over the last decade or so and they continue to evolve and mature. And they still remain important tools to safety. And that concludes my remarks.

CHAIRMAN KLEIN: Thanks, Ken. Jim?

MR. WARREN: Hello. Jim Warren with NCWARN. (Low audio) However, from this morning's meeting, It's quite clear that NRC is still many years away from enforcing fire protection regulations.

A lot of hard work and important work is being done by NRC staff and the utilities, but it really looks more as if NFPA 805 has become a PR exercise to make Congress and the public believe that a serious problem has finally been solved.

A lot of hopeful talk this morning in the kickoff ceremony and it was kind of amazing. The only thing lacking was a burnt offering, but when you got into the actual discussion and what you're hearing today is there are just major overlapping complexities with this approach.

And even if it were an excellent approach it's looking like a 10 to 20 year program. It feels like 805 is yet another end run, a scheme to relax the regulations instead of requiring the utilities to spend the money to correct known deficiencies.

We heard this morning that there are 47 units committed to moving to 805.

There is no timeframe being offered. The staff is seeking another extension for enforcement discretion, so it looks like that's indefinite.

Progress Energy predicts compliance of Harris in late 2010, but NRC admitted to me earlier, the staff, that it has no authority to prevent licensees from changing schedules shown in the LARs.

Oconee at this point cannot even predict a compliance date. I'm concerned that Harris may have skipped some steps since the March preliminary assessment from NRC.

Our understanding was they had to complete both the NRC and independent peer reviews prior to the LAR and this morning we learned that NRC itself performed what was planned to be an independent peer review.

And I'm concerned and ask you was this done in order to help Harris beat the clock on enforcement discretion running out? I'm concerned that the LARs were filed early to mute public concern. And I'm concerned it creates more pressure for the staff to allow them to skip more steps.

Now, this is -- if some of you have been following, it seems like a parallel mess to the COLA process where you get design certification intertwined with application reviews and I caution you to watch out for this. You're talking about pressing your NRC staff and putting them into a really tough situation here.

North Carolina and I in particular, we've been hearing promises -- similar promises from CP&L and Progress Energy for years and years. They've repeatedly promised to correct all the fire non-compliances for over 10 years. And

these are for laws that were prescribed in 1980.

I ask you also -- Congress Appropriations Committee is calling for, "full compliance on an expedited basis". And I ask you what does that mean to you? Does expedited mean years and years more?

I'm concerned your predecessors have caved so many times to this industry on Thermo-Lag, on Hemyc/Mt and I urge you not to cave on 805.

The chronic inability for the industry and the NRC to conform with the explicit criteria and the existing regs is an unsound basis for shifting to the vague and nondescript criteria of the 805 option.

Now, NRC told the GAO that there hadn't been too many serious fires. Of course, that's a problem with trying to get a database large enough to help with PRA.

I'll remind you, there was a trade journal called a major fire at Shearon Harris in 1989. There are dozens of emergencies declared at US plants. That designation is supposed to mean something. There are more fires likely in the future due to the aging of the cable jacketing.

In 1993, Congressman Dingell was promised that the fire watches would be limited. The industry went from fire watch to unauthorized OMA while hiding it from the NRC. Where was the penalty for that?

The GAO obviously notes a lot of concern about the risk assessment and the real problems with modeling in gray areas in risk assessment, lack of resources. We're hearing it across the board. This is not a good basis for moving

into a new regulatory scheme.

Meanwhile, 805 clearly is a weaker set of regulations including real problems with inspectability. And as of now we understand from the former head of the fire unit at NRC that fire areas and noncompliance are not being inspected.

If you can't enforce current, direct regulations then how are you going to enforce gray coated PRA? You can't PRA a deliberate fire or one involving thousands of gallons of jet fuel.

It really looks like you're facing years of more exemptions, enforcement discretion, terribly inefficient use of staff resources, and years of more reliance on interim -- so-called interim comp measures even though as GAO pointed out NRC has identified weaknesses in comp measures in particular over reliance on fire watch.

Now, we're hearing talk about even more OMAs coming forth. So, I ask you Commissioners to be as serious about the time frame on this issue as you are about the time frame on new reactors.

Fire protection is only one part of the many systems and functions in a nuclear power plant. How can Progress and Duke and NRC move so rapidly through fire protection and all the other topics for a new plant in considerably less time then it takes to resolve known fire protections at operating plants?

Another question for you. Will the NRC commit to completing this safety compliance program industry-wide within the planned time frame for nuclear-- for new reactors? Why should the public expect any less? Because with fire regs

you have a 30 year head start. I challenge you to please do that.

Public confidence in NRC continues to decline. Maybe you know that. It's for good reason.

Here's an issue no one has addressed and we'd sure like to know. Maybe you can find out. Progress spent years of meeting with NRC staff, came up with a set of Thermo-Lag corrective actions that we believe they abandoned many of the corrections in favor of OMAs. Did NRC staff ever go back and compare what Harris consented to do with what they actually did?

That's a really important precedent if you're moving forward with 805 or any regulatory scheme.

So, I guess in closing as had been predicted by Dave Lockbaum, Paul Gunter and others, the 805 option appears to us not to have provided an alternative means of compliance, but it's provided an alternative set of excuses for noncompliance.

So, rather than allow the interminable delays with fire safety to continue, we reiterate our insistence first put forth in October of '06 that you use your discretionary authority to enforce the existing fire safety regulations and assess daily financial penalties until full compliance is achieved and we also urge you to drop the 805 program.

You know, I know, everyone knows the reason these licensees are in noncompliance is simple: It’s cost. But there's no provision in 3G2 or in your mandate for the economic benefit of the company taking precedence over safety.

And finally, the public -- and we are really concerned that the NRC's seemingly permanent lack of enforcement not be allowed to continue. We need to really make sure that these nuclear plants are in full compliance now.

None of us wants somebody to melt down a nuclear plant, certainly not on your watch. Thank you.

CHAIRMAN KLEIN: Well, thank all of you for your presentations. We always have a list of who starts the questions and I get to start today.

I actually have -- in my normal mode I will start with the order in which they're given; however, I want to just ask Jim -- you made a statement that I was surprised at.

You said the public confidence is declining in the NRC. I've only been here three years. Can you tell me some data that shows that because what I see is a lot of public outreach?

Could you just give me some data where you have that that public confidence is declining?

MR. WARREN: We probably ought to schedule a whole additional meeting for that and bring in some of the other folks from around the country. But I will tell you that based on -- part of it is based on enforcement of the current safety regulations.

A lot of it is involving the processes that NRC puts forth involving relicensing and new licenses. Despite all the efforts for public outreach -- and I know you're trying to do some of that -- you've got a very complicated system.

The public groups like ours all over the country believe the rules are rigged against the public. We're trying to gain a little bit of fairness and a little additional time.

As just one example involving an intervention in potential COLA at Shearon Harris, we find out the design -- the Westinghouse designs are three or four years away from being completed. The very ones that we were assured had been certified in 2005.

Not only is that a fairness issue and a challenge for non-profits and local governments to be able to meaningfully intervene, but it's also a resource issue.

You're heading toward a real mess with staff resources and taxpayer dollars going in the wrong direction.

CHAIRMAN KLEIN: Let me repeat my question. Do you have any data that shows public confidence in the NRC is declining?

MR. WARREN: What kind of data do you suggest would be --?

CHAIRMAN KLEIN: You made the statement; I didn't. I'm asking you to document your statement.

MR. WARREN: I'm giving you a lot of examples. I'd be happy to cooperate with NRC in doing a survey.

CHAIRMAN KLEIN: Have you done surveys? Have you conducted any?

MR. WARREN: I'm in meetings with hundreds or thousands of people month in and month out and I can promise you if you're really interested in

listening to what the public mood is toward NRC for those that are paying attention, I promise you you will not find confidence.

CHAIRMAN KLEIN: What I would like to see, though, is -- because we do deal with data, I would like to see some data that indicates the public confidence is declining in the NRC.

I looked through the '70s and '80s where there was a lot of discussion and I guess my perception is different. If you could provide some data I'd like to see that.

MR. WARREN: Final thought on that. I'll try to work toward that. I think part of what you've got is you've got an incredible PR offensive that the industry and the NRC have cooperated in. So, there are a lot of folks out there that are confused now.

Even over the last recent months people are looking at the GAO report and the whole licensing process and people are really seeing through a lot of the smoke and mirrors.

CHAIRMAN KLEIN: Again, I'd appreciate the data to support the claim.

MR. WARREN: Okay. Thank you.

CHAIRMAN KLEIN: Richard, I'll start with you since you began first. Obviously, 805 has been a challenge, I think; a learning process. Pilots do that. You talked about eliminating Operator manual action in that activity. You mentioned it on slide 3.

Could you talk a little bit more about the Operator manual actions and things that 805 will--

MR. MUENCH: What I actually was referring to is Operator manual actions that would be selected to be adopted either through the 805 process or through the proposed SECY-08-0093 process.

It wasn't eliminating them. It was adopting. So, I wasn't very clear on that.

CHAIRMAN KLEIN: Okay.

MR. MUENCH: What I was concerned about there -- not concerned, but I just wanted to point out that when we say we're going to be done by March of 2009 that some of what we've done between now and then may change as a result of further application of NFPA 805 or the proposed methodology from the staff.

CHAIRMAN KLEIN: You also had indicated, I think, that several more plants are considering 805. Do think they're waiting to see the results of the pilot before more plants would continue to look at 805?

MR. MUENCH: Yes. I think that there are other plants that are considering it. Some of them are transparent in that and some of them are not.

I believe they are definitely waiting to see whether the benefit of 805 is what it was intended to be; that the regulatory process does work; that the kinks are taken out of the PRA modeling process. I think you could see some more people go for 805.

CHAIRMAN KLEIN: Okay. Well, I obviously have more questions,

but I will -- we have a rotating scheme. And so, Commissioner Jaczko?

COMMISSIONER JACZKO: Thank you, Mr. Chairman. I want to make a couple of comments before I get to some questions. As I was going through and reviewing the material for this meeting, in many ways, I think I can share some of Mr. Warren's frustration as this issue has developed and materialized. It is somewhat frustrating.

I looked at NFPA 805 and that is obviously a voluntary rule that we have. As I went through and looked at various incarnations of Appendix R, the various incarnations of the Branch technical positions, the implementations of the general design criteria; three, I guess, is related to fire protection. And the myriad of issues that relate to fire protection throughout. And this goes back to 1976.

I guess I had realized the challenges were existing as early as then. We have never really been able to have a clear set of criteria that we enforce as a regulatory body in fire protection. To this day, I do not think we do.

I think NFPA 805 is the clearest example of that that we have, but I should say the Appendix R type program is relatively straightforward, but clearly we've not been able to enforce that and bring people into compliance with Appendix R.

At some point if we take a step back from some of these issues it's very easy to get caught up in a lot of our discussions and we lose sometimes the bigger picture here.

But the reality is that we have licensees that are using unapproved Operator manual actions, that have been using them for a long period of time and

to this day we still don't know what all of them are. That's simply unacceptable for a regulator.

It is precisely our job to know and to make decisions about what we're doing and what licensees are doing. It's clear when you read Appendix R -- and I remember I gave a speech on fire protection a long time ago or three years ago at a conference. I was trying to learn what our regulations are. Well, it's really pretty straightforward.

We have four criteria right now. You have to have a three hour fire barrier. You have to have an hour separation with fire suppression or you have to have 20 feet of separation. And if all of those fail you have to have an alternate shut down capability.

Simple, straightforward regulations and I don't think there is one plant right now that is in compliance with those regulations that doesn't need to rely on unapproved Operator manual actions.

And I challenge someone to tell me that's the case. I would be more than happy to know that there is a single plant that can answer "yes" to that question. It is ultimately unacceptable.

We're the regulators. We probably can't answer that question directly. And we are dancing around this issue over and over again and it is simply a matter -- I'm a firm believer -- with all due respect, Mr. Warren, I believe NFPA 805 is a good program.

But I am somewhat concerned by the time it may take to get us there. And

as far as I'm concerned in the interim we have to get into compliance with the other regulations. I think NFPA 805 is where we should go.

I think it should be a mandatory rule, but in the meantime we have to deal with the existing requirements that we have. So, if anyone wants to comment on that.

If you want to list for me the plants that are in compliance with Appendix R or their licensing basis equivalent or the licensing condition equivalents, I'd be more than happy to have somebody tell me which plants are.

And if there's any that are missing then that's a problem. That's where we need to start.

MR. MUENCH: We do believe we're in compliance with our license basis based upon the safety evaluation.

COMMISSIONER JACZKO: And there are no -- and you are in compliance based on the current staff interpretation of multiple spurious actuation?

MR. MUENCH: I think the interpretations have--

COMMISSIONER JACZKO: The question is: Are you in compliance with Appendix R? And I think the answer is "no" because right now there are no plants that are in compliance -- or there -- maybe not all plants are in compliance with multiple spurious actuations.

The assumption, which was an invalid assumption, was that there would be a single fault, a single circuit failure that clearly has been shown to be incorrect.

So, I'm not aware that any one is fully in compliance with the provisions on

manual operator actions. We just went through and pulled back a rulemaking because we were told that everybody was going to come in and file exemptions to that rulemaking.

So, we know there are plants that are out there that have unapproved Operator manual actions. Those plants are not in compliance with Appendix R or their licensing conditions.

I don't think all plants are in compliance and I would be very troubled to hear that as a statement. But please tell me if those assumptions are wrong.

MR. MUENCH: What I said was -- and before I say it again, I want to make sure that we as an industry have agreed it's time to get on past that discussion.

We do support either NFPA 805 or an alternative approach such as in the NEI guidance document and in the proposed SECY-08-0093. We do want to move on from that.

What I said was is we feel like we've been in compliance with our safety evaluation report and our license basis. We think the interpretation of multiple spurious operations has changed, but we want to get beyond that.

We're moving beyond that now. We want to move as quickly as we can in that direction. We just want to make sure that we do it in a way that's smart; that we do end up with a consistent set of bases out there; that we do end up with good decisions based on good PRA models.

But we're ready to get past that. We don't want to argue that basis any

more.

COMMISSIONER JACZKO: I certainly appreciate that, but again, the staff has put on -- and with the exception of my understanding of a typo has suggested that they would not support resolving the multiple spurious actuations through the use of a limited risk informed approach.

That's something that I certainly agree with the staff on -- and here this has come up again as an issue in your slides. I think the comment that you made was that it was imperative or that it was crucial that that be one of the viable options for resolving that issue.

Right now, the staff, I believe, does not support that as an alternative for resolving that issue. It would be up to the Commission to make that decision.

If the Commission decides not to do that, I don't know what the path forward is then for resolving this. That is troubling as we go forward.

I feel like we get back into this and then we will have another series of discussions, another two years will go by and we won't get to closure and completion of these issues.

I've gone on far too long, so I'll stop there. Thank you.

CHAIRMAN KLEIN: Commissioner Lyons?

COMMISSIONER LYONS: I started with some comments knowing that probably no area of your or our performances bother me more than fire protection.

Having said that, I very much agree with what you just said, Richard. I think

it's very important that we do move ahead and that we be working towards closure.

In my mind, NFPA 805 is a significant step towards closure. I had the opportunity to visit Harris a few months ago. I was honestly very impressed with the progress that you were making on NFPA 805.

I was particularly impressed as we went through the plant and you showed me the large number of upgrades that have already been made in the plant driven by your analysis connected with NFPA 805.

So, to me, those are very positive steps and I would hope that as a Commission that -- certainly given all our frustrations and I'm sure there's plenty among the staff, there's plenty among industry and there's plenty on this side of the table.

Nevertheless, I agree with your comment. We need to move ahead and we need to strive for closure.

I guess if I was going to add one other comment while I was at Harris there was quite a bit of discussion on combustible material control programs. I've had similar discussions at many plants.

I've been uniformly impressed at plants across this country with the control of combustible materials. The program at Harris was just beyond belief.

I thought that was about as close to a perfect program on combustible materials performance as I had ever seen. I don't mean to downgrade certainly Oconee because I haven't visited Oconee, but I was extremely impressed with

Harris. That was, to me, a clear outgrowth, I believe, of your work on the NFPA 805.

But to get to a few questions. I don't know whether this is best for perhaps Richard, perhaps Ken. As I read through your information on the different types of fire barriers that are in use in many different plants the question comes to my mind of how are we now -- how is industry now certifying those materials from a fire protection standpoint?

We certainly had substantial issues, I think back in the '80s, on certification. What are we doing different now to have good certification data and are the standards to which you are certifying adequately defined? I'm not sure who should address that; I thought Ken or Richard, but whoever.

MR. MUENCH: I'm not familiar with the technical specifics of the certification requirements, but I can tell you that we are -- our material is certified to the accepted criteria. But I don't know the specifics of that.

MR. DONAHUE: It may be a good question from an industry. There's quite a few different types of fire barriers used by Harris.

COMMISSIONER LYONS: I was frankly amazed by the number of fire barriers.

MR. DONAHUE: The fire barrier systems that we're using today both Hemyc, Thermo-Lag and Mt and as we've gone to several other products we've been using the existing fire codes and fire test protocols that have promulgated over the last several years.

The key items are know your configurations, test your configurations, install them as you test them. If you do that, all of these fire barriers typically are very good and meet the standards, but you have to do all four of those. And that's probably our biggest lessons learned from probably some of these other one-time acceptable fire regs.

So, we're trying to apply basically that logic on anything we do going forward and if we pick a new fire barrier because we deem that's the right way to add separation and we've added two different other products.

We have been able to maintain many of the fire barriers that we had in the plant. We're just using them in now a compliant mode by the way they're physically installed and tested.

COMMISSIONER LYONS: From what you're saying, there is a solid understanding of what the criteria are and how to do the tests? So, there should not be a debate on tests that are done today?

MR. DONAHUE: We are doing -- we understand the test protocols as the OE has been propagated over the last couple years. In particular on the ones like I talked about on my plant are the ones we have in our facilities. We have done many of those tests with independent labs.

COMMISSIONER LYONS: I'll be coming back for more questions, but let me just try to get in one more. I guess, Joe, this would be for you.

You mentioned in evaluation of Harris you mentioned that you are to a point where your fire PRAs you believe are acceptable for use.

I'm curious, though; acceptable by what standard? It's another standard question. Are those standards confidently defined in your mind?

MR. DONAHUE: We used Reg Guide 1.200 existed Rev and Reg Guide 1.200 Draft Rev. 1 and used those as the standard, which are the industry propagated standards.

Using both of those information, which I know the staff is about ready to propagate the Rev. 1, we then graded our application consistent with Category 1, 2, and 3; three being the highest. From that peer review we used that standard.

So, not only as a basis of our fire PRA the 6850, we then came in and applied Reg Guide 1.200 Rev. 1 -- the draft of Rev. 1 on top of that.

We've given some feedback on some of the differences. That's the standard we're using. Again, trying to use the latest standards that are propagated in the industry.

COMMISSIONER LYONS: Thanks. I hope we do have another round.

CHAIRMAN KLEIN: Yes. There will be. Commissioner Svinicki?

COMMISSIONER SVINICKI: Thank you. I appreciate the presentations. As I begin to look more deeply into this issue, I appreciate the status update. I'm listening intently and the candid assessment that we're hearing today is very helpful to me. So, I'm mostly in a receive mode today. But I did have one question, Ken.

On your slide 5 you talk about a shortage of trained risk personnel. I have

heard discussions that as we have so many sites that move forward it may be a circumstance where everyone is scrambling to hire just a handful of a few experts that exists.

Is this shortage of personnel serious enough that you worry that it would jeopardize our ability to move forward on the kind of schedules that we're thinking about?

MR. CANAVAN: Short answer, yes. I think it would be the current schedules that call for even staff review of the large number of submittals that are coming, I think are -- it's a lot of work.

On the industry side, the number of submittals being developed over the course of the next several years really certainly pushes the existing resource pool to its limit.

And I'm aware of some studies done by the BWR owners' group to look at the number of resources over the course of the year and when peak resource loading occurs.

Based on that study, I would subjectively say it will be difficult to meet that resource burden with the existing personnel. At the same time, we are developing new personnel.

COMMISSIONER SVINICKI: Okay. That was going to be my other question. Is anyone doing anything about this shortage?

MR. CANAVAN: Two things. The first is we're bringing new risk professionals in. We're also training existing risk professionals in the ability to do

fire PRAs.

That's through the NRC course as well as the NRC/EPRI course which is offered jointly by NRC/EPRI and there's also some vendors that offer a similar course.

COMMISSIONER SVINICKI: How long is that course if you're already working in the risk field and you want to learn how do fire PRA?

MR. CANAVAN: The course is three days to five days. They break it down into several sessions depending on what particular items -- selected areas of focus you're interested in.

Also, EPRI has a forum for PRA professionals to exchange fire related information on the PRAs. So, basically to ask an expert a question or to participate in a technology exchange forum.

COMMISSIONER SVINICKI: Okay. And that's, again -- to make sure I understand, that's people who are already experts in PRA, but it is to give them these techniques then for fire?

MR. CANAVAN: That's correct.

COMMISSIONER SVINICKI: Thank you, Mr. Chairman.

CHAIRMAN KLEIN: Joe, on your slide 2 - and I, like Commissioner Lyons, had also visited the Harris plant and I thought it was very good where you're looking at case by case of where fires might occur.

One of the things that I've noticed both in GAO's study and others that a lot of the fires are not necessarily in the reactor building. A lot of fires occur in turbine

buildings during repairs and maintenance and shut down periods.

So, when you look at the number of fires that occur it's a little different. Not all fires are created equal. I guess the question is when you look at the operating experience and you go through a PRA how do you factor in those - what I would call - non-operational fires; fires that occur either in switchyards during maintenance or in turbine repairs, welding; those kinds of things. How do you factor those into 805?

MR. DONAHUE: I really can't answer that directly. In the case of the plant specific in Harris, the turbine building is an area we look at because we do have cable that goes through there. So, there has been -- we take a look at fire initiation rates and some of that is in there.

From a risk perspective, the balance of plant side, unless it affects loss of power, which then affects other initiating events, that is not directly addressed in the fire PRA at this time.

CHAIRMAN KLEIN: You had also indicated on slide 3 that you looked at about 4,000 scenarios. And I think you said in your testimony that you spent about 50,000 hours, I think, in your 805 assessment.

What kind of lessons learned do you think would be transmitted that the next study -- would it cut it in a third or be as long?

MR. DONAHUE: Our thoughts on the PRA piece itself, it might be in my mind maybe 80% of the numbers we used. It's very plant specific when you do the modeling.

As Oconee mentioned some of the time in that 50,000 was in support of industry activities and being as open with our peers and that does add time. I think probably the biggest lesson we learned was if you complete the safe shutdown validation effort, whether it's an assessment or a redo and then enter the PRA process, you limit a whole set of iterations. That's probably the biggest lesson learned. I think David mentioned that, also.

In our fleet approaches we move across our other four sites, we are done and complete all with the exception of one of our plants the safe shutdown and that will be complete shortly. And then we've moved into the fire PRAs.

At our house, we've also ensured our internal models have been as good as they can be before we go to fire PRA, so we did not have to iterate on those. Those were a couple lessons learned. If you've got a good, solid internal base model, you've got a good understanding of your safe shutdown analysis consistent then with the rules we're now using for multiple spurious operations.

You put that into that then start your fire PRA. That will be a shorter period of time because you have less iterations.

CHAIRMAN KLEIN: Dave, you mentioned that the 805 works good for older plants. What about a newer plant?

MR. BAXTER: I think it will work well for a newer plant, too, but newer plants probably were deterministic criteria since they were designed and built later and they were built under new understandings of criteria and different interpretations.

So, I would think it would be easier from a newer plant standpoint. When we look at going across our fleet and Oconee is due in 2009, McGuire comes right behind it and Catawba comes right behind it.

When we compare our sites, Catawba is the newest and we believe we'll spend much less effort at -- we'll spend a lot of effort at McGuire, but much less effort at Catawba, which will be the third one.

Besides having the lessons learned just from the design of the plant it will be easier to implement?

CHAIRMAN KLEIN: I've got a question for Ken along that similar line. As the NRC looks at other reactors like NGNP, do we know enough to apply PRA towards that reactor for the fire protection?

MR. CANAVAN: For the fire protection? We're working on risk informed frameworks for the next generation of plants. I think -- and that includes NGNP. I think that the existing methods would apply, especially since we are making methods that are state of the art.

Depending on the construction of the plant, how it's built and how it’s designed and how many passive features it relies on, there may or may not be a need or a role for fire protection; risk analysis, that is.

In other words you can literally design it to a very small risk threshold. It really depends until we have a design on paper, but the principles apply.

CHAIRMAN KLEIN: Great. Thanks. Commissioner Jaczko?

COMMISSIONER JACZKO: One of the nice features of NFPA

805 -- we referred to it often as a risk informed performance based rule, but it really is a performance based rule. I think sometimes we get a little bit caught up in that and we've talked and focused a lot on the PRA, but the PRA is primarily needed in NFPA 805 in order to have a change process that doesn't require NRC approval.

So, the PRA is not crucial for implementation of 805. I think it's important that we have that information on the record because, I think, we've talked a lot about the need for the PRA.

And, certainly, It is a method if you choose under NFPA 805 to go to the performance base rule rather than -- the performance based tree, if you will, of NFPA 805, rather than the deterministic tree that PRA is one of the methodologies to do analysis and the engineering analysis that you would do under that.

I guess perhaps I could ask the question this way. One, is anyone considering using NFPA 805 and following the deterministic path, which is in many ways comparable to Appendix R, but gives you a framework to do the analysis and to do the methodology and to do the recalibration, if you will, of what the state of fire risk is or fire areas are within the plant? Okay.

My next question, then, I guess would be on the role of the performance based side. So, if you go away from the deterministic side and the PRA becomes a little bit more dominant there.

Maybe you could talk a little bit and answer a little bit what role PRA really plays in that and can we make progress and are there other ways to identify the

areas of significance and identify the fire areas, identify the performance kind of measures without using the PRA that might get us to a resolution faster?

MR. MUENCH: I wasn't sure if I heard the beginning of your question. Can I ask you to repeat that?

COMMISSIONER JACZKO: Sure.

MR. MUENCH: I didn't understand the beginning of the question.

COMMISSIONER JACZKO: I'm sorry. As I understand NFPA 805, basically you have two options. You can go deterministic route and the deterministic route essentially -- if you go the deterministic way, basically it means you've got to show for -- essentially you have to show the Appendix R type requirements; the three criteria for a safety system.

Now, there's an option -- another option, which is to go to the performance route where you come up with a series of performance measures which the standard goes through and defines in general terms what those performance kind of metrics and measures are.

Now, part of a tool that you can use to do that analysis is PRA, but it's not a requirement that you use PRA. You can use other analysis and engineering methodologies.

So, if we were to not rely so much on the PRA because it's really only required in the rule per se for the change process. Of course, we don't need to have a change process to begin. That's something that's a benefit and advantage later.

Are there other methodologies and techniques to do that analysis under the performance method that would allow us to get to resolution quicker?

MR. CANAVAN: I think I understand the question.

COMMISSIONER JACZKO: My understanding may be slightly incorrect on the rule.

MR. CANAVAN: There might be some other ways to assess significance of an area or a component or a suppression system within an area, like combustible loading, for example.

The problem is the fire risk, the real true risk, is driven by not only the amount of combustibles, but the sources, the distance of the sources, the availability of suppression, all tied together.

So, one single item -- one single element doesn't override -- doesn't tell you which area is more significant than another. Some area might have low suppression -- some area might have low combustible loading, but very good suppression. Some other area might have high combustible loading, but very good suppression. Which one is worse or better?

I think the short answer is always being -- subjective area being questioned as to why you chose what you chose. The PRA is the one place that allows you to integrate all those features and to assess them equally and then to make a measure.

Okay, this is the place I rely mostly, for example, on Operator action, so I don't want that. So, I'm going to put in an incipient detector system so that I have

earlier notice because I know I rely on the Operators. So, I think any other mechanism would allow you to be too subjective and it would be questioned especially in regulatory space.

COMMISSIONER JACZKO: Anybody else want to comment on that? We talked a little bit about enforcement discretion. I know we have -- the staff has proposed an additional enforcement discretion, I believe, with NFPA 805.

Maybe you can talk a little bit about -- to be honest, you've heard me say it before, I'm not a big fan of enforcement discretion. I think I did one of those things where I chiseled in stone somewhere that I will never again agree to enforcement discretion in the area of fire protection.

At this point, I'm not intending to blast out that stone chiseled statement. But maybe you can at least talk to me a little bit about what you see the need is for enforcement discretion at this point and what we'll be accomplishing by granting any additional enforcement discretion for the plants that have committed to NFPA 805?

MR. MUENCH: Let me start off there. I think as we said before and as you said before it's very important that we put the fire protection issues behind us once and for all. And that we have a more consistent set of license basis out there that our engineers and your inspectors know consistently what we're looking for.

And in order to do that we think it's important, number one, that we learn all the lessons from the pilot plants. And it's not just from the PRA modeling, but it's

also from the development of the license application.

It's from answering the request for additional information and give that all to the ensuing plants so that they can have the benefit of that or else it will be changing as the review of the ensuing plants go on.

But more importantly than that we talked about resources, PRA resources. We think it's also very important that we make the best decisions we can based upon having the most realistic PRA modeling, fire PRA modeling.

We have a constraint in our industry with PRA resources. So, we want to make sure that you need them to review our applications and we need them to develop the models. And oh, by the way, there's 1.200 activities going on and some of the non-NFPA 805 plants will be talking about limited number of license amendment requests and exemption requests that may also be using risk insights also. And they are coming in in the same time frame.

If we follow the time table that the staff has proposed for the alternate strategy they'll be coming in the same timeframe as the last of the NFPA 805 plants.

So, we're worried mostly about resources and our proposal will move them all back to allow us to use those resources versus just the first set of plants because all that does is move that set of plants -- I think there's -- if I remember the numbers correctly --

COMMISSIONER JACZKO: I don't have very much time. The question I'm trying to get at -- that's more a question why you think you need more

time to do it.

I'm trying to understand what enforcement discretion does to ensure that this will get done faster. That is, in my mind, the only reason we would invoke enforcement discretion is to provide a mechanism to get compliance more quickly. And nothing I heard from what you said gave me an answer to that question.

MR. MUENCH: It was more meant to address your concern earlier making sure we get this behind us as consistently as possible so that it stands the test of time.

COMMISSIONER JACZKO: In my mind, enforcement as a regulator is an important tool in getting us there. So, when I hear requests for enforcement discretion I'm assuming there's a reason that it's going to get us there faster.

Can you give me a reason why you think that will get us to completion faster?

MR. MUENCH: That was not the logic that I was using. I would agree with that.

COMMISSIONER JACZKO: Okay. No more questions. Thanks.

CHAIRMAN KLEIN: Commissioner Lyons?

COMMISSIONER LYONS: A question for both Joe and Dave at your two plants. As you went through the NFPA 805 process, did you uncover any outstanding regulatory non-compliances?

I know at least in the case of Harris that you found a number of areas that you felt should be improved, but was there anything that rose to the level of a

national noncompliance that you came up with during the 805 review or that we came up with? I'm not aware that the NRC did.

MR. DONAHUE: As we go through the safe shutdown reanalysis, we have at several of our plants found some limited cases where we did put it in to compensatory action, put it in the corrective action program and in a couple of cases we've even made limited modifications. Generally when we got in and looked at detailed fire routings.

In the case of Harris, many of our non-compliances we found were probably as much enveloped around the Hemyc and the Mt issues, but we have found some cable and cable separations that we need to put in place to address those.

But they have been enveloped by the other compensatory actions we've put in place. But those get entered into our corrective action program.

COMMISSIONER LYONS: That was my next question. Were they enveloped in the compensatory action?

MR. DONAHUE: Entered in the corrective action program and they are part of our transition plan in 805. So, when we say we are compliant at the end of 2010, we are there and we're full in compliance with those ones that we need to do to be compliant with our LAR.

COMMISSIONER LYONS: Dave?

MR. BAXTER: Likewise at Oconee, as we went through the transition and as we've looked at things we do have some open issues in the corrective action program that we will get finished by 2010 to be compliant.

I don't know that I could say that we actually were incompliant with anything, but there were certainly several enhancements. I'm not aware of a strict incompliance that we had.

I'll go back and check with my staff because I don't know every detail about the 805 transition.

But again, anything we found that was questionable went into the process, went into the corrective action process. And again, a lot of those were enhancements.

COMMISSIONER LYONS: Thanks. A question for Jim. You expressed I believe in your remarks, a fair bit of concern about the compensatory actions that have been taken, like fire watches.

Can you give me a little bit more of a feeling as to why you view such items as fire watches to not be appropriate or not be effective?

MR. WARREN: Well, I guess I can refer to GAO and years of NRC statements and reports and policies where it was clear that these at one point were named interim measures.

As I cited earlier, Congressman Dingell had been led to believe in '93, I think, that this was going to be a short-term kind of situation. So, by its very nature, fire watch is subordinate to prescriptive measures.

I mean, GAO goes into some detail to describe how NRC staff had indicated weaknesses with long-term use of fire watch. So, I mean, there's a pretty good history there of concerns about fire watch in particular and in terms of

OMAs some similar problems and then some.

So, it's very clear. I mean, there have been many pronouncements over the years that these were considered and were intended for interim measures, but they become a permanent part of the regulatory scheme. It's just not a sufficient and not a permitted activity.

COMMISSIONER LYONS: I appreciate your comment. I guess in my mind the presence of a fire watch, the presence of additional people actually in the facility available if necessary to take action is as advertised: an effective compensatory measure.

MR. WARREN: Well, if there were extra people in addition to physical protections as prescribed then yes, that would be a plus. But when you're trying to substitute human activity with a roving fire watch as someone is in a fire area for a very short period of time on a rotating basis, you cannot substitute human activity for the physical protections that are prescribed in a regulation.

COMMISSIONER LYONS: Well, again, I appreciate your point of view. At least in my mind certainly I would like to move towards the permanent barriers where possible.

I recognize that in many of the older plants it may be extraordinarily difficult or impossible to do it. In my mind the compensatory measures if carefully designed can be -- have proven to be - certainly based on the fire records -- to be highly effective. So--

MR. WARREN: Just one more point if I might on that,

Commissioner. The proven effective is obviously a big area of concern, too. GAO discusses some of this, too. The whole issue is the fire watch in OMAs have not been codified and approved through NRC processes as effective.

In fact, part of the big revelation is NRC does not even know all of the times and places where OMAs and fire watches are even being used.

So, public concern comes in when the agency does not even -- is not even aware of what the industry is doing.

COMMISSIONER LYONS: Just one more comment. To the extent that I have discussed this with a number of our resident inspectors, whether or not there is a central database at headquarters of these. When I discuss it with a senior resident or a resident at a plant they know very well what needs to be done and it is part of their inspections, which gives me the confidence that it is receiving the necessary degree of oversight.

Whether or not there is a central log here at headquarters of those is not of great concern to me. I'm far more concerned that the people on the ground responsible for the safety know exactly what they're doing and I've been convinced that that is the case. I'm over time.

MR. WARREN: One more quick reply to that, if I might, Mr. Chairman?

CHAIRMAN KLEIN: Short.

MR. WARREN: We just heard a description from Duke and Progress that they continue through their 805 process to identify additional

noncompliant areas.

I think that in itself is an example of the fact that you cannot be comping every vulnerability if you don't even know -- the inspectors and the companies are not even clear on where all the vulnerabilities are.

COMMISSIONER LYONS: We heard they uncovered them -- they uncovered ones that were covered by compensatory measures. But again, we're long enough on this. Thank you, sir.

CHAIRMAN KLEIN: Well, thank you very much for your testimony. Obviously, this is an issue that is a concern to, I think, all of us. And we look forward to bringing this to closure as rapidly as possible.

Thank you very much. Now, we'll move into the next panel for the staff. Thank you.

Panel 2

CHAIRMAN KLEIN: Well, obviously, you heard a lot of the opening comments and the intervening discussions. And so with that in mind I think we're probably ready to hear from the staff. Bill, would you begin?

MR. BORCHARDT: Thank you, Chairman. Good afternoon. We have two principal messages to convey today.

First, that it is our firm belief that the country's operating nuclear power plants today are operating safely and have been since the fire protection

regulations were established 27 years ago.

Second, we believe that we are now working on a proactive approach to bring the current issues to closure. We'll be the first to admit it's long overdue.

While tough issues remain, we believe that they are solvable and that this briefing is going to focus today on a look forward at how we're going to close these issues in an open and a transparent manner.

Even though the two speakers today are from the Office of Nuclear Reactor Regulations, I just want to reiterate the point that this is truly an agency wide effort and activity.

The offices of Nuclear Reactor Regulation and Research, the Office of Enforcement, all the regional offices, Office of Information Services and the Office of Public Affairs are all intimately involved in the activities that have been taking place and on the path forward.

Bringing fire protection back into a stable, regulatory environment will require the hard work of all these offices as well as other parts of the agency over the near future.

With that, I'll turn to Jack Grobe.

MR. GROBE: Thanks, Bill. Slide 2, please. My name is Jack Grobe. I'm Associate Director in the Office of Nuclear Reactor Regulation for Safety Systems and Engineering. With me today is Mark Cunningham. Mark is Director of the Division of Risk Assessment, which also includes fire protection activities in the Office of Nuclear Reactor Regulation.

We are here today representing the NRC's Fire Protection Steering Committee. We have the full committee here and I'd like to introduce them. Steve West. Make yourself know, Steve. Thank you.

He's the Director of the Division of Reactor Safety in Region III. Steve brings a great spectrum of experiences to the committee in that in his past life he was responsible for fire protection engineering here in NRR and he has since been responsible for all aspects of reactor inspection in the field. So, he has great experience.

Christiana Lui is the Director of the Division of Risk Analysis in the Office of Nuclear Regulatory Research who has responsibility both for risk as well as fire.

And Stu Magruder is our enforcement guru. He's the Deputy Office Director for the Office of Enforcement.

The Executive Director for Operations established the Steering Committee in 2007 to facilitate resolution of key fire protection issues and to ensure effective interface with the industry and other external stakeholders.

The overall goal of the Steering Committee is to ensure that the staff completes the necessary actions to return fire protection to a normal, predictable regulatory environment.

I realize we're short on time so I'm going to try to go quickly. Slide three, please.

Fire protection remains a significant safety focus for the staff. Approximately one-half of the core damage risk at operating reactors results from

accident sequences that initiate with fire events.

Our presentation today will focus on operating reactor issues. Fire protection at new reactors will be simplified through designed-in separation and isolation of redundant safe shutdown systems, extensive use of fiber optic cable in control systems, as well as passive plant designs that have few active components necessary for safe shutdown.

The Steering Committee focus has been on the four issues that Mark will cover today in our presentation. The committee has met regularly with the staff and frequently with the industry and other external stakeholders.

Progress is being made in all of these areas and the Steering Committee has issued a closure plan documenting key milestones and deadlines to bring these issues to closure.

Few actions remain to resolve fire barrier issues and Operator manual actions. While there is more work to do on multiple spurious operations and implementation of NFPA 805, the path toward is defined, well understood and being implemented.

I'd now like to turn it over to Mark.

MR. CUNNINGHAM: I'm going to be covering this afternoon the closure path for three remaining fire protection issues, as well as the process for more broadly risk informing fire protection activities.

The first specific issue is fire barrier performance. NRC regulations mandate that key equipment is protected from fires and fire barriers are one

mechanism to accomplish this protection.

Over the last two decades issues have arisen and been subsequently resolved on certain barriers including Thermo-Lag. The staff is in the process now of resolving the issue on the last -- the last known barrier issue which, of course, is connected to Hemyc.

Inspection reports and subsequent experiments by the Office of Research indicated that Hemyc performance could be compromised if the material was not installed properly.

As a result, the staff took actions including the issuing of a generic letter in 2006 to have licensees review their fire protection programs, identify nonconforming conditions and take appropriate actions.

Licensees responded -- licensee responses indicated that 16 units used Hemyc. Of these 16, six are not transitioning to NFPA 805. These licensees thus identified combinations of facility modifications and licensing actions to resolve the issue.

For these six issues, the staff plans to inspect the closeout activities and document the results by the end of this year. Slide five, please.

Operator manual actions can be used under certain circumstances to help provide the necessary protection from fires. After inspections identified a number of inconsistencies in how licensees were crediting operator manual actions, NRC took a number of actions.

We issued a Regulatory Information Summary in 2006 that clarified staff

expectations with respect to compliance, reiterated the need for establishing compensatory measures, established a timetable of March 2009 for completing corrective actions.

NRC also issued a guide for evaluating -- for the staff for evaluating the acceptability of manual actions. We also changed guidance used by inspectors to help focus their Operator manual action inspections.

The staff has been using this guidance to ensure that manual actions credited by licensees are both feasible and reliable. The staff will be closing this issue by assessing plant specific corrective actions. We expect to complete this in 2010. Slide 6, please.

In 2006, the Commission provided direction to the staff on the resolution of fire induced circuit failures. A few years before that experiments had indicated that certain types of circuit failures, which were much more likely than had been previously understood.

The staff provided its response to the Commission direction in SECY-08-0093 just from last month. The paper describes acceptable methods for protecting a plant's safe shutdown capability from circuit failures.

It describes possible methods for ensuring that mal operation of other equipment does not compromise the safe shutdown capability and it proposes a revision to the enforcement guidance associated with circuits.

The staff is proceeding to finalize the acceptable methods -- the set of acceptable methods for protecting safe shutdown capability from mal operation of

other equipment.

We'll be drafting guidance on these methods and holding public meetings to facilitate the understanding. We expect the guidance to be completed by early next year.

Once the guidance is completed the licensees would have three years to complete the needed actions. The timing would be about the same as those plants transitioning to 50.48C as directed in the SRM.

The staff is also initiating experimental research on direct current circuits. The purpose of the research is to determine if failure modes of direct current circuits are similar to those found in alternating current circuits that have been previously tested.

The initial public meeting on this will be a discussion of the test plan and scheduled for September of this year. Slide 7, please.

I'm going to change now from a discussion of specific technical issues to describing a process by which issues - like we've talked about today - can be addressed using more modern technologies. This, of course, is 50.48C, that was endorsed -- issued by the Commission in 2004.

This rule endorses National Fire Protection Association Standard 805 as an alternative to traditional fire protection regulation.

50.48C is risk informed, meaning that it provides a better safety focus as performance based, which gives greater latitude to licensees to deal with small risk issues and provides better guidance on when issues must be brought to the

attention of NRC. To date, 47 of the 104 units have committed to the transition.

As you've heard earlier this afternoon, the staff has received proposed license amendments from the two pilot plants and our initial acceptance review is underway. We have a completion date of the end of this month to provide -- to issue our acceptance reviews.

To ensure that licensees and the public have a clear understanding of the staff's work we are improving the infrastructure for remaining reviews and communicating it widely. I'll discuss that in slide 8.

In parallel with and learning from the pilot plant amendment reviews, the staff is finalizing its review infrastructure. This has several parts.

Technical methods, such as NUREG/CR-6850 will be updated by the Office of Research in accommodation with industry experts. I believe the goal is to have that updated by March of next year.

Fire PRA standards are being endorsed in a revision to Regulatory Guide 1.200 that's now out for public comment. New regulatory guidance is being developed.

This guidance includes staff acceptance criteria for the initial acceptance reviews, a new standard review plan focused on the review of 805 applications, a template of the safety evaluation report that the staff would write, and inspection guidance for those plants once they've exited the 805 amendment review , we cal that post transition inspection guidance.

Given both the large number and the complexity of the 805 applications, the

staff is using state of the art planning tools to help us do our work. We've adopted the tools now being used by the Office of New Reactors to help us plan and implement the fire protection amendment reviews.

In recognizing the considerable interest in nuclear power plant fire protection issues, the staff is refocusing some of its communications efforts.

The staff will continue, of course, to hold public meetings to share the results of the pilot plant reviews.

The staff will continue to use the frequently asked question process on emerging technical issues and their resolution with the principle audience there being the non-pilot 805 plants.

The staff has also updated the NRC's website to make it easier to find information on fire issues. This update is focusing more on the four issues that we're talking about today.

In fact, this update went live this morning thanks to help from the Office of Information Services and OPA. This update is a first step in a larger scale improvement to the Web site on fire issues that will provide more general background information on fire issues.

What we have so far is more focus to the people that are intimately involved in 805 applications, for example. And it will discuss fire issues beyond those just for operating reactors. Slide 9, please.

The staff is implementing its 805 closure plan by establishing an efficient, well defined process. We expect to finalize the guidance and standardize our

review process on the same schedule as the pilot plant reviews.

We'll be updating the web site and using public meetings to communicate the results and the lessons learned.

With this in place the staff expects to transition to what we might call a more routine licensing process, if that's possible for fire protection, but that would involve licensee submittals, staff reviews, implementation of changes by the licensees and inspections to ensure the adequacy of the changes.

With that, I'll turn it back to Jack.

MR. GROBE: Thanks, Mark. Slide 10, please. Fire protection at operating reactors has had a long, complex and sometimes contentious history. The goal of the Steering Committee is to ensure that the staff takes the proper actions to return fire protection to a stable, predictable, routine regulatory environment.

While some of the necessary actions will take some time to complete progress is being made and there is a clear path to closure for each of the issues.

Finally, our interaction with the industry and other stakeholders has been positive and constructive and we will continue to reach out for input and to assure clarity of expectations.

This completes the staff presentation and hopefully we've left enough time to respond to your questions.

CHAIRMAN KLEIN: Thank you. I guess I'll start off with Bill as EDO. Do you have a closure plan with milestones and deliverables?

MR. BORCHARDT: What Mark attempted to outline is that plan. There's some additional work that probably needs to be done, but I think that's the major strive that we're trying to make now is to define what success is for this program, have deliverable milestones and then get the closure.

CHAIRMAN KLEIN: Realizing that it's almost finished, what do you believe is a reasonable date to finally lay this to rest and address both the IG and GAO issues?

MR. BORCHARDT: Well, the final inspections that Mark alluded to, I think, were 2010 were the last of the actions related to this, although many of the activities will be done well before that.

CHAIRMAN KLEIN: You could hear from the previous discussion about compensatory measures. Do you believe that those are reasonable and are we putting people at risk with those compensatory measures?

MR. BORCHARDT: Our assessment and as Commissioner Lyons mentioned earlier the almost daily oversight of the compensatory measures at each of the 104 reactors give us confidence that the plants are being adequately protected against fire and that we're comfortable with its current operational status.

CHAIRMAN KLEIN: I have a few questions for Mark. Why would a plant not go to 805?

MR. CUNNINGHAM: The advantages of 805 from what I understand are most -- it becomes most appealing to the plants and perhaps to the oldest. If you were a licensee that owns a fairly modern plant one of the last of the plants of

the 104, you may already have a great deal of physical separation.

You may have a lot of features that make it less attractive, if you will. So, the newer designs would tend to have less -- fewer of the issues that in a sense drives somebody to an 805 type of approach.

CHAIRMAN KLEIN: One the numbers that we heard is 47 plants intend to go to 805. So, there's probably a shade of gray that some haven't decided and then some probably will decide not to go. Do you have a breakdown of those three groups?

MR. CUNNINGHAM: The 47 are the ones that have committed to us in writing that they intend to transition. We hear of at least 20 or 30 others that are doing substantial work to improve their fire PRAs.

And so, I think that's perhaps a leading indicator that they could be edging towards an 805 transition because it's clear that one of the big investments in 805 is performing the fire PRA.

So, there could be -- that middle ground could be those ones that are out there actively improving their PRAs. I've heard numbers of 20 to 30.

CHAIRMAN KLEIN: Okay. As we move forward to the new reactors -- and this could either be a Mark or a Bill question probably -- how will they address the fire issues? Will it be 805 or will it be through another mechanism?

MR. BORCHARDT: I would be surprised if they're not able to meet the deterministic requirements for fire protection. If you're building a plant from the

beginning and you have clear regulatory requirements you can design that in.

Much of what we're dealing with today is the result of having plants that were already constructed and then you create fire protection regulations which are physically impossible in many circumstances to meet.

And so you get into compensatory measures and the need to do a more site specific detailed analysis in order to prove that there is a safe situation.

So, for the new reactors, I will be disappointed if they don't just meet the deterministic requirements.

CHAIRMAN KLEIN: I share a view similar to Commissioner Lyons having gone through several plants, looked at their plans and their programs and talked about the compensatory measures.

It doesn't seem to me that there's a great risk with incorporating those compensatory measures. And so the question is why isn't that a part of their fire protection plan?

In other words, rather than giving people exemptions to say this is your plan to do these actions. Why did we not do that?

MR. GROBE: I'm not completely sure I understand the question. Why did we not impose similar conditions that they're now implementing on an interim basis?

CHAIRMAN KLEIN: Right. Rather than calling them interim for 15 years why didn't we just say, "This is your plan" and not give exemptions and say this is how we expect you to operate?

MR. GROBE: The compensatory measures -- typically we do not depend in the design of the safety provisions for nuclear plants on human actions. We try to design in the safety conditions.

So, we wouldn't typically specify a safety requirement that was solely dependent on a human action, similar to the automatic actuation of safety systems. I think I'm answering your question; maybe I'm not.

CHAIRMAN KLEIN: We've given exemptions for a long, long time. And so I guess my question is why didn't we--?

MR. BORCHARDT: I'm looking at Steve West who might have a better historical basis. If you have something to add; if not--

MR. WEST: The compensatory measures are actually part of the licensee's fire protection plan, so they're built in to be used and relied upon when there are problems identified with the fire protection features that are put in place and installed.

It's true that there weren't intended to be permanent measures as Jack was explaining. Most of the exemptions don't deal with compensatory measures. They deal with situations where a licensee is unable to meet the literal compliance with the rule where it says you have to have 20 feet of separation and they may have 18 feet.

So, you approve an alternative to the 20 feet. Maybe they put in an extra sprinkler system or something like that. So, there's not a real link between the comp measures and the exemptions.

CHAIRMAN KLEIN: I think part of the problem that we have in this arena is articulating the expectations for a long period of time.

MR. WEST: Right. I agree with that.

MR. BORCHARDT: I think the lesson learned and we've been focusing on this lately is this idea of defining what success is before you head down the path into a project. And I don't think we did that many years ago when we started down this path.

CHAIRMAN KLEIN: Thanks. Commissioner Jaczko?

COMMISSIONER JACZKO: Well, I guess I have a couple quick questions. I might follow up on the Chairman's point. I think I'll start with that. I would probably turn the question around the other way.

What is the purpose of our existing regulations? Maybe you could comment on that in fire protection.

MR. GROBE: I'll take that. The purpose of the existing regulations is to make sure that the plant is maintained in a safe condition such that it could be safely shut down.

It's constructed with a series of defense in depth characteristics: prevention, identification of fire suppression and the last criteria is specific protection of one safe shutdown train.

The specific issues that we've been dealing with where there are compensatory actions affect only a limited number of those defense in depth situations.

So, there's not a whole lot of safety significance associated with these deficiencies. That's why a compensatory action is sufficient in the situation for a period of time until the issue is resolved.

COMMISSIONER JACZKO: When we approve a compensatory measure, do we specify a time period for which that compensatory measure is acceptable?

MR. GROBE: No. There's, I think, two programs that we have - the security program and the fire protection program where there's compensatory measures actually built into the program.

If a detector is out of service for a period of time there's a compensatory measure specified, but the control of return of that detector, for example, is under the corrective action program where the corrective action, the timeliness of it is commensurate with the safety significance of the deficiency.

COMMISSIONER JACZKO: What is the maximum time that we currently have an interim compensatory measure that is currently being relied upon?

MR. GROBE: I don't know the answer to that question.

COMMISSIONER JACZKO: Can you provide that answer?

MR. GROBE: Sure. We'd be happy to.

COMMISSIONER JACZKO: Would you guess it's zero to five years? And you can correct it if it's wrong.

MR. BORCHARDT: That's probably right after we established the

regulation – 20 some years.

COMMISSIONER JACZKO: The staff in the background material provided your fire protection closure plan and I just want to go through some of the milestones in here. On the electrical raceway fire barrier closure -- and this is a question probably perhaps the easiest is just to do this as a general question.

But if you can provide resource estimates for what it would take, for instance, to accelerate some of these milestones. I'm looking at the fire barrier issue. The last milestone is first quarter of 2010 and that's to complete the documentation of essentially all the Hemyc issues and other fire barrier issues.

What resources would it take to accelerate that say by a year, which currently the staff is saying in 2009 we would inspect licensee Hemyc actions related to the generic letter of 2006. So, again, what would it take to accelerate that activity? What resources?

And I guess if you could provide those -- something like that for all of these activities, I guess, the circuit failure. I guess I would say I'd be most interested in circuit failure and the fire barrier.

I guess for the circuit failure we're looking at 2013 3rd quarter for completing circuit failure actions, inspections and document results. So, that's still a ways off into the future. That one in particular, what the resources would be to accelerate that one probably by a couple years. What would it take to do that?

The Operator manual action similarly, I think, 2010 second quarter is the last date. So, what would it take to accelerate that one by a year?

And I won't ask you about the NFPA 805 because that in large part depends on licensee submittal. So, I think that's one that's perhaps outside our control.

MR. MALLETT: I'd like to start this one. We appreciate your questions. I think they're very good questions. What we have to do now -- the Steering Committee has proposed this closure plan.

I believe what we have to do now is sit down and decide those very questions you're asking. Are those the right dates? What will it take? Are we sure we can deliver those items on the dates?

For example, on the fire barrier one you picked, we believe that the Hemyc issues as far as licensing and inspection will be done the end of this year and so the issue is how do you bring that to closure sooner? I think we can do that. I'd rather not give you an answer here.

COMMISSIONER JACZKO: That's fine.

MR. MALLETT: I think we owe the Commission an answer and I think we need to take this closure plan and put it in that forum to go back to the Commission to give you that answer.

COMMISSIONER JACZKO: Absolutely. Certainly, if there are ways and I'm asking this now because we are in the process of doing the 2010 budget and we'll be looking at that in the next couple of weeks.

So, getting that information to the Commission sooner rather than later would be beneficial for us to make adjustments if necessary in the budget for --

certainly for '10 and if possible for making some adjustments in '09 where we can.

MR. MALLETT: I agree. I also want to state that we have down on one document our closure plan for the first time in these areas. I think that's a good step forward.

COMMISSIONER JACZKO: I certainly am pleased to see it because once we know what the milestones are, then we can figure out how to do them faster.

MR. BORCHARDT: That's the disadvantage.

COMMISSIONER JACZKO: If we have more rounds then I'll ask a couple more.

MR. GROBE: Just a quick observation. Some of those milestones are controlled by how quickly licensees can install modifications and sometimes that's controlled by outage schedules.

So, it's not just internal resources that drives some of those milestones.

CHAIRMAN KLEIN: Commissioner Lyons?

COMMISSIONER LYONS: Well, the Chairman came close to asking this question, but I just wanted to ask if after having listened to the preceding panel there were any loose ends or particular points that you want to clarify from the staff perspective?

And Dale, you came close to asking that, but I simply wanted to make that an offer.

MR. GROBE: There's one issue that Rick Muench raised and that

has to do with utilizing risk considerations to demonstrate compliance. He's absolutely correct. We have a Commission policy statement and a significant effort by the staff to risk inform our regulations where we can, but those are specific separate regulations.

And you cannot demonstrate compliance with a specific deterministic requirement by saying, "This is a less risky situation, so I'm not going to do anything."

You can do it through licensing action or exemption depending on the way your license is written, but you can't just do it without going through a licensing process. So, that's not an option.

It's not a legal option to utilize risk without some sort of licensing action unless you go to NFPA 805 and 50.48C.

COMMISSIONER LYONS: Any others? A question probably for Mark. I think I mentioned in some opening remarks how surprised I was that one of the first things I was hit with as I came on the Commission was the new Hemyc test data.

Are there any more shoes like that that are still out there to drop on other fire barrier materials? Do we have good confidence that with the other materials that are being used -- and I understand that there's quite a list in addition to the Hemyc and Mt that are used in at least some configurations.

MR. CUNNINGHAM: We're not aware of anything that's at the level of Thermo-Lag and even the smaller level of the Hemyc issue. No, sir, we're not

aware of anything else out there.

COMMISSIONER LYONS: And I guess similar to the question I asked the previous panel, are the test standards well agreed upon now, so that we're not going to get into -- at least I think there was some significant part of the Hemyc problem?

MR. CUNNINGHAM: I think the test standards themselves are a lesser concern than the number of other things. I don't think that's a particular problem.

COMMISSIONER LYONS: A question maybe for Jack or maybe for one of the others. You mentioned fiber optic. I happen to have spent a substantial part of my life working with fiber optics.

I'm a great lover of fiber optics; however, I don't view them as necessarily a panacea to fire issues either from the standpoint of the integrity of the cables or the integrity of the transducer that has to go on the end of the cable to ever do anything.

So, when we talked about fiber optics, on the one hand you'll find me cheering you on. But are we taking at least a skeptical look with fibers to recognize that they are not simply a complete automatic solution?

MR. GROBE: I didn't mean to indicate that fiber optic cables were a solution to fire protection concerns. They fail in a much more predictable way in a fire situation.

So, you don't have this difficult situation with a potential -- depending on

how the insulation is damaged, the potential for hot shorts or shorts to ground. So, that's what makes fiber optics more useful from a fire protection -- looking very narrowly from a fire protection perspective is that you can understand their behavior in fire situations much better.

COMMISSIONER LYONS: The transducer that has to go on the end is going to have a range of failure modes.

MR. GROBE: That's correct.

COMMISSIONER LYONS: And that is being considered in our evaluations?

MR. GROBE: Charlie left. I'm not that --

MR. ADER: I didn't leave. I just moved.

MR. GROBE: Oh, okay. You just moved. Charlie Ader is the Division Director responsible for the fire protection reviews for the new reactors and maybe he can be in the phone-a-friend mode right here.

MR. ADER: I was trying to be in a position to be right behind you. The Commission approved back in the 90's enhanced fire protection which has really the separation.

So, I mean, we are looking at those types of questions. Some of those will get more into the Digital I&C. And you're aware that the transducers are where the controls are.

Jack was referring to -- as he said -- the hot shorts, the cable runs. So, it's a question that's being looked at.

COMMISSIONER LYONS: Okay. I appreciate it. If I could just ask one final question probably for Bill. You've heard various degrees of frustration from folks on this side of the table and we've heard it on that side of the table.

When all this is said and done or as it gets close to being said and done, have you thought about lessons learned from fire protection, say the fire protection soap opera? It's gone on long enough that it almost is a soap opera. Have you considered what some of the lesson should be from this?

MR. BORCHARDT: Well, one of them I mentioned earlier about this idea of having the end in mind as you start down a project and defining success. My personal view is that we're better served.

All the stakeholders are better served by defining what a specific project activity is and what it will look like when you're at the end of that. And then if new issues come up you create a new project rather than having a 25 year-long project that meanders through a long-term resolution.

That's one of the ones that we don't need to do a separate lessons learned on. That's just an approach for how to deal with problems.

I think as we near the completion of this it would be a good idea, an interesting case study in regulatory practices to take a look at the entire history and how we got into such a long and protracted resolution to what is an intricate and sometimes complex, but in a regulatory space shouldn't have been really all that complex and confusing.

So, I think it's probably a good idea for us to have a separate review as we

get near the end.

COMMISSIONER LYONS: I would add encouragement to that. I think a review of the highs and lows to the extent there are would be beneficial to the agency, and maybe to some of our international colleagues, too. Thank you, sir.

CHAIRMAN KLEIN: Commissioner Svinicki?

COMMISSIONER SVINICKI: Thank you. With all the paper in this building it's inevitable that the one thing that you want to have in front of you don't have. So, I'm going to ask this question because it comes along the lines of what Commissioner Lyons was talking about.

Is there anyone here at the table who is familiar with -- because if I'm the one most expert in this we should all collectively shudder in this moment. My understanding is that the Appendix R regulations were litigated, there where challenged in court. Is there anyone familiar with that?

I may be legitimately the person at this table who has most recently read the Court's decision, the outcome of that litigation and this is where I wish I had it in front of me, but I don't.

By my understanding is that the industry had alleged that the agency had promulgated Appendix R with basically the bare minimum of opportunity for the industry and others to participate and comment in it.

If I'm recalling the Court's opinion correctly, they said the sole reason -- and I might be overstating that -- but the principal reason that they upheld the

regulations was that there a robust exemption process and that was the reason why they felt that they could uphold it, but they had some misgivings about doing that, but said there's an opportunity here for industry to come in with a robust exemption process.

They can either make the case that other measures are sufficiently protective or they can meet these regulations and they'll have the opportunity if they can't convince the agency that other measures are sufficiently protective, then they shouldn't prevail and they should have to meet the regulation.

I'm getting some head nodding, but if there's someone who would like to weigh in who knows better terminology for what I just said.

MS. CYR: Well, I think that's an accurate description in the sense that the Court said because the plants had already been built, the fact that you permitted them to have an alternative way to show that they could meet one of these criteria, which was either the alternative safe shutdown system or something that provides you an equivalent level of protection and that that was built into it as opposed to just meeting the three criteria.

It gave you an alternative or being able to demonstrate that you had an alternative -- an equivalent to that alternative safe shutdown condition. And that that was an element of the rule that the Commission adopted and it provided for them to file exemptions within a very short period time, which a large number of plants did.

COMMISSIONER SVINICKI: The only reason I raised it is that

Commissioner Lyons was talking about how did we get here. You're talking about how we should figure out where we want to go from here, but it's useful to have this history.

I think that's a key part of the history. We've talked a lot philosophically about what does it mean to have regulations when you have all these exemptions, but this may be a unique circumstance that contributed.

So, I think it's part of the story of this entire process. Thank you, Mr. Chairman. That's all I have.

CHAIRMAN KLEIN: Thanks. More questions?

COMMISSIONER LYONS: I'll stop.

CHAIRMAN KLEIN: Well, we anxiously await for the closure and we will await Bruce's estimates on what it costs and any efficiencies that we can obtain through associated budgetary actions.

Again, this is a case where lessons I think can be learned and hopefully we won't go down this path in the future and we will keep ensuring public confidence and protect the public and the safety. Thanks.

(Whereupon meeting was adjourned)