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## UNITED STATES NUCLEAR REGULATORY COMMISSION'S

## ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

September 9, 2005

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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS (ACRS)

525TH MEETING

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FRIDAY,

SEPTEMBER 9, 2005

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The meeting was convened in Room T-2B3 of Two White Flint North, 11545 Rockville Pike, Rockville, Maryland, at 8:30 a.m., Dr. Graham B. Wallis, Chairman, presiding.

MEMBERS PRESENT:

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|---|---|
| GRAHAM B. WALLIS | Chairman |
| WILLIAM J. SHACK | Vice-Chairman |
| GEORGE E. APOSTOLAKIS | ACRS Member |
| RICHARD S. DENNING | ACRS Member |
| THOMAS S. KRESS | ACRS Member |
| MARIO V. BONACA | ACRS Member |
| DANA A. POWERS | ACRS Member |
| JOHN D. SIEBER | ACRS Member-at-Large |

ACRS STAFF PRESENT:

| | |
|---|---|
| SAM DURAISWAMY | ACRS Staff, Designated Federal Official |
| JOHN T. LARKINS | Executive Director, ACRS/ACNW |
| CAYETANO SANTOS, JR. | ACRS Staff |
| MICHAEL L. SCOTT | ACRS/ACNW Staff |
| ASHOK C. THADANI | Deputy Executive Director, ACRS/ACNW |

NRC STAFF PRESENT:

| | |
|---|---|
| TOM ALEXION | NRR |
| KIRSI ALM-LYTZ | NRR/IPSB |
| HANS ASHAR | NRR/DE/EMEB |
| RAMIN ASSA | RES |
| RAJENDER AULUCK | NRR/DRIP/RLEP/RL |
| DAN BARSS | NSIR/DPR/EPD |
| TOM BLOUNT | NSIR/DPR/EPD |
| BRUCE BOGER | NRR/DIPM |
| BILL BORCHARDT | NRR |
| KEN CHANG | NRR/DRIP/RLEP |
| YOIRA DIAZ | NRR/RLEP |
| RICHARD DIPERT | NRR/DSSA/SPLB |
| JENNIFER DIXON-HERRITY | EDO/OEDO |
| JERRY DOZIER | NRR/DRIP/RLEPB |
| MARY DROUIN | RES/DRAA/PRAB |

NRC STAFF PRESENT:

| | |
|---|---|
| BARRY ELLIOT | NRR/DE/EMCB |
| GREGG GALLETTI | NRR/DIPM/IPSB |
| GEORGE GEORGIEV | NRR/DE/EMCB |
| FRANK GILLESPIE | NRR |
| ANTHONY GODY | OEDO |
| CHRIS GRIMES | NRR/DE |
| JOHN HANNON | NRR |
| JON HOPKINS | NRR |
| KAIHWA HSU | NRR/DRIP/RLEP |
| AMY HULL | NRR/DRIP/RLEP-B |
| RONALDO V. JENKINS | NRR/DE/EEIB |
| PETER J. KANG | RES/MEB |
| ANDREA KEIM | NRR/DE/EMCB |
| SAMSON LEE | NRR/DRIP/RLEP |
| MARK LINTZ | NRR/DRIP/RLEP |
| TILDA LIU | NRR |
| LOUISE LUND | NRR/DE/EMEB |
| EILEEN McKENNA | NRR |
| DUC NGUYEN | NRR/DE/EEIB |
| AMAR PAL | NRR/DE/EEIB |
| CARL J. PAPERIELLO | RES |
| VERONICA RODRIGUEZ | NRR/RLEP |
| THOMAS SCARBROUGH | NRR/DE/EMEB |
| RAMACHANDRAN SUBBARATNAM | NRR/DRIP/RLEP |

NRC STAFF PRESENT:

| | |
|---|---|
| GREGORY SUBER | NRR |
| DAVID TERAO | NRR/DLPM/PD41 |
| LINH TRAN | NRR/DRIP/RLEP-B |
| SUNIL WEERAKKODY | NRR/DSSA/SPLB |
| JARED WERMIEL | NRR/DSSA/SRXB |
| J.T. WIGGINS | RES |
| ADAM WILSON | RES/DET/MEB |
| JAKE ZIMMERMAN | NRR/DRIP/RLEP |

ALSO PRESENT:

| | |
|---|---|
| AL BAIONE | Parallax |
| MICHAEL B. DETAMORE | PPL Susquehanna, LLC |
| MICHAEL HEATH | Progress Energy |
| JONATHAN HINZE | International Access Corp. |
| DONALD C. KOSLOFF | FENOC-Beaver Valley |
| DAVID KUNSEMILLER | FENOC-Beaver Valley |
| ALEX MARION | NEI |
| CHALMER MYER | Southern Nuclear |
| VIJAY NILEKANI | IAC |
| ERACH PATEL | Parallax |
| JAMES ROSS | NEI |
| ROGER RUCKER | First Energy |
| KAZUNOBU SAKAMOTO | JNES |
| CHARLES WILLBANKS | ATL International |

I-N-D-E-X

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

8:32 a.m.

CHAIRPERSON WALLIS: Good morning. The meeting will now come to order. This is the second day of the 525th Meeting of the Advisory Committee on Reactor Safeguards.

During today's meeting the Committee will consider the following. Draft final updates to license renewal guidance documents. Meeting with the EDO, Deputy EDOs and NRC Program Office Directors.

Interims results of the quality assessment of selected NRC research projects. Future ACRS activities. Report of the Planning and Procedures Subcommittee.

The reconciliation on ACRS comments and recommendations. And the preparation of ACRS reports. This meeting is being conducted in accordance with the provisions of the Federal Advisory Committee Act.

Mr. Sam Duraiswamy is the Designated Federal Official of the initial portion of the meeting. We have received no written comments from members of the public regarding today's session.

We have received a request from Mr. Marion, at NEI, to make oral statements regarding the license renewal guidance documents. A transcript of

portions of the meeting is being kept, and it is requested that the speakers use one of the microphones, identify themselves and speak with sufficient clarity and volume, so that they can be readily heard.

I would like to remind the members about the interview of candidates during lunchtime today. We'll turn immediately to the first item. Dr. Bonaca is our expert on the subject of license renewal guidance documents, and Mario, would you please lead us.

MEMBER BONACA: Yes, good morning. When we reviewed the first time, the guidance documents for license renewal it was a few years ago now, we commented on the importance that we have these documents.

I mean we, I believe we used the words, a remarkable compendium of information in the GALL Report that it's, I think it's fundamental to support license renewal, as well as support good pressure on the plants, good maintenance, insightful, and most of all, the distribution of information from unit-to-unit, which I believe is responsible for improvements in the Agency performance in the past ten years.

Now we have, since that time, a large

number of license renewals, and of course there has been an accumulation of exemptions, ACR precedence situations, as well as a need to reorganize the information inside the GALL Report.

And that's what the staff has really been doing now. They have upgraded, significantly, the guidance documents and they're here to talk to us about that.

You may remember that in last March we met to review this effort and before the document would go out for comment. I believe the comments have been received, have been addressed.

I believe there is some comments still that will be provided by NEI today about a couple of issues. But, in general, they've all been incorporated, and so we're here to listen to the final presentation of the final update of these documents. With that, I'll turn to Mr. Gillespie.

MR. GILLESPIE: Mario, thanks, Frank Gillespie, NRR. This document, actually, I'm going to say it's even more important than what Mario said.

This is a major mid-course correction at about the six-year point in about a 12-year program, if you look at the number of plants we've done and the number of plants we still have to do.

We've actually had an organizational change based on this document. Section B, which is the Audit, or basically a technical support section self-contained in renewal, was developed with the idea that anything that was consistent with GALL, this dedicated group would become the experts in it.

And the expansion of GALL now, has allowed the Audit Program to expand, so that we're not remaking the same decisions over and over, but we're actually looking at applicability.

So it actually has changed, significantly, the distribution of work within NRR, relative to what's in the self-contained, technical support group or the Audit Group, in what was formally being actually re-reviewed time after time after time, down in the Engineering Group.

So this is, this is not just a guidance document, the guidance document has already had an impact on organization, how we do it.

You heard from Millstone yesterday, where they extensively used past precedence. So we used them as a practice plant on kind of the expanded GALL-kind of concept.

And I don't think we're going to do it again. We've got a set here, and I'm only saying that

in that it was so hard to do it this time, it was very tedious.

I could recognize the technical support contractor was a company, Parallax, and Al Baione was our Project Manager there, he did a bang up job in supporting Jerry as the leader.

Amy Hull. Amy is on loan to us from Argonne. Plus the staff that helped. So this became a very important document. There is a disagreement. And I was quite pleased.

This is probably not what you'd normally hear. Quite pleased to see that us and industry actually didn't agree on the whole document. There's a couple of areas in the electrical area I think you're going to hear from NEI.

And I think the importance of saying there are some minor disagreements is, in the end, this is an NRC document. This is an expression of what the NRC staff has found acceptable.

It's very nice to have a consensus with industry, but I think each Licensee needs to know what the baseline the staff is thinking from, as a minimum, and then each utility can then decide what they want to do that's different.

It's not a rule, it's a guidance document.

And relative to at least putting that information out, it's probably kind of nice to say that the staff didn't fold every place.

And those points are still under discussion. I think we will, you'll see a more active program in the future, relative to keeping it up-to-date. But, right now, GALL covers, with this new publication, about 90 percent of those kinds of decisions we've been making over and over and over again.

And there's about a ten percent increment that we'll be looking at in the future. That's also why I don't think you'll see this major before. It was kind of a midpoint.

It had input from about 25 renewals that had been done. And we're actually seeing a lot of repetition. When you break a plant down into components and pieces, all of a sudden they actually start looking very much more alike than what you might think.

Traditionally, we say every one is unique. The other think I'll say is the same team has input to an international program that I chair with IAEA, that has a first draft of an international GALL, interestingly enough.

There's four working groups. P.T. Kuo heads one, which is the Regulatory Group. Then there's a Mechanical Group, which is headed by the Russians.

The EC actually provided the working group chair for the Electrical INC Group, and Hungary and Romania, Hungary and Bulgaria chair the Structural Group.

So there's actually been some spin off applications on what other countries have been seeing. because we put everything on our page, it's had a very favorable influence.

To have a document that both the regulator and operator can use and know what a general baseline of acceptable practice from operating experience, this is really what this document is from. It's from operating experience.

MEMBER APOSTOLAKIS: Are the Germans and French participating in this?

MR. GILLESPIE: Because of the Germans having officially declared that they're no longer going to have nuclear power, they are observing.

And until the political situation in Germany would change, the German government actually cannot participate. And the French have not.

It's interesting that the French have not. And that has a lot to do with the fact that the entire Eastern Block, Spain, Sweden, Finland and Japan, are in, but the Eastern Block piece, there was some initial discussion of the idea that this is countries with the old VVR-440 designs. That this is applicable to them also.

And that created some friction two years ago when we started the project. The project ends in July. We're looking at a first draft, the Steering Committee is, this January.

It won't be as refined as what we have nationally, because it's a consensus document, but it's a tabular form, it looks very much like it. And so it's a first start.

It's like, internationally, it's GALL 1, which we had five years ago. Yeah, so it's had a significantly influence in sharing this kind of operational experience internationally.

So, the effort has been just, just, been a horrendous one, on tight schedules and we made it. But it's in a bigger context. This is actually a guidance document that's had a significant influence both internationally and domestically.

And on us, organizationally and process-

wise on how we do a license renewal. So with that, Gary, I'll turn it over to you.

MR. DOZIER: Okay, thank you very much. Dr. Hull and myself actually are up here as leaders of this effort. However, I have to thank tons of people for making this actually happen.

If you get the GALL Report and open it up, you'll see pages of contributors to this effort. From all of the affected organizations. The NRC, the contractors, the national labs and Argonne, a lot of effort.

So we're just standing here to represent an effort that was a lot of sweat of a lot of people. So thank you for those, those people. Actually, to address your question a little bit on, before I start, on the international effort.

We did have international participation and in this we also took this information to Paris. Bill Borchardt at the Nuclear Conference in Paris, presented a paper that was given to the French and also about this effort.

There were two conferences in China that representatives from RLF went to. And also we did make local presentations. An international GALL group came in the NIST. They were there and we gave a

presentation there. So there has been international interest and somewhat participation.

As Dr. Bonaca indicated, in March we came to basically show some of the types of changes that we had made to the GALL Report. In June, June of 2004, that's basically, that was one of the earlier ACRS presentations.

And we said that that's what, you know, we shared with ACRS what we had planned to do. So with this presentation, basically, I'm carrying forward from the March time period into today.

And I'm going to focus on the changes that occurred. If you said, well, what are all the changes, we could show you a basis document and of course we delivered our stack of paper and I think it was about, it was probably about this thick.

So I appreciate you guys looking at that information. So in this presentation I'll also share the remaining schedule that we have, and of course we'll be focusing on the license renewal documents.

First of all, the documents that we already had and basically we revived, of course, was GALL, SRP and Reg Guide. We have two new documents.

One is basically, when we put out the information for public comments, in the February/March

time frame, we captured those comments. We placed them in a document. We addressed the comments. If we incorporated the comment, we told them that we incorporated it and where.

If we didn't, we explained why we didn't incorporate that comment, and provided a justification. I'll talk about that document a little more in a few minutes.

Also the Technical Basis Document. This is new and actually it shows the changes from 2001. So if you say, well what are the changes from 2001? And why did you do it? That's what's contained in New Reg 1833, and that's, that's our Basis Document.

Remaining activities, we have a CRGR meeting on the 13th. We hope to issue this document September 30th, 2005. We'll have everything but the Basis Document available on GALL and the website.

About a month later we should have the hard copies, the official, bound copies. If you notice the Basis Document is lagging about one month. That was intentional. And what that's really doing is actually giving even a second QA check to, you know, the staff has to look at it again.

Are you sure this is the, does this accurately reflect our staff position? And from this

second QA check we got very positive results out of that. So the Basis Document is coming soon, soon after the other documents, one month later.

So back to the analysis of public comments on New Reg 1832. We have various appendices in here. We have a special section for ACRS. We break it up, also, into the NEI comments.

We had, also during the workshop we solicited comments. A lot of, and we got some comments from that. We also got written comments that came in, and a lot of those comments dealt with, most of them weren't specific to our documents but they related more to specific Licensees or considerations of other things in license renewal, such as security and off-site response and terrorism and things of that nature.

We also addressed those types of things generally in that Appendix D. One other thing we did to make it easy for the stakeholder to see how their comment was addressed, was we did a side-by-side comparison of, for example, the aging management review line items.

We showed what it looked like in January and right below it would be how it looks today. So they could, without flipping to a bunch of different documents, they could see how their changes were

incorporated.

One of the items that we asked for in the, we felt like GALL was complete but it could, we also wanted to do one other thing. And that was in GALL, and in a lot of the, in several of the aging management review line items, we didn't specify a particular generic program.

We would use the term plant-specific and we would evaluate it on a, on a plant-specific basis. We wanted to give a specific aging management program for some of those if, you know, a generic program could be applied for, to that AMR line item.

And so we asked for that. And we, actually in it we even got new AMPs and that will kind of the topic that I'm later talking about. NEI proposed a couple of AMPs. We also found some additional AMPs that we could write to do, so that we could provide some specific guidance on these AMR line items.

So that gives one reason why we had some of these new AMPs. We also were, we have interim staff guidance. And interim staff guidance program is a program that's in place so that, for example, when GALL 2001 was written, there were some things that still needed to be worked out, some things that needed

to be changed.

We have a process in place that kind of makes the document living. That we can adjust. We can provide our stakeholders with our current staff positions. And if things change a little bit, we can reflect it in this interim staff guidance process.

Also in these, some of the reasons for providing these new AMPs, was we had some emerging issues, and we wanted to address those. With that, for example, on an emerging issue, nickel-alloy in the heads.

That's a, you guys have seen the bulletins and high attention that this has been given. We address that in this. We have a new AMP, M11A, on the closures heads. It basically reflects the, our precedence on what we have found acceptable, and we included it in this version.

M35 was a one-time inspection. We had, this one came out of a, we had interim staff guidance. Basically, this was just an incorporation of that internal staff guidance.

M36, external surfaces monitoring. This was an AMP that was proposed by NEI, and we, after rigorously reviewing that and we made a few changes, we incorporated that AMP. Another one proposed by NEI

was flux thimble tube inspection. That was also modified slightly and incorporated.

Since we had the external surfaces monitoring AMP and we, we could also say we had, based on past precedent, we could also say that, well, we've accepted the PM Program for some of the inspections. Now this is primarily focusing on the carbon steel and general corrosion within these internal surfaces.

But, basically, we had a program that we would accept that, when you go into your PM and you're looking inside and you can perform the inspection. Look for general corrosion, and we would accept that. That's primarily what this new M38 is out.

Another one that we have accepted many times and had been reflected in several of the applications, was the lube oil analysis AMP, so we also added that in.

VICE CHAIR SHACK: Jerry, just one, when you pick this document up we all have our different ways of approaching it. Of course what I did was to leap to the aging management programs and leaf through them.

And I come to one for PWR internals and I find out it's been deleted. I'm sitting there shocked. You know, you're not going age management of

PWR internals anymore? And then of course I run back to the tables to find out, look for components in PWR internals and I find out they are being managed, it's just that it's a commitment to the industry program that's going to be developed.

It would seem to me to be better to capture that sort of thing back in the aging management description of the internals, rather than just say deleted. Say that, you know, an aging management program doesn't exist, but you know, why since these are committed to following research in this area, you know.

Whatever you say for the components really should be reflected back in the aging management program, rather than, you know, as I say, my first shock is it's deleted?

MR. DOZIER: A more accurate word should have been replaced. Because we do have -

VICE CHAIR SHACK: Right.

MR. DOZIER: - the new, you're referring to M11. M11 was replaced by M11A.

VICE CHAIR SHACK: No, it's M16. I know, M15. PWR Vessel Internals, deleted.

MR. DOZIER: Oh, I'm sorry, that is a separate issue. I was, my thought processes was on

the nickel-alloy, I'm sorry.

Yes, that was deleted and just as you've summarized there, we've said that you, you still follow the bulletins, generic letters and the industry programs to do it.

It is an emerging issue. It is being addressed.

VICE CHAIR SHACK: I'm just saying it would be helpful to have that flagged or something.

MEMBER BONACA: I think Mr. Elliot would like to make a statement.

MR. ELLIOT: Barry Elliot. I want to tell you our thought process on that. We originally had a PWR internals AMP. And it was generated from the first two reviews we did, which was Calvert Cliffs and Oconee.

And at the time, we had a lot of muscle and we were forcing them to do a lot of stuff. And during the process of review of other plants, we decided there were a lot more issues that needed to be addressed within the internals for PWRs.

Then, that we were initially talking about. So what happened was the material, the PWR owners groups got together and formed an MRP and started developing a specific PWR internals program.

And hopefully it will be comparable to the BWR VIP Program.

And so we decided that designating a program at this time, for PWRs, was not the right thing to do. It would be much better if we just had a placeholder which said that we will fill in the rest of this when the MRP finishes their work and develops a program similar to the BWRs.

VICE CHAIR SHACK: I agree absolutely.

MR. ELLIOT: And that's why we deleted the program, because nobody was following the guidance there. They were all saying we'll do whatever the MRP wants to do.

VICE CHAIR SHACK: It's just at the moment your placeholder says deleted.

MR. GILLESPIE: I understand. Let me, we have a nomenclature issue and we can deal with the nomenclature issue.

VICE CHAIR SHACK: I mean I realize the, you haven't lost the problem.

MR. GILLESPIE: Let me throw something out for the Committee, which actually might be interesting as we proceed with further plant-specific reviews. And this is a good example and there are several of these in the whole thing. Is that we got some

Licensees who's licenses actually could, they'll hit the period of their first license.

And generally what we've done is put a license condition on people that says you either have to do what the MRP-approved program was, or, and it has to be submitted and approved to the NRC 24 months in advance.

We actually have some older licensees, who likely will hit the 24-month point, before an approved program exists. And the interesting question for the Committee, as those happen to come up, and for example Oyster Creek and some of these facilities will be that close.

Is we're actually going to have to make a judgement on a plant-specific program that meets, that answers the mail. And so we're going to have, with some of the older, real older plants coming in, some real unique problems where we haven't got the generic program that exists.

And the generic program might actually have to come out of the plant-specific ones by necessity. And I say that only because Oyster Creek is in, and that's one of those older plants that actually might have to do something plant-specific on some of these references. So this thing is actually

going to get us in kind of a box with some Licensees that you're going to see over the course in the next 24 months.

MR. ELLIOT: Recent BWRs have exactly that condition for PWR in terms that within, either give us a program before license renewal, or two years before license renewal, or give us your own program.

You know, give us an MRP program or give us your own program within two years of anything in the period. I think the first plant that really has a significant problem there is probably Ginna, because they're running pretty close.

But most PWRs were, you know, they have plenty of time. And the PWR internals program will be developed in time.

MEMBER BONACA: Still this is a good comment. The question I have is, I haven't seen it and think it's very, very significant. I think this is a comment that can be addressed.

MR. GILLESPIE: It's a parenthetical we can get, it is misleading to just say delete, because it gives the idea that we're ignoring the issue, when in fact there's major efforts going on throughout the industry on the issue.

VICE CHAIR SHACK: I mean, and that's clear

when you look at the rest of the document.

MR. GILLESPIE: Yeah.

VICE CHAIR SHACK: And as I say, for the guy who does it like me and just starts to go through the -

MR. GILLESPIE: Good comment.

MEMBER BONACA: We realize that these are examples where you would need additional updates in the future. At some point you said that never do it again.

MR. GILLESPIE: No, no, but we're going to have that ten percent and this is part of that ten percent that's going to need careful attention. And if the industry doesn't make it with the generic answer soon enough, they may find us needing to just fill something in based on what we approved plant-specifically.

MEMBER BONACA: Okay.

MR. GILLESPIE: So there's actually kind of a race going on.

VICE CHAIR SHACK: Presumably you'll be more conservative because you'll have less information.

MR. GILLESPIE: Remember, I always tell the Licensees, remember, you're asking us for the license.

MR. DOZIER: We will remove that word deleted and we want to think about the best way of doing it, but basically, I think, we would probably say that it's addressed in the specific AMR line items for the components.

We also had new electrical AMPs in the electrical area. All of these AMPs were in the January version. And we've had comments on these AMPs. Metal-enclosed bus, actually, one of the areas that NEI had told us in a public meeting a while back, there was an issue there.

An actually, you don't have this slide, but I have a hidden slide I can show you for E-4, and also in this if Amar Pal would be prepared to also speak.

This AMP E-4, basically what's controversial a little in this, was that it had a testing requirement in there to do thermography or connection resistance every ten years.

We listen to that comment and we provided an alternative. This alternative was visual inspection. We also placed a frequency on this visual inspection. We said that, you know, our real desire was for them to continue with the testing using the thermography or connection resistance, but for those

who may choose another way, we said visual inspection.

And, like I said, we felt like that it was not as an effective of an inspection technique. And so the frequency of five years was chosen. If you say, well, why wasn't it ten years?

Well, if you, like I said, we felt it was less effective, and, if you put it at the same frequency and you had a choice between visual inspection and the testing, you would probably do really what we prefer, not what we preferred.

So we placed it at a five year frequency. That was one of the comments made at a public meeting regarding this. Realize that this addition of -

CHAIRPERSON WALLIS: What can you tell by visual inspection of the bolt? You can about tell it's still there, aren't you? What else can you tell?

MR. DOZIER: There's, I'll refer to the, Amar Pal, actually, if he can come up. But my understanding is discoloration, you know, could be seen. It is a less effective technique but, to give, let me just give it to the expert and let him answer.

MR. PAL: Amar Pal, NRRDE. Yes, this bolted connection, they are covered with something like a tape or sleeves or some insulating material. Then visual inspection would, may identify if there's

some hardening going on, some discoloration, chipping or something, you can see.

So that's the reason why we included that option. But since visual inspection may not be as effective as the testing, that's why we wanted a more frequently distributed.

MR. DOZIER: But actually the contention, I mean the area that's controversial actually is it, that industry didn't like that we added the visual inspection at five years. That was really the criticism.

But really the staff's primary desire was having the testing at ten. So we tried to respond to a comment, but they didn't like the, actually, the alternative that we had provided.

Another, E-5 dealt with fuse holders and their, it was basically we had an interim staff guidance for the fuse holders and we incorporated that. No controversy, I do not believe, on that issue.

E-6 was another new AMP. We provided it for public comment, and realized that actually, in our interim staff guidance position, that's really how we get stakeholder input.

We come up with the guidance. We put it

out for public comment. They comment on it, and then we come up with a final position. So that's really, and there is some dialogue in there along the way.

This parallels that type of process. So this was new. It does address one of their emerging issues and it dealt with connections and it, it also supplements, we already had an AMP called E-1, that dealt with some connections, but it only looked at the localized environments.

It didn't look at some other environments. One of the criticisms of this was that it was increasing scope. But actually, all it does is, you know, GALL is not a scoping document. All GALL says is that if you have a situation that you, a particular situation, you can point to certain AMPs.

And that's what this is. It's not an attempt to increase scope. Scoping is done a lot earlier in the process. If you have the situation that this AMP talks about, then you can point to the AMP.

Otherwise, the AMP wouldn't apply. So it does not increase scope. And what, another concern of it was that it had wording in it that, well, even if it goes, you know, whether or not it goes to an active or passive component. But we're talking about the

piece of wire and the connection. It's not the active piece of equipment.

Okay, so I'm getting back to -

VICE CHAIR SHACK: Jerry, one more question on those Aging Management Programs. One of the nice things I like now was that the references came back on the Aging Management Program.

But what was the rationale for selecting the references? First I thought it was only NRC-approved documents, and every once in a while I would find a literature reference, and every once in a while I'd find, you know, a New Reg CR, which, again, is not an approved document.

So, was there, you know, you just picked what you thought were the best documents and if you didn't have approved documents then you fell back to journals and CRS?

MR. DOZIER: Amy, do you want to address that?

DR. HULL: That was sort of a consensus decision on the basis of different people who were developing different Aging Management Programs. So, it was what they found and thought what provided the most comprehensive information.

In the 2001 version of GALL also there

were some documents and EPRI documents that were referenced that are not normally publicly available.

But if they contain the most succinct or useful information they were referenced. In some cases, for example, there may have been some controversy and so an additional literature reference might have been included to try to help substantiate the staff's claims and intentions.

MEMBER APOSTOLAKIS: Isn't that the way it should be done, Bill? I'm surprised what you're saying?

VICE CHAIR SHACK: I'm pleasantly surprised.

MR. GILLESPIE: Let me say that the staff's job in this case was to come up with the right safety answer. And GALL is an approved document. So once we put it in GALL, it's there.

MEMBER APOSTOLAKIS: Wait, wait, wait a minute. Just because GALL is approved, that doesn't mean you approve all the references.

MR. GILLESPIE: No, but in pulling it in it was, where's the best information that the staff would accept, based on the staff's position. And it was unprejudiced by the fact that we hadn't written it down before or claimed ownership.

MEMBER APOSTOLAKIS: I think what Dr. Hull said makes perfect sense. And what Dr. Shack said explains something to me, that over the years we were always wondering out there why do Sandia documents only reference Sandia reports?

And why do Argonne documents reference Argonne reports? Now I understand that.

(Laughter.)

MEMBER APOSTOLAKIS: Nobody else has anything to say.

MR. DOZIER: Okay, so that was the electrical. Also we did, we did, we were very transparent in this process. We, the ACRS may remember that we started this project, the contract to Parallax actually started in June.

We started and we had, even an initial draft, a work-in-progress, in the September time frame. And we placed it on our website that you see before you.

That, you know, that was kind of different because we were show them, okay, this is where we're at at this point. That set the frame work for dialogue with stakeholders, you know, from September until the January time frame.

January we, of course, again published the

information based on some of the, based on the interaction that we got from the September version. And that was the January version.

We again, as you see here on, when we gave this information to ACRS we again provided it to stakeholders so that they could see, you know, what the works-in-progress were.

On this website we have, not only, we have our meeting announcements and our meeting notes. This is kind of like a one-stop area that shows what we've done and where we've gone with information that we had.

We also had some ACRS issues. They're addressed in the public comment New Reg. I can quickly go over some of those. ACRS asked for a link for the interim staff guidance and the revised documents. That is now in the public comment New Reg.

They also wanted to, us to assure them that we have not lost any of the GALL '01 AMR line items. We have a table in Appendix C that provides that.

In one of the ACRS reviews of the ACRS, of the, let me back up a little. In one of the ACRS reviews of the SER, one of the ACRS members said that the GALL report should clarify under what

circumstances aging effects would be expected from halon/carbon dioxide in the fire suppression system.

We worked very closely with DSSA to look at that issue and make sure that the documents reflected that, I mean, or was complete. On risk-informed ISI, that was also made another one of the ACRS reviews of the ISI.

So that wasn't specific to this, but we captured them in a document anyway. Risk-informed ISI, we, actually on that, what we did do, was we updated the reports to reflect what's currently in 10 CFR 50.55(a), and that is the 2001 edition of the Code through the 2003 Addenda.

However, based on, and naturally on risk-informed ISI we have had plants and successfully reviewed those applications. However, based on the time constraints and the money and all these things, we were not able to incorporate that comment in this edition.

We had two exceptions to NEI 95-10. Basically we presented those in the March time frame. One dealt with exposure duration criteria, which we didn't agree with, and they took it out in revision six.

And they also had some criteria for

scoping of non-safety-related piping and supports. We, they provided some additional clarification where it did incorporate the staff's comments, and so basically now Reg Guide 1.188 fully endorses NEI 95-10 Rev. 6.

So endnote, basically this is a work of numerous staff, contractors and stakeholders. A lot of hard work. We believe that the collection of these inter-related documents reflect the staff's current position and considers stakeholders' comments and interactions.

We completed this in about 14 months and we, just like the risk-informed ISI, everything is not solved, and everything is not complete in this. But we've got a much better document.

That we've had feedback, that it gives us a more efficient, effective process and consistency. We're getting the 90 percent matches in GALL, and I think the important thing is that we intend to continue the dialogue on the issues that we need to, to go with, and would like for the ACRS endorsement of these documents to be published in September.

MR. GILLESPIE: Mario, let me add one other comment because this is a key word and Jerry didn't say it. And that's capturing the information for the

future.

And one of the things we added this time which I think was one of the most important things that we add to the whole thing was the basis document.

Actually something that explains how we got from 2001 to now, and, because it was difficult in 2001. I asked the guys, I said where did the information in the 2001 version come from?

And I actually made them go find 150 or so research reports that were the basis for them. And we found out they were hidden in closets at various national laboratories.

But we did get a complete collection, and you'll find those also on the web page. And so I thought it was important for this idea of leaving it for the next guys who come along, to have that string.

And that's something you, I think this is one of the first times, other tech specs, which has a basis document, that you see an attempt, at least, to put the rationale down so people actually know where the criteria came from in some sense.

MEMBER BONACA: By the way, for my review, was a string useful.

MR. GILLESPIE: Yeah, I'm hoping it was. Before you disagree with a criteria, understand where

the criteria came from and disagree with where it came from and now we can talk.

Give me some new information. And it provides a better way to evolve the document. Knowledge management, that was the word I needed, and this is part of knowledge management.

CHAIRPERSON WALLIS: If someone wants to disagree can they find these documents that are in closets, or have you made an effort to -

MR. GILLESPIE: They're all on the web page now.

CHAIRPERSON WALLIS: - electronic?

MR. GILLESPIE: Yeah, they are all on the web page electronically.

CHAIRPERSON WALLIS: Oh, good.

MR. GILLESPIE: Yeah, that was a major, we literally found them in closets and places because people had forgot about them. They're really very important research reports that were put together through the 1980s.

MEMBER BONACA: Okay, any other questions for the presenters?

(No response.)

MEMBER BONACA: If not, I thank you very much for a good presentation and we have some comments

from the Agency, I believe, Mr. Marion.

MR. MARION: Good morning, my name is Alex Marion, I'm with NEI, I'm the Senior Director of Engineering, and I do have a couple of comments I'd like to make.

First of all, I'd like to thank the ACRS for the opportunity to express a couple of points this morning. Apparently, I'm going to have to hold this microphone. That's all right. Do we have an AMP for this device?

(Laughter.)

MR. MARION: We should. Okay, I'd like to complement Frank and, Frank Gillespie, P.T. Kuo and his staff because they've done a tremendous job in documenting and incorporating many lessons learned from the past review of license renewal applications.

And I'm sure you can appreciate, by the volume of paper that you have, that's been presented to you, for this meeting, it gives you a good sense of the momentous amount of effort put forth by the staff.

One thing that has approved tremendously has been the communications and the opportunities for communication and the interactions between the industry and the NRC.

But there are two issues that I want to

bring to your attention, and Jerry spoke to them and these are two of the Aging Management Program line items that are in the Gall Report.

One dealing with aging management for metal-enclosed bus duct, and this is E-4, as Jerry covered. And the other deals with Item E-6 that refers to bolted connections. And these are electrical circuit connections.

The industry has not had an opportunity to really engage the NRC in detailed discussion on the second item. It's not clear to us that there is an aging management effect associated with E-6, that's going to be adequately addressed by an Aging Management Program as proposed by the staff.

And we would like to have an opportunity to engage in discussion on that topic. Going back to E-4, the issue, as Jerry indicated in his presentation, was the schedule for the visual examination.

We have yet to find any kind of basis for NRC identifying the five-year interval for the visual examination. And quite frankly, we think that there will be a number of exceptions taken by future Applicants to these two areas, that will unnecessarily consume resources in two areas that, quite frankly,

are questionable at this particular point in time.

And let me just make a point to follow on with something that Frank Gillespie said about the healthy aspect, if you will, of disagreements within the industry.

I do appreciate the fact that we will never agree on everything, and that is healthy, at least from the perspective of having an opportunity to vent your points of view and listen to what the other side has to say.

Our objective is never to achieve consensus with the NRC in full agreement, however, our concerns and our objectives are much more fundamental. We would like to see the NRC demonstrate the burden of proof in identifying new positions, if you will, within the GALL Process.

Absent the NRC establishing a basis for the new positions, our perception is that that new position appears to be arbitrary, and I'm trying to be as complementary as I possible can.

Secondly, we do believe in the public participation process and the opportunity to have these kinds of discussions and to vent these differing opinions and points of view.

However, I do want to exercise a note of

caution. We've made a tremendous amount of progress with the license renewal process and the industry overall is very pleased. But it's these small items that keep cropping up that continually raise concern.

And I would ask the ACRS to consider the evolution of such items that are integrated into the license renewal process and the fact that there isn't a basis for incorporating those items.

There isn't any basis that relies on past operating experience, and there isn't any basis from the standpoint of any known aging effects. And so I go back to the two items that I raised previously. And that's all I have to say this morning. Again, I thank you for the opportunity.

MEMBER BONACA: Any comments on that?

MR. GILLESPIE: No, and I do appreciate, and I think it is healthy, it's been a great dialogue and it's going to continue. And it's interesting, only yesterday, and this was on a plant-specific issue we were talking about.

There's a, there's a comment in 54.21 which addresses what's in scope and how much aging management you have to actually have. And I think it gets to the crux of what Alex said and why we need to continue to dialogue on these two points. And in

there it says something to the effect, the Aging Management Program has to be sufficient to ensure the adequacy of the COB function.

Which doesn't mean it's as deterministic, there's adequacy says you have a judgement in there. And so there is room, in fact, for staff judgement which GALL tries to document.

And that means there is room for continued dialogue. And I think the onus is on the staff to demonstrate. And we're going to have to do it in these cases too. Why the Aging Management Program we're proposing is necessary to ensure the function?

And it's interesting that the rule, the way it's worded is an interesting way the way that sentence is worded. It's not quite as deterministic as people would maybe sometimes like to pose it.

So there is room for discussion. And, in fact, it's the COB function of the thing. And if there's no known aging mechanism then we should basically acknowledge that.

So there is room for dialogue and we're going to keep it up and that is healthy. I don't want it to exhume extraordinary, I agree with Alex, on minor issues that have maybe minimal safety involvement. We shouldn't, we have to be pragmatic

and shouldn't just spend resources arguing over them.

So I think we're going to get these settled as we go to the final version. And the basis document needs to document what our basis is.

MEMBER BONACA: The main concern I heard from the industry is that they feel that the basis are arbitrary or there is no basis for this problem. And that expresses some level of frustration with the -

MR. GILLESPIE: Yeah.

MEMBER BONACA: - you know, when you don't have a basis.

MR. GILLESPIE: And we'll just have to keep dialoguing on these.

MR. DOZIER: Actually just on the higher level, I did release all of the documents that have been concurred upon, which was everything except for the basis document.

So industry had an opportunity to look at the public comment New Reg, however the basis document is still in concurrence, so they have not had an opportunity to look at the basis document.

MR. GILLESPIE: And that's where the argument is. Again, it's the criteria is less important than understanding the basis. And if our basis is flawed, and that can be shown and we have to

stand up and say, you know what, this is new information, then the criteria changes.

So we've got to get the basis document out. So we've got about a month to go, Jerry, a month and a half? And then let's go toe-to-toe on the basis, get it done and make a new decision if that's what's required.

CHAIRPERSON WALLIS: I have a question for Mr. Marion. I think you expressed a view that you had an objective not to achieve consensus with the NRC. Now you have a couple of questions here which you brought back to the NRC, and you may well achieve consensus eventually on those matters.

Would it then be a tragedy if there were no bone of contention left?

(Laughter.)

MR. MARION: Dr. Wallis, don't take it personally but I'm a practical man, at least I try to be. And I recognize that we're never going to be in full agreement 100 percent of the time.

But I have to say, you know, the bottom line on this is if we don't keep track of these little issues that come up, we're really going to, we're really setting up a situation where the whole public comment process is null and void.

MR. GILLESPIE: Okay.

MR. MARION: And I think there is an opportunity here, and I feel compelled to make the request that maybe we need to take these two items and open them up for public comment.

MR. GILLESPIE: Yeah, I, again, I think it's going to be important, we need to get the written basis in black and white down, and allow the industry to critique our basis in black and white.

And sometimes you end up having too many meetings and nothing is in black and white. So the basis document will address it, and then let's put on the gloves, have a fight and we'll be done.

MR. DOZIER: But I did want to say that both of these issues were in the 60-day public comment period.

MEMBER BONACA: Okay, well, I thank you for the presentation. I wonder if there are any further questions from the committee members?

(No response.)

MEMBER BONACA: If none, again, thank you very much for a job well done. And Mr. Chairman.

CHAIRPERSON WALLIS: Thank you. The next item on the agenda is at 10:00, a meeting with EDO. We will take a break until 10:00. Thank you very much

for your presentation this morning.

(Whereupon, the foregoing matter went off the record at 9:28 a.m., and went back on the record at 10:00 a.m.)

CHAIRPERSON WALLIS: Okay, we'll please come back into session. Welcome Luis and your colleagues, and I'll just make a very short introduction.

We meet with you periodically, about once a year, to share a high level view of your and our anticipated activities. This helps the ACRS members and our staff and you to make suitable plans.

You will be particularly useful to explore those areas in which increased future activity is expected and those to which we, the ACRS, our best able to add value.

I understand that the way this meeting is planned is for it to be a presentation by you, which we will interrupt, in our usual way -

MR. REYES: Good.

CHAIRPERSON WALLIS: - with questions and comments. So please go ahead.

MR. REYES: Good morning and thank you for sponsoring the meeting. Since our last meeting in

March of 2004, our organization and the outlook of our future work have both changed extensively.

We welcome this opportunity to meet with you and discuss these changes. The agenda that we're about to go through specifically deals with the areas that you requested, including License Renewal Program, power uprate, fire protection, PWR sump performance and new reactors.

In addition to the offices originally discussed, Roy Zimmerman has joined us to project the Nuclear Security Incident Response Office expected work in the area of emergency preparedness.

During this presentation we want to communicate to you the number of projected applications in different areas, the complexity and the fact that most of the expected work will be done for the first time, which will make meeting the schedule for the completion of the work, over the next several years, challenging for the staff and for the ACRS.

We greatly appreciate your continued support in meeting the Commission needs and the challenges that we have before us. Our presentation will follow, Jim Dyer will start the presentation.

Carl Paperiello will be second and Roy

will play clean up. And if that's agreeable with you, Jim.

MR. DYER: Okay, thank you, Luis, and good morning. I think just following on Luis' and Dr. Wallis' opening remarks and that, I think, can I get Slide 2, please. This is the topics that we discussed with the staff to give you an overview on.

I was looking back at the agenda from the March, 2004, meeting that we held, and noted that sumps, power uprates, license renewals and new reactors were the key, some of the key topics there, and noted that 50.46, PRA quality and grid reliability were the subjects that weren't repeated this time.

And, as could very well have been also listed on this, because they're still very much active issues that we have ongoing dialogue with ACRS and work with the Commission and the industry on.

And, also, as you heard yesterday from Exelon and the staff, our ongoing initiatives in re-analysis or methods used for seismic analysis for plants is an issue that's emerging or has emerged as something that jointly the Office of Research and NRR are working on.

I think, as Dr. Wallis said, the intent with these subjects is, from my perspective, is to

provide an overview of where we think we're at and where we think we're going and how that's going to impact our future activities.

And I hope that it facilitates the recognition as Luis, we're not too subtle that we recognize that going forward, particularly in the area of new reactors, we have a lot of work on our plates.

And I was speaking Mr. Sieber before the meeting but, you know, the Office of NRR is reorganizing right now to facilitate that. We're in a very much hiring, expansion and realignment and really trying to focus our work in moving forward in preparation for a rather substantial increase in workload, particularly in the out years and starting now, which will translate into additional work for the ACRS as we go forward.

So, if I can go to Slide 3, the first area of discussion is our License Renewal Program. So far, to date, we've renewed, issued 35 reactors at 20, issued license renewals for 35 reactors at 20 sites and currently have, under review, licenses for 14 reactors at eight sites.

And, of course, they all go through the ACRS on their way to the issuance and our review process. Approximately, this, with what we have in

house right now, it's about 50, halfway through the existing operating fleet.

And so far, as far as we, in our informal communications with the industry, is we know of no plants that do not intend to pursue license renewal, so it's a matter of scheduling.

Also, I believe, as you dealt with and deliberated on and discussed with the staff this morning, we are in the process of updating our guidance documents.

The standard review plan, the generic aging lessons learned, or as referred to update, as it's referred to as GALL 2. And then the commensurate regulator guides and that is a major effort that we need to update our activities to improve our lessons learned from these multiple renewals that we have done.

And we certainly, you know, as we hope to have those issued by the end of the month. Also in our future review, as I said, we're halfway through our continued budgeting in the area of, for license renewals.

And I think it's, we have plants identified or spots reserved to handle six a year. And so it's a steady forecasted workload for the next

several years that we're going to be maintaining that rate.

So, as we go forward, we expect to continue at this pace.

CHAIRPERSON WALLIS: I'd like to comment on that.

MR. DYER: Yes.

CHAIRPERSON WALLIS: This is a significant load for this Committee. As we've got experience with it and as you folks have got experience with it, the process has become more efficient, I think, every time, we seem more efficient.

But we may have reached the point of minimum that we can possibly do. And we can't reduce our effort below a certain amount, we have a certain obligation.

And so we've got to talk about where we are. We still have to read a lot of paperwork and see if there's anything in there that requires attention.

MR. DYER: I think in our, from our perspective if it's, if we're just dealing with the a standard license renewal, it's as you said, we were in a very much production, making sure if they stick to the guidance that we've issued, things go very smoothly. Where we've seen the challenges, and I'm

sure you've seen it, too, is when it gets creative.

And some Licensees will marry up a license renewal with a power uprater, in the case of Browns Ferry, the restart, and that's when we're out of our plan or we've got concurrent major licensing activities ongoing.

And those are the ones that challenge the staff.

MEMBER BONACA: And we are looking, in fact, at Browns Ferry, and it's, you know, giving us some new challenges just because of construction going on still for a plan that is presumed to continue operation and to be renewed based on that operating experience, but this plant is not running.

So there are challenges there and we're dealing with it right now, for example.

MR. REYES: We understand that we're probably at the level where we may not be able to get anymore efficiencies out of the process. I just wanted to add to what Jim said.

In terms of looking forward and my comments will be more relevant as he goes to the next slides, but this particular workload, when we look into the horizon, we continue at the same level through year 2009. After the year 2009, the workload

continues at a much reduced pace, regarding license renewal.

And that is really important for your group because the next workload he's going to talk about happens to be in the same time frame. So our challenge that we talk about, why we're realigning organization, etcetera, etcetera, is that in the horizon we don't see this particular work going down before the other one takes off.

So the years between now and 2009, are going to be particularly challenging to both of our entities.

MR. DYER: Okay, Slide 4, please. New reactor work. And of courses this is the area of the great unknown and the great amount of work on the horizon, as Luis said.

Let me start off first by the design certifications and recognize that the ACRS contributions are in a number of areas and in this, you know, as we look to the new reactor work and historically, in the past, the review of all the design certifications and a lot of, sometimes, the review of specific pre-application reviews.

And I didn't put the pre-application reviews on the slide, as we go forward, but recognize

that you did contribute to the ACR-700, and again we do have some pre-application reviews ongoing with some novel designs in the IRIS.

Just started the EPR Review. But from a design certification, certainly we're at the last stages of AP1000 rulemaking. We're on schedule to deliver hopefully by the end of this year, and involve the ACRS in that final action.

Additionally, just last month, I think it's, we're up to about two or three weeks ago we received the ESBWR design from the General Electric Company.

We're in the process of doing our acceptance review and then we'll be laying out our schedule. I know that ACRS has had, in our previous design certification reviews you review in-process, at the end, in the middle, key subjects and areas like that.

And it's very much, as we really understand what we've got and what the vendor is asking for. We'll be in discussions with you about what is the appropriate, when do you want to be involved and when do we think we'll have something, our conclusions and independent analysis.

So this is very much a significant and a

flexible workload over the next few years, as we undertake this review.

CHAIRPERSON WALLIS: Jim, I notice you only refer to ESBWR in AP1000. These are reactors that are cooled by light water. They look like things we've seen before, existing codes work for them and, you know, it's not all that difficult to extend our expertise to a few areas we may need to do so.

But in some of the other designs, there are differences from previous machines are more significant, and I noticed you haven't put them up here. But we're anticipating, sometime down the road, we'll have to deal with new reactors which are not like familiar machines.

MR. REYES: Yes, we expect the next one to come will still be familiar to all of us, the APR. That's the next design certification we expect. After that, it's very hard for us to decide which one is next.

In our fiscal year '07 budget, Carl has some small amount of money to try to get ahead of the issues you talk about. We have to develop codes. You have to develop some basic expertise in anticipation of some of those designs.

But are problem is that it's hard for us

to give you an insight on when those applications are going to come in. We, ourselves, don't know, so we're just starting to do a little bit of preparatory work in the Office of Research in anticipation of that.

MR. DYER: And we're dialoging with the vendors on those designs to get a better understanding of what is their schedule and do they have a sponsor here in the United States that is going to use the design?

MEMBER KRESS: Did EDF submit the EPR?

MR. DYER: No, what they did is they sent us a letter that it looks like it could be in 2008.

MR. REYES: What they're doing is they have opened an office in the United States. They're translating all the documents from French to English. They have had some discussions with us and we do expect them, as Jim said, to be the next design to come right after the ESBWR, and that's the extent of what we know with their plans.

We can tell you that in informal discussions, some of the utilizes that are considering putting, that have announced COL or are considering and we can tell you that every week we were told there's another announcement coming up next week, there's another announcing coming up next week. But

some of those utilities who have not revealed their technology decision or are in that group that tell us we're going to make an announcement next week, are considering the EPR in the options, in the options.

MR. DYER: And as I go through and, with most of them are announcing the combined license request and everybody is coming in in 2008.

That's just the way the announcements are going. Okay, any other questions on design certification or pre-application reviews?

(No response.)

MR. DYER: The next subject is certainly our early site permit reviews. And, again, we're in the, wrapping up the reviews on the first there pilots that we've undertaken.

ACRS has completed their review on the North Anna early site permit and the, our goal now is the Grand Gulf safety evaluation to be issued in October and schedule an ACRS meeting in December.

And the Clinton SER to be issued in February of '06, and then try to get an ACRS meeting in March, is our near-term schedule.

On the horizon, as Luis said, we have a number of utilities talking to us about filing for an early site permit, and in the same light, certainly

Southern Company yesterday came in to discuss with us filing an early site permit at Plant Vogtle, Site Vogtle, at the Vogtle site in the summer of next year, 2006.

And we have, Constellation has talked and may submit an early site permit for a site that hasn't been designated, in 2007. And so those are the activities in the early site permit area.

I think the discussion you had yesterday with the Clinton site and the proposing a new methodology of seismic analysis is certainly one of the areas that we're going to, we'll be coming to you and we'll be continuing dialogue in this area.

MR. REYES: I tried to explore with utility executives trying to get an idea, are we going to see a shift on utilities going directly to the combined operating license versus going first to the early site permit?

And the feedback I got is there are still some utilities who prefer to go to the early site permit first. It fits their business horizon. So if I have to tell you, I think we're going to continue to receive some of that work.

Perhaps not as aggressive as getting three in one year, but I, I was surprised, to be honest with

you, but they tell that they, we should expect some additional early site permits to come down the road.

MR. DYER: I think one of the challenges with the early site permits, too, is the interest in some of the designs that the utilities have interest in some of the designs that are yet to be certified.

And so the early site permits are coming in with their, with a plant parameter envelope and it's lack of specificity in some of the uncertainty as they come in. And that's a challenge for the staff in our review in defining this envelope accurately in our safety evaluations and in presenting it to you.

The next subject is certainly infrastructure. And in the near term we're working to issue a proposed rule to revise 10 CFR Part 52, to get that proposed rule out.

And after public comments and that, then we anticipate we'll make the revisions and be working through ACRS to, as we prepare the final rule of the Commission.

Also, we are anticipating and are planning for a significant increase in workload, internal to the staff, in developing and improving our licensing infrastructure.

Our standard review plan, the chapters,

the main chapters in that that ACRS has reviewed to take a look at updating that. As you may be well aware, our budget so far, as it's gone for is, for Fiscal Year 2006, contained a 20 million dollar supplemental funding to get ready for the new reactor growth.

And a large portion of that is going to be invested in improving our infrastructure of the standard review plan. So the staff is now putting together a schedule for dedicating the resources that we're getting from Congress to enhancing the standard review plan chapters and updating them in the reg, in the requisite reg guides that go along with them, in preparation.

And that, I would anticipate that, as we develop that schedule, that will be of interest to you because we will be coming to you for the technical reviews and presenting them to you as part of our infrastructure development process.

Now, the combined licenses is the looming work on the horizon. And as I said earlier, there's a number of combined licenses coming. Dominion has declared that they are looking to be the first to submit a combined license application in 2007.

Then that will be followed, we've also

heard from Duke, Progress Energy, and then two from the NuStart Consortium of utilities. And those are all looking in the 2008 time frame.

What I think makes this a real challenge is that they haven't identified the designs. And, in fact, if they are interested in EPR or the ESBWR, something other than the AP1000 or the ABWR or the CE System 80 Plus, their combined license may in fact come in before the design certification process is complete.

Which would then have the staff and possibly ACRS looking at the technical merits of the designs as part of a combined license, as well as part of the design certification process.

And so that's a challenge as we go through, as we work this out and develop these schedules and look at these overlaps as to when are the utilities going to come in with this rather significant workload, quite frankly.

So that's one of our challenges.

MR. REYES: Let me just add to that to help you paint a picture that I've been trying to read. The yet to be announced Applicants, the rumors that there's more announcements coming, we're worried and we think we know the answer. Which is they're going

to continue to come in for 2008, and the question is what's magic with 2008?

Well, let me explain you the driver. The need for generation for the year 2017, for the period 2015 to 2017 is what's driving it. There are parts of this country where the electrical generation needs for that period of time, the projections are significant in terms of the need.

If you assume you have a five year construction program and you subtract those numbers and then you subtract the time that the Agency has to review the application, the math quickly leads you to 2008.

So we are expecting announcement that we don't know of, but we're expecting everybody to continue to announce 2008. Which go back to my original comment with license renewal still at the same pace to 2009, now you see the picture for both of our organizations in terms of what's looming ahead.

MR. DYER: And I, I forgot to admit knowledge that South Carolina Electric and Gas has recently announced that they are, they are looking at a combined license at a date to be determined. So that is also on our horizon, there's another utility.

MR. REYES: And they have hinted that it's

2008.

(Laughter.)

MR. DYER: Okay, Slide 5, please. One of our technical, ongoing technical dialogues with the ACRS is certainly the power uprates and the ACRS reviews of extended power uprate amendments, as well as some of the emerging technical issues that have come out of the power uprate program.

Certainly one of those technical issues is the BWR Steam Dryer issues that were most prominent at the Quad Cities Nuclear Station when the dryer broke apart, but it has raised questions about some of the other square hood design dryers and the ability to adequately predict.

And most notably now it's an issue that is one of the open items certainly for our review and soon to be, you know, your involvement with the Vermont Yankee extended power uprate review on that.

The BWR Owners Group has been and General Electric has been working on testing and instrumenting the Quad Cities in Dresden dryers and getting that information and putting together a modeling concept and presenting it to the staff.

And that work has been ongoing. And I think the staff is gaining a better understanding of

what's going on inside these steam dryers with the increased velocities of steam and as we go forward.

The other, a more emerging, new technical challenge, and I think this, this we've had dialogued before because ACRS recommended, as a result of some of our previous EP, Extended Power Uprate Reviews, that the staff look more critically at some of the accident and transient analysis codes and method used as we have issues with both, some of the PWR and BWR methodologies issues.

One of them is an open item that we're still working with the Entergy for the Vermont Yankee Extend Power Uprate. And we had issues raised with some of our PWR LOCA analyses recently that we're working on as part of our resolution of some of the extended power uprate issues.

This is an area that is still evolving. You know, extended power uprate from when we last talked it was, it was, power uprates was an issue that was an emerging technical issue.

Unfortunately, I think it's still emerging and we're still learning things about the Extended Power Uprate Reviews and doing some first-of-the-kind reviews, and that's an area where we, the staff, are going to be focusing a lot of attention in the

upcoming year. In that we, you know, we set a budget and we allocate our resources based on what we think, what our best engineering judgement is going to tell us is what it takes to do a thorough review to these proposed uprates.

And in almost all cases it's taking more than we're planning, because of surprises as we go in and start doing the review. So this is very much an emerging issue.

Additionally, the infrastructure issues were, you know, we've issued the review standard '01, for the extended power uprates. I think the Ginna Extended Power Uprate will be the first plant that's going to come in using the format prescribed by the Review Standard '01, and we now have that in-house and I believe, if not already, but sometimes during the September meeting you're going to be talking to staff about Reg Guide 1.82, the latest revision.

And that's an important part of, for the, particularly for the boilers on the power uprate and net positive suction head.

We, as I said, the Power Uprate Review Schedule looming on the horizon is, we currently have seven extended power uprates under review and expect to have three more in next fiscal year. We have a

total of 20 more power uprates coming.

Some of those, the majority of those are measurement uncertainty recapture and the stretch power uprates that traditionally ACRS has not reviewed but never, you have handled some of the emerging technical issue such as the questions that were raised about the ultrasonic flow meters and its ability to accurately predict the flows.

So this is an area that I think we need to be sensitive to and going forward it's one that we may have new resolutions and new questions and new issues to bring before ACRS. Slide 6, please.

Fire protection. Fire protection is an issue I wished I wasn't reporting on, but I am and it is still something that is very much an ongoing issue.

The first part, of course, the Performance-Based Fire Protection Rule, NFPA 805. We issued the final rule in June. We issued a Draft Reg Guide in 2004, and we're anticipating going to the ACRS full Committee next month in October of 2005, and hope to issue a final Reg Guide before the end of the year, hopefully in November.

This also, and related to this is the, with the final rule out, we now have two pilot plants or pilot utilities that have identified. Both Duke

and Progress Energy have come forward and identified their intention to implement or to pilot the NFPA 805 Risk-Informed Fire Protection Rulemaking.

And so we're in the process of, you know, following through on their transition to this alternative rule. Circuit issue resolution. We have a, we were, sort of had a minor course correction, I think, at the beginning of the calendar year, end of last year.

And on circuit issues we issued a regulatory information summary earlier this year and now have a draft generic letter with we're going to propose to get out for comment this month and hopefully and after we get the public comments, look forward to briefing the ACRS in February of 2006, on this generic letter associated with, well, associated with the circuit analysis, circuit issue resolution.

Another issue is Hemyc and MT Fire Barrier Resolution. I think as a result of some recent research findings, a good research effort, completed a testing on these barrier materials.

We've issued a regulatory information summary concerning those and we're looking to issue a generic letter on this subject and hope to have that to ACRS in December of this year. And then lastly,

the manual action rulemaking.

We've gone out on a proposed rule to identify, you know, what the value would be for the industry and potential use of the manual action rulemaking and how many exemptions is it going to eliminate going forward.

We're currently evaluating those results and depending on whether or not, we need to make a decision whether or not we're going to proceed with the manual actions rulemaking. And depending on that will be whether or not we're going to be coming to ACRS on this particular subject. Next slide, please.

Slide 7. PWR Sump Performance, commonly referred to as Generic Safety Issue 191. I think this is an issue where the ACRS and the staff have had an extensive and continuing dialogue.

This first slide sort of lays out our overview of the sump performance strategy. The top line was our compensatory measures were more on the short-term actions that we've taken to address the concerns of GSI-191.

CHAIRPERSON WALLIS: We're reading from the slide because the screen shows that you have no, you have no approach to this problem.

(Laughter.)

MEMBER APOSTOLAKIS: That's very unfortunate.

(Laughter.

MR. DYER: I've got to go speak quickly now, huh?

(Laughter.)

CHAIRPERSON WALLIS: I think we can just use the written paper handout.

MR. DYER: On your handouts, the gold slides, the gold blocks are those blocks that are currently in progress, where we're at on these slides.

And so for the top block, where we're talking about our compensatory measures and we're currently reviewing the bulletin responses that we had sent out with Bulletin 2003-01.

We've had dialogue with a number of utilities and feel comfortable that the utilities have taken the compensatory measures that can significantly reduce the risk associated with this issue.

The longer term path, the Generic Letter 2004-02, is, the issues are still ongoing. I know that we've had several letters back and forth on this particular issue as the staff moved forward.

But the staff has taken some actions, you know, on our part to address your concerns. I think

this is one where from the staff's perspective we're trying to make progress as we go forward.

CHAIRPERSON WALLIS: There are two things that occur to me. One is that these Licensee submittals have come in.

MR. DYER: Yes, sir.

CHAIRPERSON WALLIS: I think they're available on the Internet.

MR. DYER: I think as they're being catalogued and presented, given the due dates for the submittals that came in on September 1st, was the due date. And so whether or not they're available -

CHAIRPERSON WALLIS: I think, I think there will be some form in which we can access them.

MR. DYER: There will be soon if not. Yes.

CHAIRPERSON WALLIS: But what we're really looking for is the staff response to them. I think we're very much in suspense about what these will show.

MR. DYER: So are we.

CHAIRPERSON WALLIS: And the other thing is that there's still some technical areas which, you guys don't even know, well, maybe we'll hear about it later, are being researched.

And this gives the potential for

surprises.

MR. DYER: I think we agree. If I can go to Slide 8. This is the near-term schedule that sort of fits those blocks as we were talking about. And I think, Dr. Wallis, getting your point, we're also still in the process of doing the pilot plants.

And I think we're on our second one now. And, at the Fort Calhoun Station. And then also effective, you know, for the most part, the first of September, we started getting in the Licensees responses to the Generic Letters and we're in the process of reviewing them and certainly we can schedule a summary briefing of the ACRS as we understand them and we're going to put them on the, if they're not, they'll be in the ADAMS System and available for you.

Also, after I complete -

VICE CHAIR SHACK: Is everyone going to meet that 9/1 deadline?

MR. DYER: I don't know. I think they'll probably tell us something. I've got David Solorio here and John, Tom, can you -

MR. O'HARA: Yeah, Tom O'Hara from the staff. We currently have 68 out of the 69 PWRs are in one way or the other. Waterford requested an

extension because of the hurricane so they're not quite in yet.

MR. DYER: So I think everybody has made a good faith effort to get it in. And the staff has acknowledged that as we review them, we're going to be reasonable as we go forward.

Carl will touch on some of the research aspects, too, but our overall goal is to have this, have resolution of this GSI by the end of 2007, calendar year 2007.

And, of course, as a result of that, in order to do that, once the staff gets its resolution, then we'll have to present it to the ACRS and I'm sure we'll have, as was requested, we'll have several dialogues between now and then on this subject.

MEMBER SIEBER: Do you expect any of the research and experiences that the PWRs will have in the next two years, will cause you to look again at DWRs?

MR. DYER: I do not see, I think Carl can talk about some of the research activities. I don't think it's going to, what we're going to learn is going to address the BWRs.

I think we may have to re-look at some of the PWR solutions as whether or not our margins was

correct and what some of the solutions are. But this is very much, the research is just being done now.

MR. REYES: Carl is going to touch on it but I think the chemical reactions are the drivers of the issues. And I think you'll have a different situation in the environment on the boilers in the PWRs, but we're going to share with you where we are on that.

MEMBER SIEBER: All right.

CHAIRPERSON WALLIS: I see you put down 12/05, PCR Subcommittee meeting. This is a detail we shouldn't really need to get into, but I don't think it's on my schedule.

MR. DYER: Okay.

CHAIRPERSON WALLIS: I'm just curious about it.

MR. DYER: Okay, we'll take that for an action item. Okay, with that, let me turn it over to Carl to talk about some of the research activities going on in GSI-191.

DR. PAPERIELLO: Okay, if I could have Slide 9. Before I talk about an overview, I'm just going to talk about the research supporting Generic Safety Issue 191.

We stated about a year ago in conjunction

with the industry, ERPI, the integrated chemical effects testing.

The, further, as a result of some of the earlier results, there additional lines of research were added. Head loss, downstream effects and coatings transport. They are being done by us and not in conjunction with the industry.

For the chemical effects testing, the experimental work is done and with our agreement with EPRI, we share the raw data. Each of us interpret, does our own data interpretation. And we're in a process of doing that, as well as getting further research on the compounds.

We got different chemical compounds as we ran different tests in different configurations, you have different chemical reactions.

Some people were surprised. From my viewpoint, at least in some cases, they remind me of what you learned in general chemistry, sodium hydroxide reacts with aluminum and forms hydrogen in a gel, aluminum hydroxide.

We know what compounds of phosphate are insoluble and what are soluble, from our general chemistry classes. And so some of these things I'm surprised, from my side, that they haven't been

thought of before.

But we have them. The question is what are the actually detailed compounds, all of them? What are their physical forms? The various types of crystalline structures or amorphous structures and things like that.

If you know anything about boron, you know that boron can have incredibly complex chemistry, so I don't know if there's any straight, what I'll call, straightforward. We only have to deal with general chemistry compounds or whether or not we got some compounds that can form more complex molecularly.

We'll know that when we're done all those analyses.

CHAIRPERSON WALLIS: Carl, not to get into details, but you said this research is done.

DR. PAPERIELLO: Right.

CHAIRPERSON WALLIS: Did it answer the questions or are you going to have to do more?

DR. PAPERIELLO: I don't know. What I'm hoping, and there has been some testing of chemical thermo-hydraulic codes, and one code seems to be promising.

I don't see how we can possibly do more testing. I guess you could, but we're going to need

some, a lot more resources to do it. We have already put several millions of dollars into these tests.

And I, it looks like things depend on so many different changes, that running two or three more tests may not help us very much. You might have to, and, if anything, we may have to run every configuration out there, or somebody has to run them.

It might be the burden end question is why not the Licensee, if that is required. I'm hoping that we can get, as a result of these data, we can come up with - I'm hoping, this is my personal view, not necessarily my staff, is we could find a thermo-hydraulic, not thermo-hydraulic but a , thermo-dynamic chemical, thermo-dynamic code which works well enough.

The issue is well enough to predict what would likely happen. Headlosses we're looking at in terms of the kind of materials that are being used and how they behave under flow and under compression with variable flow rates.

Downstream effects if material gets through the screens what will happen to them as they pass various choke points in the system. Right now we're looking at the high pressure safety injection throttle valve performance.

And then coatings transport. If coatings

material comes off containment and various objects in containment, what do they do when they hit the pump screen?

We expect most of the current research program to be done by April. Now whether we're going to have some results that require additional work, I don't know. I would be surprised if everything is wrapped up.

I will not be surprised if we have loose ends that have to be dealt with and we're going to have to figure out where to go.

MR. REYES: One of the questions that I don't want to be ruled out, that I think we need to reflect on is concentrate the effort here on the chemical reactions on all that, but we need to ask the basic question do we know now a lot more than we did when we decided to have those chemicals be put in?

We may be solving the wrong problem. So the issue is still broad enough that we can give you a good feeling of where it is but I think the testing has given us enough to try to raise the questions.

DR. PAPERIELLO: It raises the question.

MR. REYES: To raise the questions and we'll have to go in that particular endeavor to find out how do we solve it?

DR. PAPERIELLO: We use, I mean, and one reason for using additives is fixing iodine so it doesn't go airborne after it's washed out.

The question is do you need it? Or is there another way to do it? I mean, I think, but that is an option.

MR. REYES: And we learned a lot in Three Mile Island about the, how the partition occurred etcetera, etcetera, and all those decisions with the chemicals preceded all that.

And, but there has been, there hasn't been a driver that has forced us to take a hard look and say did the decision we made in the '60s and '70s, in today's environment, do we know better?

And that may be, it's completely different with the approach that we're taking, but it all comes out of the same issue.

DR. PAPERIELLO: Okay, can I have Slide 11, move two slides forward. Okay. I want to start my presentation with expressing my appreciation for the ACRS's review and input to research products. And we see your review as value-added.

Having said that, my observation is we don't always agree with you and I have always expressed the view to my staff, that that's okay. And

if we do disagree with you I want it said and not sometimes, frankly, I've seen documents come across my desk where we really didn't agree, but we just swallowed our tongues and put out what I'll call a politically nice answer and I don't like that.

I'm a Scientist and I, frankly, am pursuing what is the truth. And that doesn't solve the problem. But I do, it's important if you see weaknesses in what we do, you point them out.

But if we disagree with you, it's important for us to disagree and we'll hash it out so we come out in the right place.

You're also part of our quality initiative. When I took over research I was very much concerned with the issue of quality. Actually, I'm less concerned today than I was when I first took over.

I mean my view of, as a manager, I'm interested in quality, quantity and timeliness, the three performance goals. I can measure timeliness, I can generally measure quantity, but quality is something very difficult to do.

Usefulness in my book is a, is somewhat of a surrogate for quality in what we do. What I've been struck with, since I've taken over research, is how,

the worldwide use of NRC research results.

And particularly our computer codes. Our major computer codes are used in countries around the world. They are used by educational institutions.

Fire Protection Codes. I was at NIST two weeks ago and what I was very much surprised to learn is the codes that we have developed with them, we worked with them for 25 years now, are not only used in the nuclear industry, but used all over the world in fire protection period.

Fire Marshall use the codes to determine whether or not a building can be evacuated before smoke builds up to the point where people can't find their way out. So there is, and my, it gives me some assurance that if there were errors in these products, there's a lot of people - my concern is we publish new Regs, they're great literature.

They don't get normal peer-reviewed like the peer publications and scientific journals, and I'm much more familiar with. Well, I'm familiar with, when I published, I published in peer-review journals, before I came to work for the Agency.

So anyway, but, it's important, your review in my mind is extremely important because we don't, it's part of a peer review of the work. I will

talk in a few minutes about the work that we expect to bring you over the next two years.

I know you periodically review our program and there's a new Reg put out. I want to express also, though, a philosophy that I've been promoting since I took over the Office of Research.

We're careless with the term. It is not the Office of Research, it's the Office of Nuclear Regulatory Research, that the, our function is to support the licensing and regulatory offices.

There's a lot of research that's nice to do, but if it doesn't support the regulatory process, it's not within our mission. We have limited resources. We have very little, in fact almost no anticipatory research going on anymore.

Almost everything is based upon a need of an office. In the past we had far less than we said we had, because a lot of stuff that the Commission gave us to do was put in, just called, bookkeeping called anticipatory, like preparation of the Agency's Abnormal Occurrence Report, the Generic's Safety Issue Program.

If we didn't have a user need it was called anticipatory. Well, a lot of stuff, when I looked at the numbers, they really weren't. But right

now we have almost none.

We have a fixed budget, and so if we get new work we have to shed something. We have to go through an add-shed process which basically means something that somebody has requested has to be deferred.

I just need you to understand that because sometimes you make recommendations that we ought to do this, that or the other thing. Well, to take that on, it means that something has to go away.

CHAIRPERSON WALLIS: Carl, you're talking about budget and how you have to be careful how you allocate it. I know that glancing at your slides that the slide, the topic that gets the most presentation here is this technology neutral framework.

DR. PAPERIELLO: Right.

CHAIRPERSON WALLIS: And I'm not aware that has a large budget.

DR. PAPERIELLO: There's not what?

CHAIRPERSON WALLIS: I'm not aware that that has a large budget, yet it is the topic that you address the most in your slides.

DR. PAPERIELLO: I'm going to get, okay. Okay, let's go to the next slide and the technology neutral frame work.

MEMBER APOSTOLAKIS: Well, let me ask something, though, before we go there. The previous slide, assessment of quality of selected NRC research projects.

You said earlier that you didn't, you had quantitative measures for timeliness and so on. The ACRS was giving you quantitative measure for quality too.

DR. PAPERIELLO: Right.

MEMBER APOSTOLAKIS: I mean you can disagree if you want. I feel that, I mean what happens to these quantitative? Okay, we send you a report that says, you know, this particular project is a five, whatever that means.

DR. PAPERIELLO: Right.

MEMBER APOSTOLAKIS: Then what? I mean are there any consequences for that?

DR. PAPERIELLO: If there are weaknesses we'll correct them. If it's okay, then it's good.

MEMBER APOSTOLAKIS: But it does not contribute to the long-term use of the office as to who is good and who is bad?

DR. PAPERIELLO: Well, no, it is. It is. The question is how do I know, I need a measure on whether or not the research has quality? Is it good

research? I mean, as I said, there were, when I first took over the office that was a concern.

I actually have less of a concern today than I had when I took over the office. And because I know realize that I have a whole lot of people looking at this thing, even though the mechanisms aren't the mechanism of peer-review literature where, you know, whatever you publish gets sent out to a group of peers to look at before the journal accepts it.

I mean we put out a lot of gray literature and that, it's of mixed quality, you know. We all know the gray literature can have mixed quality.

MEMBER APOSTOLAKIS: Is the information we send to you forwarded to other places or just stops with you?

MR. REYES: How do you use the feedback mechanism? When ACRS gives us feedback on quality, he's asking how do we use it in our organization?

DR. PAPERIELLO: Well, my staff and I look at it and if there are things that need to be fixed, we fix them. And I know the Commission looks at it too.

MR. REYES: If there's another office involved, that will be shared with them?

DR. PAPERIELLO: Right, we would do that, yes.

MEMBER APOSTOLAKIS: Okay. That's fine.

DR. PAPERIELLO: Okay. But, you know zero sometimes is a good answer. I mean if there's no problems, that's worthwhile knowing.

MEMBER APOSTOLAKIS: Yes, because it raises some very interesting discussions among ourselves here, you know, as to what is quality? I mean, some projects do not require any particular degree of creativity, right?

And others do. And you have to take all these things into account.

DR. PAPERIELLO: I understand that. No, I understand that.

MEMBER APOSTOLAKIS: Okay, good, that's fine, let's go on.

DR. PAPERIELLO: Slide 12. The technology neutral framework and the research, the regulatory structure.

The question is, for future technology, particularly new reactors that are not like water reactors, and Mr. Dyer touched on this in his presentation.

What should the regulatory framework be

like? In the past, my understanding is we wrote exemptions and did it by exception, because we did license high temperature gas-cooled reactors.

Right now we're primarily in Part One, the guidelines and the criteria. How do you do it? Can I have Slide 13?

We feel we have established a concept. We established staff positions on various policy and technical issues. The Commission has voted on some of these.

There's other issues that need to be worked on. There is a paper in front of the Commission right now that addresses the issue of risk guidelines for new reactors and how should those risk guidelines be applied?

Should they be applied to the site? Should they be applied to individual units at the site? And, anyway, that is ongoing.

MEMBER APOSTOLAKIS: Well, this, you use some words now that make me ask a question. You said how they're applied? I mean that is something, you know, this Committee reviews proposed regulatory guides through making and so on.

DR. PAPERIELLO: Right.

MEMBER APOSTOLAKIS: We very rarely as I,

as far as I know, actually see how these things are actually implemented later. Because then it goes to NRR and, you know, there is reviews and so on.

But my impression is from what I have seen that we may have a gap between what some of these documents say that the Licensees ought to be doing and what they're actually doing.

I'll give you an example. Regulatory Guide 1.174, which we all know is a landmark Regulatory Guide. It's a beautiful discussion on varies kinds of uncertainties that people have to take into account when they submit a request for a license basis change.

And I'm really wondering whether anyone has ever done that, and why the staff does not object when they don't do it. I don't know. I mean I cannot say that nobody has ever done it, but from what I have seen, uncertainty analysis of various kinds, especially, you know, when it involves models and so on, I don't know to what extent the Licensees are questioned when they submit the risk-informed application.

DR. PAPERIELLO: I don't know -

MEMBER APOSTOLAKIS: I'm not sure that this is something that we can resolve now, but I just

wanted to bring that to your attention that we may have a gap sometimes between the beautiful stuff we're saying in some of the regulatory documents, I'm sure the rules are not, are really obeyed, but the guides, the regulatory guides, and what is actually being done.

And that is very important to the technology neutral framework, and this is one of the many, many things that this Committee has been debating among itself for the last three months, I think it is now.

DR. PAPERIELLO: Umm hmm, right.

MEMBER APOSTOLAKIS: I preparation of the letter. But you can't really separate it, coming to this now, the requirements and the framework from the ability and willingness of people to do a good job meeting whatever requirements we tell them they have to meet.

In other words, if we -

DR. PAPERIELLO: I'm going, I'm going to back off, I'm going to give you a legal response. A regulatory guide is not a requirement. A regulatory guide is just that, a guide.

The Licensing Office, when it gets an application in, legally, they have to make a decision

on whether that's applicable. When they issue a License Amendment or issue a license, they made a judgement that what the Licensee submitted or the Applicant submitted, was acceptable. And the guide is only one way of doing it.

MEMBER APOSTOLAKIS: Yeah, I know.

DR. PAPERIELLO: I mean in a very precise way, you know.

MR. DYER: Dr. Apostolakis, I think one of the things, rather than get bogged down here, I'll take it as an action item.

MEMBER APOSTOLAKIS: No, that's fine.

MR. DYER: Part of our reorganization, we're consolidating our risk activities into one organizational unit as opposed to being dispersed. And I think possibly when we stand up that organization we'll take that on for a question and get back to you.

MEMBER APOSTOLAKIS: I fully agree with you, and I'm fully aware of what Dr. Paperiello just said. I mean I know that the regulatory guides are not rules but I think it's something that maybe senior management ought to investigate.

MR. DYER: That's a good feedback for us.

DR. PAPERIELLO: The, we've had public

workshops. We did have a, we're initiating some work on other parts. And our overall, we will be coming to you in the, over the next six months on a number of issues.

The, and we expect to have, our goal is to have the draft framework for public review and comment by next summer. At that point we should be transitioning. And the lead for this effort will go from research to NRR in the form, probably, we haven't, I know Jim and I discussed this a number of months ago, and it would an ANPR on the, for rule.

MEMBER APOSTOLAKIS: My impression is that the industry is not too crazy about this. Is your impression different?

DR. PAPERIELLO: Pardon?

MEMBER APOSTOLAKIS: The industry, is the industry supporting this? I'm not sure that they are.

DR. PAPERIELLO: The industry supports it. The industry, we had a public meeting on the 25th of August. The industry supports it.

I'm not sure the industry supports it in the sense that, how much effort, in other words, how much resources they can devote to it. In other words, there may be more of a burden on us to develop proposals for rule than the industry developing

proposals for a rule.

That's my, that's a sense, I don't have a real statement to that effect, but that's my sense.

MR. REYES: But I think it's related to the earlier comment we made, which is that in the short-term horizon, the utilities, the customers of the technology, are concentrating on live water reactor technology is familiar for all of us. And so it becomes a -

MEMBER APOSTOLAKIS: And they should actually.

MR. REYES: - it becomes a business decision in terms of where do you put your resources. And if you're contemplating different technology for that company it may be wise for them to do that, but I think Carl is saying they're interested in it, but when it comes down to putting the research, the money to support it, then you don't see the same energy and desire.

DR. PAPERIELLO: He said it, I was trying to skirt it.

MEMBER APOSTOLAKIS: This framework really would apply to Generation 4, I mean the way I see it.

DR. PAPERIELLO: That's exactly right.

MEMBER APOSTOLAKIS: Yeah, I mean

everything else before that cannot wait for this.

DR. PAPERIELLO: That's right.

CHAIRPERSON WALLIS: I have a comment here. My colleague, Mr. Apostolakis raised the question of how does industry react to this? It seems to me there's another player in this and that is the public.

And one of the great services you could do to the public would be to give a clear, logical, unequivocal and all sorts of adjectives I could add, description of your basis for regulating these new reactors.

DR. PAPERIELLO: Slide 14. The issues that we expect to be discussing with the ACRS is the use of probabilistic approach to establishing plant licensing.

The identification, selection and acceptance criteria for design basis events. The safety classification of systems. The reliability criteria to be used instead of single failure.

Defense-in-depth. How do you define defense-in-depth? Model, how do you determine if you have sufficient defense-in-depths? And changes to the PRA Policy Statement to include defense-in-depth.

Containment performance standards. And what the, what is a containment? Emergency

preparedness considerations, PRA requirements, and the integration of security.

The Commission is very interested in having security integrated into the design. Next slide, 15.

MEMBER APOSTOLAKIS: These are all easy subjects.

DR. PAPERIELLO: They are not easy subjects.

(Laughter.)

DR. PAPERIELLO: And, but, when you go forward with a rulemaking you're going to have to deal with them. And the other thing, even when you see even new reactors, new light water reactors, one of the things that has struck me is that the rest from external events dominates.

The internal PRAs are well below the risk from the external events. I see this being the same thing for these new designs. And so there are things that have to be considered.

MEMBER APOSTOLAKIS: Because it's awfully expensive to bring down the seismic risk, as we heard yesterday. Anyway, I'm sorry, go ahead.

DR. PAPERIELLO: Other major issues and many of these I think you know about, is the

instrumentation and control research plan and results.

I know you've put a lot of effort in reviewing that. When I took over research, that was a major initiative of mine. I wanted to get my hands around what we were doing.

It was the largest area of research that was classified as anticipatory. I now have a plan that basically, the offices we support buy into and has your review, and puts discipline in a process.

Because as I've looked into this issue, we have to be careful where we spend our money. Billions are probably being spent on other parts of the U.S. economy because this is not unique. Many of the issues are not unique to nuclear.

And we need to primarily focus, I mean, one of the things that impressed me with the national labs when I visit them, is everybody wants to work on solving problems. This is one area where I'm more interested in defining the problem.

In other words, what are the regulatory requirements and not how do you fix them? Because I know billions are being spent on fixing them. I'm trying to come up with what are an objective set of performance requirements for digital instrumentation and control, because there's no, and there's also no

tight dividing line between computers and the digital instruments.

So it's a question of dedicated micro-processors and flash memories and things like that versus something that has a keyboard attached to it.

There's a lot of issue. Don't go into the details but it's a question of discipline into the program to support the licensing function, the regulatory function of the Agency.

Which is primarily performance criteria and not how do you do it, because there's billions being spent out there.

MEMBER APOSTOLAKIS: I do have a comment on that. Those billions do not necessarily solve problems.

DR. PAPERIELLO: Understood.

MEMBER APOSTOLAKIS: And they have made, in the literature there's a lot of stuff that has not undergone the scrutiny that the nuclear people usually compose on their own stuff.

DR. PAPERIELLO: I understand, but a few million versus billions, I mean, it has to be wisely in focus.

MEMBER APOSTOLAKIS: I don't disagree with that.

DR. PAPERIELLO: The purpose of the plan is to focus it and get everybody to agree.

MEMBER APOSTOLAKIS: Yes. Absolutely, I'm with you.

DR. PAPERIELLO: Yeah, okay. Regulatory Guides. I have a list, I don't know exactly how many you will see over the next two years. The numbers I'm given are between 35 and 40.

There are about eight of them that deal with radiation or Division 8 radiation protection, and the remainder are in Division 1, and they're spread over seismic issues, there's a number dealing with seismic.

Some dealing with containment, some with PRA. A number with instrumentation and control. Generic issues are -

CHAIRPERSON WALLIS: Can I say something about Reg Guides, Carl?

DR. PAPERIELLO: Pardon?

CHAIRPERSON WALLIS: Can I say something about Reg Guides? There are two things that come to mind that we've talked about over the years, since I've been a member.

One is do the Reg Guides, some have been there for an awful long time and then they're pulled

out and used and we say, gee whiz, that doesn't really, that's not really the best thing we could do today.

The other thing is there's been at least one Reg Guide which was just about to come out, it seemed, when I joined the Committee eight years ago, and it still hasn't appeared. It's still about to come out, and I'm a bit mystified by that.

Why does it take so long? This is something that would seem to be ready to issue eight years ago.

DR. PAPERIELLO: A major problem in the Office of Research, in terms of timeliness, and this has been something I've spent the whole time I've, it's been the concurrence process.

Of all offices, we need a wider range of concurrences and approvals for what we do than most of the other offices. Because, you know, we're supporting.

Sometimes that doesn't go all that fast. People get things in and they've got a stack of things to do and it doesn't always, yeah, it's not an excuse, it just facts that we have to - I've been working with my staff to take a better into the planning time.

I'll look into the particular Reg Guide

you raised and see where it's stuck. The generic issues that we plan on, we expect to bring up are the pipe effects, pipe break effects on control rod drive, hydraulic lines, heavy loads and ECCS suction, and cavitation due to gas binding, vapor locking and the like.

We'll plan on discussing some of our code work with you, thermo-hydraulics and severe accidents. Again, both codes, which I note are widely used around the world. Human reliability.

MEMBER DENNING: Carl, could I interject here on the codes. As far as SPAR is concerned, and I don't know if you plan to say anything about that, George's Subcommittee.

We're going to be looking in greater detail at SPAR, but I, one of the codes that we're, I'm sorry, one of the projects we're looking at right now for the quality does involve SPAR.

And it looks to me like SPAR really is an important part of all of our risk-informing work. And it's one that I'm really surprised at how far it's gotten in the last couple of years.

Change in direction from earlier, but in a quite positive way. But it does look like it involves a major investment, still in the future.

DR. PAPERIELLO: It is.

MEMBER DENNING: And so I was just kind of curious as to how you see that and whether you see that as an area of major future investment?

DR. PAPERIELLO: In my, in the '06 budget, it's I believe a couple of million dollars. So it is a major investment.

MR. REYES: It's a significant investment.

DR. PAPERIELLO: The fact - I was out at Idaho last week and this was one of the topics we discussed.

MEMBER APOSTOLAKIS: Yeah, this Committee, as Dr. Denning pointed out, is planning to review the details of SPAR. For some reason we haven't done it, I don't know why, but given the importance of the SPAR models, we plan to, and you'll probably see a few letters from us starting next year on the SPAR models.

DR. PAPERIELLO: Okay.

MR. REYES: Good, we welcome that. It is our plan to use that tool more and more.

MEMBER APOSTOLAKIS: Absolutely.

MR. REYES: So it has to be a good tool.

DR. PAPERIELLO: Human reliability analysis. I'm going to throw something out on the table, because it struck me when I was being briefed

on this subject out at Idaho.

What's the difference between safety culture and human reliability?

MEMBER APOSTOLAKIS: Safety culture is one of the contributors of the performance shaping factors of human performance.

DR. PAPERIELLO: I told the staff I want a briefing on the work we're doing on safety culture to understand, as a Scientist, what it means. And human reliability seems to me something I can measure.

I'm speaking as a Scientist. Safety culture, I have more difficult - I guess I just know it when I see it and when Idaho described what they were doing, I was trying to figure out how they the two were related.

Because one looked almost like the other. And when they looked at the example, but anyway, that's just something I'm throwing out and I'm churning in my own mind.

MEMBER APOSTOLAKIS: Is ATHEANA a big part of your budget?

DR. PAPERIELLO: Pardon?

MEMBER APOSTOLAKIS: ATHEANA?

DR. PAPERIELLO: Yes. I don't know how much, though, I don't know the, I can't tell you. I

just know -

MEMBER APOSTOLAKIS: Oh, that's okay.

DR. PAPERIELLO: SPAR I know because I looked at it last week because I was meeting with Idaho on the subject.

The, and there will be human reliability issues in new reactor design and operation, but that's not until '07. Risk-informing Part 50. There will be issues that come to you on that, PRA standards and Reg Guide 1.200.

I'm going to throw out a point that you, that ACRS has raised. I'll have to frankly say I disagree. And that deals with iodine spiking. We have it as a generic issue, because, from my understanding, ACRS raised it.

And I happen to be a Health Physicist and I'm well aware of iodine spiking. I would like to know what is the safety benefit, the regulatory benefit of understanding it mechanistically. I mean it might be nice to know.

But I guess quantitatively, I'm just concerned that it's going to cost a great deal of resources to do, and is it cost benefit? I'm not asking for an answer right now, but I raised the point initially that there are times I disagree or the staff

disagrees, and that's okay.

MEMBER APOSTOLAKIS: We never claim infallibility.

MR. REYES: We agree on that one, we agree on that one.

(Laughter.)

DR. PAPERIELLO: And I would argue, as a Scientist, there's probably never closure, never real closure. There is, though, practical closure, but anyway.

MEMBER APOSTOLAKIS: But I have another question which is related a bit to what Professor Wallis said earlier. I'm really surprised that risk-informing Part 50 is one of other major topics and technology neutral framework had three slides of its own.

I would expect this to be the major issue. Isn't the risk-informing Part 50 really the big thing? Am I missing something or you just happened to put it there?

I would expect to see three or four slides on that, and then the technology neutral framework to be a bullet, one bullet among many. What am I missing here?

DR. PAPERIELLO: Maybe it's what -

MEMBER APOSTOLAKIS: 50.46, I mean that's big deal, isn't it?

DR. PAPERIELLO: I know.

MEMBER APOSTOLAKIS: I'm sure you do.

DR. PAPERIELLO: Okay, noted, duly noted.

MEMBER APOSTOLAKIS: Okay. Or did you think it was more challenging, the other thing?

DR. PAPERIELLO: Yeah. I will turn it over to Roy Zimmerman.

(Laughter.)

MR. ZIMMERMAN: Good morning, I appreciate the opportunity to be able to talk with the Committee this morning. Initially I want to align with the comments that Jim and Carl made with regard to the value that we get from the Committee's review and the enhancements to quality that come from those reviews.

I recognize that with our office there is a smaller quantity of activities that come in your direction, but those that do come, we clearly benefit and for that we thank you.

One that we are engaged on and I wanted to chat with you about a little bit, as we move forward in a post-9/11 world to where emergency preparedness rulemaking, one of the fundamentals, the building blocks associated with that is the Bulletin 2005-2,

that we issued this past July.

And you reviewed it shortly before its issuance. And I view this, this Bulletin as being a fair amount of a paradigm shift with regard to emergency preparedness.

When you overlay security as an initiating event, and it challenges some of the premises that in in the past, we haven't really needed to focus on so much.

As I know you know from the briefing, what we're trying to do through this Bulletin and then after public comment being considered and going through the process, if it makes it's way through into the rulemaking is more of a leaning forward, an anticipatory recognition.

That if we were to wait for the degradation of hardware systems or damage to the core, we're basically losing time. And in this type of scenario is the recognition that there are adversaries that are purposely trying to cause that, that type of damage.

So we tend to lean forward more in terms of the unusual event classification and alerts in site area, in terms of what security events get into those classifications. And we recently had a public

meeting, last week, for a day and a half.

And that was the other topics I'm going to mention. It made for some well energized discussion, because there's a lot of different stakeholder views on that. But I think on this particular topic, I think the various stakeholders recognize that some additional anticipatory efforts are appropriate, rather than waiting for potential degradation or signs of losing barriers.

We also have, in this Bulletin, and had a fair amount of discussion at the public meeting, about our desire in the NRC to improve upon what we require, which is a one-hour notification.

We recognize post-9/11 and the way a lot of attacks have occurred. We're interested in getting a phone call within 15 minutes that will be very brief.

And that's a key for the industry and for the state and locals that we get informed of it, that they're confirming for us that there has been an attack, and then we have to fight our instincts and hang up the phone, because we know that they're very busy and we have a lot of other people to call.

And that allows us to be able to get other federal responders engaged and to blast dial our

Licensees, recognizes the tactic of concurrent attacks and wanting to be able to get others on their toes at other facilities that we regulate.

And that discussion, again, we'll give you more briefing when we talk to you in early October to go over the results from it. That was a lively discussion as well.

And, again, a lot of focus that if the NRC gets an earlier call, does that mean I'm not going to get mine, as a member of the state or local responder? And that's a fair concern.

And it was good, good healthy discussion on it. It also challenges aspects such as, how do you keep the people that work at the site safe? If you end up having an attack and you have people that are firing weapons or you've had, you know, an aircraft crash, you've got large fires.

The site accountability location is where you would normally go. It may not be the right place to go in evacuating the site, it may not be the right thing to do, sheltering and hunkering down and trying to stay out of harm's way.

So it's those types of issues that are in this Bulletin. I know you're familiar with it. What we're doing in we are gathering the responses. We

have all the responses now. Then we're assimilating and reviewing that input.

The actual public comment period doesn't expire until the middle of October, I believe the 17th. So the timing for giving you a detailed briefing in early October, after we've assimilated the information, I think is very timely.

We'll benefit from your reactions. We'll see what the comments are that we get from the public. And, again, I look at this as a building block to bringing additional work, coming your way, as we move forward into a rulemaking scheme from this.

Let me move to the new reactors and -

CHAIRPERSON WALLIS: Can I say something about -

MR. ZIMMERMAN: Please, please.

CHAIRPERSON WALLIS: - new reactors to make a connection with what, I think, Carl said earlier. That in these risk evaluations sometimes the external events turn out to dominate.

Well, if we were clever enough, we could design new reactors such that the internals events were, came down as almost to zero.

And then the kind of thing you're talking about would presumably assume much more importance,

relatively, in design space. And if you can design away all the internal events, then you have to worry about the kind of thing you're talking about perhaps more, in future reactors.

MR. ZIMMERMAN: It's interesting that I'm confident that you're very familiar with what we refer to as beat-by-beast from the February 25th Order.

And in watching the hurricane unfold and the Waterford facility and the steps that they took, some of it under a, I'll call it a security hat, if it had an initiating event like that.

But that same equipment, those skid-mounted diesels, those temporary air compressor that they brought on. Regardless of your initiating event, if the plant is about to have a bad day, and you know it's going to have a bad day, having that staging available is very useful.

And they made, they took advantage of that staging and pre-thought out equipment, that just like you're saying, it gives you that additional defense-in-depth, so that you don't need to go further, perhaps, with regard to getting to a stage of sheltering or having to move people.

So we are very focused on that, and we have looked at, we've looked at Waterford and we plan

on looking at Waterford more closely, for what we can learn from it.

And I see that factoring into something again that may be a good topic for discussion down the road. And then a bigger picture, the entire federal government response to the hurricane which, as we all know is getting a lot of attention right now, I think as things die down a little bit, we need to take advantage of what are those global learnings and how do they apply to our business?

And how can we improve things here? So, again, as I look forward, over the next year or so, these would be the types of topics that I would see us engaging on.

MEMBER APOSTOLAKIS: Well, one thing you might learn about is that you can have a plan to evacuate people, but what happens when you actually try to do it?

MR. ZIMMERMAN: Right. And that puts the, that puts the look back on sheltering, where sheltering may be a better way of going.

We do have a contract with Sandia that's looking at the merits of sheltering in certain situations, vice evacuations. So, these are decisions, as well all know, that have to be made very

quickly, but you need to have the information so you can make that informed decision.

And so we look forward to your input, the Sandia Report, as we move forward. Again, I don't, I will touch new reactors lightly beyond the dialogue thus far, since Jim Dyer covered it very well.

We'll be focused on, again, learning from the early site permit reviews and trying to factor that learning in to enhance our process. And we recognize that the rulemaking that's underway, we need to be looking towards consistency between Part 50 and Part 52, and trying to make things as clear as we can, while trying to maintain a performance-based overview.

So we will be doing that. And with that, I'll be glad to take questions.

MEMBER APOSTOLAKIS: I have a question. Who decides how much of the information you generate in this area that becomes public?

MR. ZIMMERMAN: In the area of emergency preparedness or -

MEMBER APOSTOLAKIS: Well, the reactor studies and all that.

MR. ZIMMERMAN: Well, we have criteria that we use. Some of it was pre-existing and defined in terms of confidential and safeguards information,

that's known quite well.

We found, post-9/11, that there was other sensitive information that previously, our prior mind set, pre-9/11, had some of that information made available because when we looked at it, we weren't thinking like an adversary to the degree that we do now.

And when we look at it and we see blueprints and it gives dimensions and rebar sizes and recognizing that -

MEMBER APOSTOLAKIS: I agree with that, but it seems to me that you have to balance this against what Professor Wallis mentioned earlier, public confidence.

MR. ZIMMERMAN: Right.

MEMBER APOSTOLAKIS: And it seems to me that there is a lot of useful information that has been generated that the public is not aware of.

And, as a result, they are concerned. I mean a lot of the public are not even aware that this is going on, and there was a news item last week that maybe the federal government is overdoing it classifying everything after 9/11.

MR. ZIMMERMAN: Sure. Well, when we took the -

MEMBER APOSTOLAKIS: So, after all this, I mean is it possible to revisit these issues?

MR. ZIMMERMAN: We've been revisiting. It's a very good point and we have been revisiting it and we're not done revisiting it.

One of the most pronounced ways that the public saw it is when we took the ability to go to the ADAMS documentation -

MEMBER APOSTOLAKIS: Yes.

MR. ZIMMERMAN: - and took that down. That was, you know, -

MEMBER APOSTOLAKIS: It was pretty drastic.

MR. ZIMMERMAN: It was something that the public quickly recognized they lost a lot of information for, what we tried to make as short a time as possible.

But we have modified our criteria from information that could clearly be used by an adversary, to information that could reasonably be of use to an adversary.

And that actually tended to sweep more information into it. So we continue to work to strive for that balance. We pride ourselves in being a very open Agency, and we talked about this at the Security public meeting that we had right after the emergency

preparedness one.

And we had a lot of stakeholders there and a lot that are critical of us. But they indicated, to my comment, that we are a very open Agency and they agree.

Security is the exception to that. And the Commission has tasked the staff to take a look at that pendulum swing and to say has it swung too far, and it's looking for the staff's position on whether it can swing back and at what appropriate time.

There's one area where there's agreement that if there's an existing vulnerability that is known to exist, that would be beneficial for an adversary.

That wouldn't be good to put that information out there while that vulnerability is there.

MEMBER APOSTOLAKIS: And obviously that's not what I mean.

MR. ZIMMERMAN: I know, I know. So taking that and planting that one, it leaves a lot wide open for a continued review. And that's exactly what we're in the process of doing.

MR. REYES: Yeah, where we are is that after September 11, we had to take some relatively

drastic moves and we're exactly at the point you're talking about.

Which, we're now reflecting on that, and saying perhaps the pendulum swung too much, we need to come back a little bit closer to the middle. And the Commission has instructed to that.

And I'm pretty sure we're going to move from where we are.

MR. ZIMMERMAN: I think so, I believe so.

MR. REYES: It's obvious to me we're going to move to a more reasonable position from the public access.

MEMBER APOSTOLAKIS: Good, thank you.

MEMBER POWERS: You have, in the course of this presentation, laid out a fairly aggressive program that you see for yourself. In some cases you've indicated you were hiring in order to address that.

I know for a fact you're bringing a lot of bright, young people on board to address your manpower needs. That expansion in your manpower capabilities is not one open to us.

And yet we see a lot of these things coming to us. Do you have any advice in that regard?

Some of our obligations are, in fact,

statutory in nature and so it's not open to a prioritization.

MR. REYES: Yeah, I think, and as for the reason I emphasize the '08 dilemma. There's a period of time forthcoming, in front of both groups, starting now and I don't see it subsiding until, right now with information we have until 2010.

Then we are going to have maximize every process we have and every planning tool we have, because of the sheet workload. And I understand that there are some things that are mandatory.

MEMBER POWERS: I have reviewed three early site permits in the last three months. Each one of them seems to be something over 2,400 pages combined.

They are written in a fashion such that, especially, certainly the Licensee has a prescribed format, and he follows it judiciously. It is not, when conducive, to prompt review, it is conducive to breaking up to be reviewed by groups in individual specialties.

MR. ZIMMERMAN: Umm hmm.

MEMBER POWERS: On the other hand, the staff seems to parallel that so that one does not find quickly where the rough points and the difficulties are. Now I have chosen early site permits. They are

the least bad of the offenders. In fact, we have written to you and explicitly acknowledged that they write very, very nice safety evaluation reports in general.

So I err in bringing them up first as my example. But I have on the floor of my kitchen now, by my own measure, well over a yard of documents that seem to be fairly turgid and dense, to review and they lack the summary that the early site permit people have striven to provide.

And, quite frankly, many of these documents that you're talking about, particularly the license renewal and power uprate documents, will gravitate toward the routine.

And then unless you wish us to become a checkpoint, you might consider highlighting for us the areas that you would like to focus.

MR. REYES: I think this is good feedback for us because we definitely want to highlight those because that's where you can help us the most. And to the extent that our products can do that, we'll take that as a -

MEMBER POWERS: Well, you might want to look at the early site permits. I mean they've definitely tried, and quite frankly, I think they've

succeeded.

And maybe that would be helpful, so that we don't become a checkpoint.

MR. REYES: That's good feedback, I appreciate that.

CHAIRPERSON WALLIS: And going back to my earlier point about are we adding value? If we have a series of PWRs all over which look very similar, license renewal applications all look about the same.

And then you improve your process so you have to in GALL and so on, it's almost become a checkoff with GALL, where are we going to add value? We spent a lot of time, but are we really contributing particularly to anything.

MEMBER DENNING: Since we're talking about that, would like to ask a question and then make a request. I'm Chairman of the Plant Operations Subcommittee and we just went down to Browns Ferry to look at the plant and talk to the Licensee about their upcoming plans, which are, in my opinion, very aggressive.

And also to look at the preparatory work that they're doing to restart Unit 1. And on my tour of the plant, I was reminded of the days when we were building these plants. Browns Ferry Unit 1 is

undergoing a major construction project, and that plant, I think they're going to spend over two billion dollars on it.

They're replacing lots of pipe, lots of component, pieces of equipment, wiring and so forth, and are getting ready for a restart.

And, of course, our involvement, statutorily, will be in license renewal and extended power uprates, both of which require knowledge and experience in operating the plant.

And so now you've got a unit where you don't have experience with the equipment because it's new, a lot of it. You don't have experience with the materials, necessarily, because it's new.

And so that makes those reviews complicated. And we have to do those by statute. On the other hand, your already going through a restart process and a construction and inspection process.

And because of the complexity of the issues, at that plant, I think that the ACRS must be involved in the Restart Panel Report. I think we have to review that.

I think we have to follow the commodities that are being installed and the staff's methods of inspection, the tools that they're using, in order to,

for us to be able to do the other reviews.

And so I'd like to make that request right now, which is that we be apprized of the restart effort and the Restart Panel's Report prior to TVA restarting that unit.

And I think that will help us fulfill our responsibilities with regard to license renewal and power uprate. But I do think putting all that in one basket is a very complex undertaking for all of us.

MR. REYES: Yeah, I understand the feedback. I do have to question or maybe challenge is a better word, when you said before the unit starts up.

Because license renewal is not linked to the start up of the unit. So, I -

MEMBER SIEBER: Well, what I asked to do was to review the report prior to the start up. Not complete license renewal or uprate. All I'd want to do is review the report.

MR. REYES: Yeah, and I'm understanding that, but when you say prior to the start up of the unit, that link is the one that I'm raising a question with.

But we have no problem briefing you and making you apprized of the start up report and all

that.

MEMBER SIEBER: Right.

MR. REYES: I'm not ready to commit that we'll do that all before they pull the rods, because of the sequence.

MEMBER SIEBER: Well, right now you don't have a regulatory handle to keep them shut down, as I understand it.

MR. REYES: Correct.

MEMBER SIEBER: They shut down on their own volition.

MR. REYES: Yes.

MEMBER SIEBER: And they hold a valid license, if they satisfied their technical specifications, and safety limits. They could start up if they have informally agreed to ask permission.

MR. REYES: Yeah, correct.

MR. DYER: And we have to issue the tech specs to align with their systems.

MEMBER SIEBER: That's right.

MR. REYES: Correct.

MR. DYER: I mean if they have a really substantial licensing actions that are going to require prior to restart.

MR. REYES: Right.

MR. DYER: So there is a hook.

MR. REYES: Practically shouldn't be a problem. They also committed to have a Commission meeting where the Commission will review that. So practically shouldn't be a problem.

I'm just not ready to tell you today that prior to start of the unit. But we, we will be glad to share with you the -

MEMBER SIEBER: Yeah, and I understand that you may not be able to do, to make that kind of a commitment, but we do have an interest and as close as you could come to it, we would appreciate it.

MR. REYES: Yes. Yeah, we'll endeavor to support that, there's no issue with that.

MEMBER SIEBER: Okay.

MEMBER BONACA: Since we're talking about Browns Ferry, I mean you were talking about license renewal and the hope and expectation that it becomes much more routine in the application.

So that, you know, for us it's more, it's easier to go through the reviews. Browns Ferry is an example where this is not happening and we hope that we don't get many, because, again, it's been lumped together with, you know, Unit 1 is lumped together with Unit 2 and 3.

And so we're wrestling with this issue of operating experience, applicable from Unit 2 and 3 to Unit 1, when Unit 1 is up here and fully defined.

I mean this plant is not completed yet. There are decisions being made on a daily basis of what's being replaced, what's being refurbished, what materials?

And then we also know that the plant will never run up to 3,200 megawatt-thermal around, to almost 4,000 is going to be the highest power on the BWR, running there and using operating experience from Unit 2 and 3.

So I'm saying that by accepting these application at times, the way the Licensee has proposed, I think we are not, in fact, easing our burden.

I mean, it's, you know, we will be reviewing that license renewal in the short-term and it's challenging for the ACRS, I believe and think about how operating experience from Unit 2 and 3 will, in fact, fulfill the requirements of the rule.

MR. REYES: Yeah, we don't have any other unit, we're just in the same situation as Browns Ferry, so, it's kind of a unique situation and I agree with you that the particular way the Licensee packaged

this together, it's really been a tough review for all parties.

I wish they would have separated them, I think it would have made life a lot easier and going in pieces.

MEMBER BONACA: We, you know, as ACRS, we don't have a full staff to do the review. I mean we're trying to cover and do our statutory responsibility.

And it's, we're scratching our head on how to meet the challenge.

MR. REYES: Yeah, I, all this is good feedback for us, because we tried to convey that to the Licensees. We just had a meeting yesterday about a Licensee who wants to start in ESP, jump into CRL in the middle of it and pick up a design who is not fully certified.

And we tried to convey to them, this is a business decision you're making, you need to understand the degrees of freedom that you're providing in this review because it does add to the complexity and it does add potentially to a delay on what we can do, both organizations.

MR. DYER: Yeah, we've, I think we've laid out in working with ACRS and the Commission and for

new reactors and license renewal, a very well-script, you know, process that lends itself well to standardization.

But, based on the market needs, and that, and the industry has got a different script. And so we find ourselves reacting to that and I know we've had considerable discussions with TVA on Browns Ferry, as well as some of other license renewals that are combining power uprates and steam generator replacements and a number of, you know, complicated activities all at once.

MEMBER SIEBER: Right, that's right. Thank you.

CHAIRPERSON WALLIS: Any other members have points to make?

(No response.)

CHAIRPERSON WALLIS: Any of you gentlemen wish to say anything more?

MR. REYES: I hope the briefing was useful. I hope we covered the topics. I, personally, enjoyed the exchange. I do welcome the feedback and we do get your requests.

And perhaps we need to do it more frequently than once a year, but I don't want to add more work to my plate and yours, but I'll just leave

that an open offer that if you find such an exchange useful and all that, we'll be open to come here in shorter notice to dialogue with you.

MR. DYER: I think I was reflecting on Dr. Powers' comments, too. And one of the things that would facilitate it is making sure we have good communications.

And, you know, if there's a different strategy for piece-meal review or working its way up when you have a lighter schedule and your workload is, it might be facilitated.

CHAIRPERSON WALLIS: Well, I wanted to thank you. I think it has been very useful, helpful, frank meeting. I was thinking about you coming here from the other important work that you're doing and I was wondering whether I should thank you for taking on this extra task of coming here, or whether in fact this would be relaxation for you.

(Laughter.)

CHAIRPERSON WALLIS: Compared with all the other harder worth that you're doing somewhere else. Anyway, thank you very much for coming here and it's been a very, very good meeting.

(Whereupon, the proceedings in the above-entitled matter were concluded at 11:46 a.m.)

# CERTIFICATE

This is to certify that the attached proceedings before the United States Nuclear Regulatory Commission in the matter of:

Name of Proceeding: Advisory Committee on Reactor Safeguards 525th Meeting

Docket Number: n/a

Location: Rockville, MD

were held as herein appears, and that this is the original transcript thereof for the file of the United States Nuclear Regulatory Commission taken by me and, thereafter reduced to typewriting by me or under the direction of the court reporting company, and that the transcript is a true and accurate record of the foregoing proceedings.

William Click
Official Reporter
Neal R. Gross & Co., Inc.

# ACRS Meeting with EDO and Office Directors

Jim Dyer, Director
Office of Nuclear Reactor Regulation
September 9, 2005

## Overview

- License Renewal Program
- New Reactors
- Power Uprate Issues
- Fire Protection
- PWR Sump Performance

2

# License Renewal Program

- Renewal status
  - Approximately 50% of plants either received renewed licenses or are currently under review
- Guidance document updates
  - ACRS Full Committee Meeting: 9/9/05
  - Final version to be issued: 9/30/05
- Future reviews
  - Projected to receive approximately 6 applications per year for the next 4 - 5 years

3

# New Reactors

- ACRS review/support will be needed for the following:
  - Design certification: ESBWR and AP1000 Rulemaking
  - Early site permit reviews
    - Completed: North Anna (ACRS meeting held: 7/6/05)
    - Scheduled: Grand Gulf (ACRS meeting scheduled: 12/8/05) and Clinton (ACRS meeting scheduled: 3/9/06)
    - Submittal Planned: Southern Nuclear Operating Company (Summer 2006)
  - Infrastructure: 10 Part 52 Proposed Rule, update of infrastructure
- Combined licenses reviews are planned for:
  - FY 2007: Dominion
  - FY 2008: NuStart (2 applications), Duke, and Progress Energy
  - TBD: South Carolina Electric & Gas

4

# Power Uprates

- BWR steam dryer issues
  - Achieving resolution to steam dryer failures
  - Better understanding of steam dryer loadings with extended power uprate (EPU)
- New technical challenge
  - Accident/Transient analysis codes and methods issues
- Use of EPU Review Standard RS-001
- Power uprate review status
  - 12 PU applications under NRC review (7 are EPUs)
  - 20 PU applications in next 5 years (3 EPUs in FY 06)

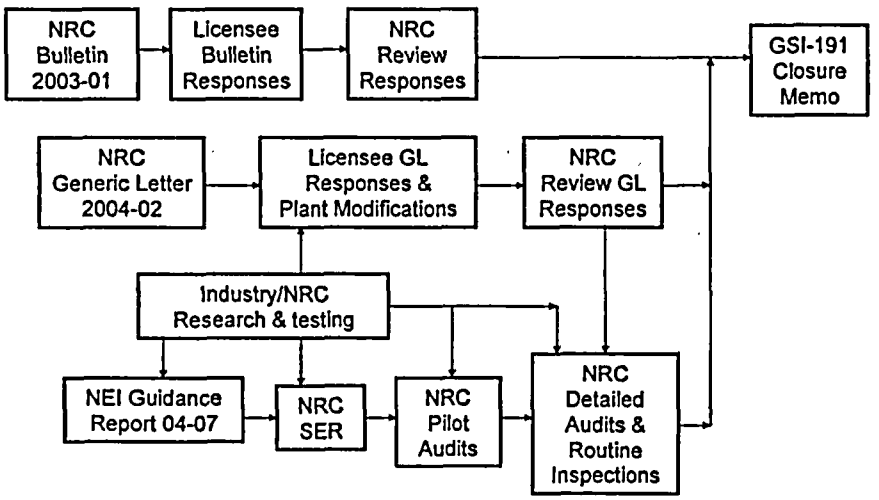
5

# Fire Protection

- Performance-Based Fire Protection Rule (NFPA 805)
  - ACRS Meeting on Draft Regulatory Guide: 10/05
- Circuit Issue Resolution
  - ACRS Meeting on Draft Generic Letter: 2/06
- Hemyc/MT Fire Barrier
  - ACRS Meeting on Draft Generic Letter: 12/05
- Manual Actions Rulemaking
  - Public Meeting on Issue Closeout: 9/05

6

# PWR Sump Performance (GSI-191)

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# PWR Sump Performance (GSI-191) Expected Schedule for Key Activities

- NRC Pilot Audits: 6/05 to 10/05
- Licensee GL Submittals: 9/1/05
- Research Test Activities: through 4/06
  - ACRS Subcommittee Meetings: 12/05 and 4/06
- NRC Audits/Inspections to be completed by 12/31/07
  - ACRS Subcommittee Meeting by Spring 2007
- Plant Modifications to be Completed by 12/31/07
- GSI-191 Closure: 6/30/08
  - ACRS Subcommittee Meeting: Winter 2008
  - ACRS Full Committee Meeting: Spring 2008

8

## Research Supporting GSI-191 Resolution

- NRC staff briefed ACRS subcommittee in July 2005
- Research is focused in four technical areas:
  - Chemical effects
  - Head loss
  - Downstream effects
  - Coating transport

9


## ACRS Meeting with EDO and Office Directors

Dr. Carl Paperiello, Director
Office of Nuclear Regulatory Research
September 9, 2005

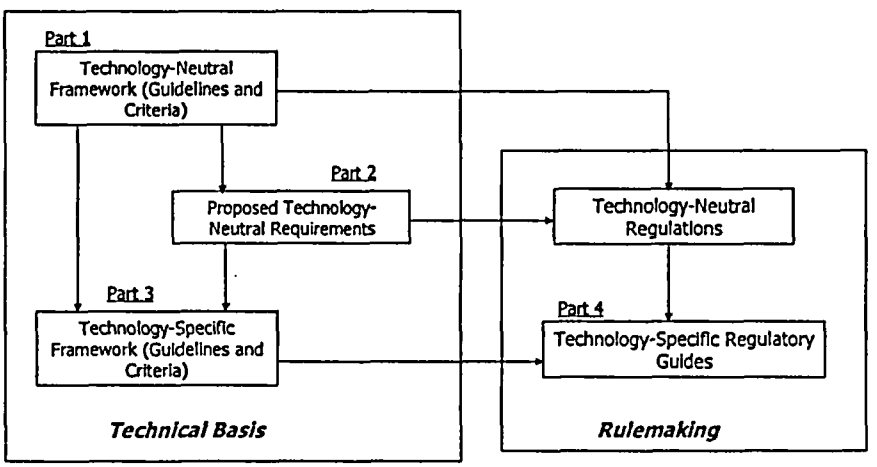
# Overview

- Technology Neutral Framework
- Other Expected Major Topics
- Review of NRC Research Program
- Assessment of Quality of Selected NRC Research Projects

11

# Regulatory Structure for Technology Neutral Framework (TNF)

(Focus of TNF is on reactor designs beyond those currently under review)

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## Regulatory Structure for Technology Neutral Framework

- Staff has focused on the technology neutral framework
  - Initiated efforts to start testing the criteria
  - Two policy issue currently under review (level of safety and integrated risk)
- Draft framework for public review and comment scheduled for June 2006
  - Discuss staff position with ACRS on policy and technical issues
- Staff initiating work on the other parts
  - Requirements, Framework, and Reg Guides

13

## Framework Issues to be Discussed with ACRS, Examples

- Probabilistic approach to establish plant licensing basis
- Defense in Depth (DID)
- Containment performance standards
- Emergency planning considerations
- PRA requirements
- Integration of security into the design

14

# Other Major Topics

- I & C Research Plan and Results
- Regulatory Guides
- Generic Issues
  - GI 80, Pipe Break Effects on CRDM
  - GI 86, Heavy Loads
  - GI 93, BWR ECCS Suction
- Codes
  - Thermal Hydraulics
  - Severe Accidents
- Human Reliability Analysis
- Risk Informing Part 50
- PRA Standards and RG 1.200

15

# ACRS Meeting with EDO and Office Directors

Roy Zimmerman, Director
Office of Nuclear Security and Incident Response
September 9, 2005

## EP Initiatives

- Post 9/11 EP Rulemaking
- Post 9/11 EP Guidance Revisions
- New Reactors
  - Early Site Permit Reviews
  - Updated Guidance and Inspection Program
  - Standard Design Certification
  - Rulemaking for Part 50/52

17

## Thank you for your support!

18

# Proposed Revisions to Generic License Renewal Guidance Documents

Jerry Dozier
Amy Hull

Office of Nuclear Reactor Regulation (NRR)
Division of Regulatory Improvement Programs (DRIP)
License Renewal & Environmental Impacts Program
License Renewal Section B

Presented at the 525th ACRS Meeting
September 9, 2005

# Agenda and Introduction

- Schedule
- Focus on License Renewal Guidance (LRG) documents for safety review
  – per 10 CFR Part 54 *Requirements for Renewal of Operating Licenses for Nuclear Power Plants*
- Overview of selected significant changes since the last ACRS meeting (3/4/05)

# Revised LRG Documents

- NUREG-1800, Rev. 1, *Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants (SRP-LR)*
- NUREG-1801, Rev. 1, *Generic Aging Lessons Learned* (GALL) *Report*
- RG 1.188, Rev. 1, *Standard Format and Content for Applications to Renew Nuclear Power Plant Operating Licenses*

# New LRG Documents

- NUREG-1832, *Analysis of Public Comments on the Revised License Renewal Guidance Documents*
- NUREG-1833, *Technical Bases for Revision to the License Renewal Guidance Documents*

# Schedule: Looking Ahead

| Date | Activity |
|---|---|
| 9/13/2005 | CRGR meeting |
| 9/30/2005 | GALL, SRP-LR, RG 1.188, NUREG-1832 in ADAMS and on Website |
| 10/31/2005 | NUREG-1833 in ADAMS and on Website |
| 10/31/2005 | Official bound copies of GALL, SRP-LR, RG 1.188, NUREG-1832 available |
| 11/30/2005 | Official bound copies of NUREG-1833 |

# NUREG-1832, *Analysis of Public Comments*

- Appendix A - NEI Comments
- Appendix B - ACRS Comments
- Appendix C - Comments from the 3/02/05 workshop
- Appendix D - Public stakeholder comments
- Appendix E - Comparison of the AMR line-items from 1/05 GALL to 9/05 GALL

# Federal Register Notice Request

- Requested comments for changing aging management review (AMR) line-items from "plant-specific" to generic aging management programs (AMP)
- Our subsequent resolution included pointing to existing AMPs and in some cases developing new AMPs

# Rationale for New AMPs

- Provide generic program that can be credited in an AMR line-item
- Incorporate Interim Staff Guidance
- Provide an acceptable way to address an emerging issue

# New AMPs for Mechanical Systems

| | |
|---|---|
| XI.M11A | *Nickel-Alloy Penetration Nozzles Welded to the Upper Reactor Vessel Closure Heads of PWRs* |
| XI.M35 | *One-time Inspection of ASME Code Class 1 Small-Bore Piping* |
| XI.M36 | *External Surfaces Monitoring* |
| XI.M37 | *Flux Thimble Tube Inspection* |
| XI.M38 | *Inspection of Internal Surfaces in Miscellaneous Piping & Ducting Components* |
| XI.M39 | *Lubricating Oil Analysis* |

# New AMPs for Electrical Systems

XI.E4 *Metal-Enclosed Bus*

XI.E5 *Fuse Holders*

XI.E6 *Electrical Cable Connections Not Subject to 10 CFR 50.49 Environmental Qualification Requirements*

## Transparent Process

NRC: Schedule and Background For Guidance Updates - Microsoft Internet Explorer provided by USNRC

File Edit View Favorites Tools Help

Back Search Favorites Media

Address http://www.nrc.gov/reactors/operating/licensing/renewal/guidance/updated-guidance.ht

| Date | Description |
|---|---|
| 08/23/05 | Excel spreadsheet providing AMR line items in Draft (August Version) GALL Volume II |
| 08/15/05 | NRC staff has transmitted the following draft documents for ACRS Review:<br>• NUREG-1800, Rev. 1, Standard Review Plan for Review of License Renewal Applications for Nuclear Power Plants<br>• NUREG-1801, Rev. 1, Generic Aging Lessons Learned (GALL) Report<br>o Volume 1<br>o Volume 2<br>• NUREG-1832, Analysis of Public Comments on the Revised License Renewal Guidance Documents<br>• RG 1.188, Rev. 1, Regulatory Guide for Standard Format and Content for Applications to Renew Nuclear Power Plant Operating Licenses which endorses, NEI 95-10, Rev. 6, Industry Guidelines for Implementing the Requirements of 10 CRF Part 54 - The License Renewal Rule |
| 06/10/05 | Written comments on the License Renewal Guidance Documents<br>• Public<br>• NEI |
| 05/16/05 | Public Meeting to discuss Interim Staff Guidance and selected NEI comments on the License Renewal Guidance Update (5/16/05, 9:00-4:00, 01F16)<br>• Notice<br>• Meeting Summary |

Local Intranet

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# ACRS Issues

- NUREG-1833
  - Provides link for Interim Staff Guidance and revised documents (located in affected sections)
  - Traceability of GALL'01 AMR line-items (Appendix C)
- Clarify under what circumstances aging effects would be expected from halon/carbon dioxide in the fire suppression system
- Risk-Informed ISI

# RG 1.188, Rev.1, Endorses NEI 95-10, Rev.6

- NEI incorporated NRC comments on two previous exceptions to NEI 95-10, Rev 5:
  - Exposure duration criteria
  - Criteria for scoping of non-safety-related piping and supports

# Endnote

- The success of this update process is due to the efforts of numerous NRC staff, contractors, and stakeholders.
- The collection of interrelated documents reflect the staff's current position (based on technically rigorous and generically applicable precedents) and considers stakeholder comments and interactions.

# Conclusion

- The update was completed in about 14 months (initial contract June 2004)
- A process for continuing stakeholder dialogue and resolution is in place
- The new documents increase the efficiency, effectiveness, and consistency of the license renewal review