UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
OFFICE OF THE SECRETARY
***
BRIEFING ON RISK-INFORMED PART 50, OPTION 3
***
PUBLIC MEETING

Nuclear Regulatory Commission
One White Flint North
11555 Rockville Pike
Rockville, Maryland
Tuesday, June 20, 2000

The Commission met in open session, pursuant to notice, at 1:30 p.m., the Honorable RICHARD A. MESERVE, Chairman of the Commission, presiding.

COMMISSIONERS PRESENT:

RICHARD A. MESERVE, Chairman of the Commission
GRETA J. DICUS, Member of the Commission
NILS J. DIAZ, Member of the Commission
EDWARD McGAFFIGAN, JR., Member of the Commission
JEFFREY S. MERRIFIELD, Member of the Commission

STAFF AND PRESENTERS SEATED AT THE COMMISSION TABLE:
KAREN D. CYR, General Counsel
ANNETTE L. VIETTI-COOK, Secretary
MARY DROUIN, Section Chief, PRA Branch, RES
THOMAS KING, Director, Division of Risk,
Analysis & Applications, RES
WILLIAM TRAVERS, EDO
ASHOK THADANI, Director, RES
CYNTHIA CARPENTER, Chief, Generic Issues,
Environmental, Financial, and Rulemaking Branch, NRR
RALPH BEEDLE, Senior VP & CNO, Nuclear Generation, NEI
JAMES RICCIO, Public Citizen

P R O C E E D I N G S

[1:30 p.m.]

CHAIRMAN MESERVE: Good afternoon. On behalf of the Commission, I would like to welcome you to today's briefing concerning the NRC's efforts to risk-inform the technical bases of our reactor regulations. Of course, it is found in 10 CFR Part 50.

As I think everyone in the room probably knows, there have been a series of papers that the NRC staff has prepared for the Commission over the last several years dealing with the recommendations to the Commission concerning various options for risk-informing our regulations.

Earlier this year the Commission gave the staff the go ahead to proceed with a study on risk-informing the technical bases for our regulatory requirements for power reactors. This was Option 3 in a 1998 paper, and this is why there is a reference in the caption for this meeting that refers to Option 3.

About two months ago, the staff provided us with a status report on its Option 3 effort, including a draft document that established a framework, an analytical framework for carrying out the study. The staff is here to brief us today on its continuing work in this area. The staff has appropriately been seeking input from outside

stakeholders, so there will be a second panel in which we will hear from the Nuclear Energy Institute and Public Citizen.

As I think all of you know, the task of risk-informing our regulations is a high priority one for the Commission and we very much welcome the opportunity for the briefing.

Let me turn to my colleagues and see if anyone has an opening statement.

COMMISSIONER DICUS: If I could just very briefly, Mr. Chairman, due to the razzing I was getting in the back room about my drinking jar, for the record, for my fellow Commissioners, for the record, this is grape-flavored Gatorade. Thank you.

CHAIRMAN MESERVE: I believe in trust but verify.

[Laughter.]

COMMISSIONER DICUS: A clarification.

CHAIRMAN MESERVE: Dr. Travers, you may proceed.

DR. TRAVERS: Thank you very much. We are glad to be here this afternoon and give you a status report, Mr. Chairman, as you indicated on our efforts to develop some recommendations for potential risk-informed changes to the technical requirements in 10 CFR Part 50.

As you know, and have indicated, the work began late last year and is described in SECY-99-264. It was

formally approved, the approach was formally approved in the Commission's SRM to the staff of February 3rd, 2000. The work is being done under the principal leadership of the Office of Research with a lot of close coordination with the Office of Nuclear Reactor Regulation.

As you will hear today, progress has been made in developing and implementing an approach for the evaluation and prioritizing of work, and in evaluating an initial set of candidate requirements. This has involved extensive interactions with stakeholders, and has also resulted in a number of potential issues being identified which will require resolution. In fact, one of the main objectives of our briefing today is to ensure that the Commission is aware of these issues, including those that have been raised by stakeholders.

With me at the table today is Ashok Thadani, Director of the Office of Research; Mr. Tom King, who is the Director of Division of Risk Analysis and Applications in Research; Mary Drouin, who the Section Chief in the PRA Branch in Research; and Cindy Carpenter, who is the Cognizant Branch Chief in the Office of Nuclear Reactor Regulation. And what I would like to do now is turn the briefing over to Ashok Thadani.

MR. THADANI: Thank you, Bill. Good afternoon.

May I have viewgraph number 2, please?

The purpose of this briefing will be discuss the approach and the status of our activities under Option 3 to bring better safety focus to the regulation in 10 CFR Part 50. While we made significant progress in moving forward in our feasibility studies, there are a number of important issues that we do want to highlight, and some of these issues would likely require policy decisions by the Commission. We will also briefly describe our communication and interactions with our stakeholders.

May I have viewgraph number 3, please?

PRA techniques are very powerful. They allow integrated evaluation of design and operations and, thus, afford us better understanding of safety implications of

various transients and accidents, and, in particular, the interaction between hardware and humans. However, there remain limitations in methods and data, and, thus, uncertainties exist, as well as some gaps that preclude our ability to quantify some of the uncertainties.

It is important that we carefully consider these uncertainties and gaps in determining how we should maintain defense-in-depth consistent with our understanding of risk. Also, there are other issues that require considerable additional dialogue.

Let me briefly describe some of the key elements. The application of the safety goal subsidiary objectives of

core damage frequency and containment performance will result in requirements directed towards achieving the level of safety described in the safety goals. Defense-in-depth includes balancing prevention and mitigation, that is focusing on all barriers, cladding, reactor pressure boundary and containment.

In addition, we do need to consider the layer of defense-in-depth that relates to emergency planning should there be multiple barrier failures. For each barrier, PRAs can, in fact, provide very valuable insights in trying to understand the level of margins that one should attempt to maintain.

This approach that we are pursuing is what I call sort of a mixture of the rationalist and the structuralist approach that was described in the ACRS paper, but it is ensuring that the barriers are there, but using risk analysis to try and understand what level of margins one ought to maintain for each barrier.

So, notwithstanding the likely effectiveness of the emergency planning actions such as evacuation, we would propose that regulations not exclude consideration of scenarios which lead to significant releases due to containment failure. That is, major failures of containment at any time with damaged fuel would be an important component of the defense-in-depth philosophy.

I am making a point only because this relates to what is characterized as large early releases. There are scenarios where one can get significant releases with late containment failure as well.

And the next issue that is important is in terms of the role of the backfit rule and adequate protection, we do need to consider several aspects. If adequate protection is the sole basis for revising regulations, and we get a hint of that from a recent letter from NEI, then there are

some questions that come up that deserve careful thought.

One, how far do we go, since adequate protection basically means substantial compliance with existing regulations, how far would we go in terms of revising our regulations? Today we have regulations which are based on safety enhancements, dissipated transients without SCRAM, station blackout. These were developed and based on costs and benefits. If one were to revise regulations on the basis of adequate protection, what would we do about regulations which were developed as safety enhancements?

Now, our approach has not been to consider adequate protection only. As we said, we are utilizing the Commission's safety goal subsidiary objectives in defining how far we go. But this does then raise, with the approach that we are embarked on, there are still issues with that. For example, as you will hear later, that changes to 50.44,

which is combustible gas control regulation, would lead to some potential safety enhancements, as well as significant burden reduction.

Should the enhancements that we believe appropriate if one were to utilize the subsidiary objectives thinking, should they be based on cost benefit considerations without including the cost savings from significant reductions in requirements under the same regulation, 50.44?

Finally, in terms of the PRA quality, there are two issues that I would like to highlight. PRA quality should clearly depend on the application. There is no question that if one is applying probabilistic risk analyses to assess importance of a small change that only impacts a very small part of the plant, a sequence, let's say, it doesn't mean that the whole plant PRA has to have some high quality. However, PRA quality becomes indeed a critical element, in my view, when the changes in regulations cut across systems, structures and components. That is, one is no longer talking about maybe or two sequences, we are talking about hundreds and thousands of sequences which are impacted by changes to structures, systems and components.

Now, Option 2 will result in categorization of the structures, systems and components, and Option 3, as part of the effort, will consider whether any requirements are

necessary for the lowest safety significant category identified under Option 2. This clearly means that Options 2 and 3 should be consistent and based on high quality analyses because they do cut across the whole plant.

The second item on PRA quality which I believe is important, needs to be highlighted, is to make sure that

these studies do reflect whatever uncertainties there might be in these calculations. We need to understand the uncertainties to be, in fact, effective in developing the level of margins we are looking for, that is to better understand how to deal with the issue of defense-in-depth.

A high quality PRA is one that, in fact, fully displays these uncertainties as against what I call propagation of point analyses.

Now, next, Mary will go through some of the major activities we have had ongoing.

MS. DROUIN: May I have slide 4, please?

I am going to try and give you a brief overview of the scope and approach that we have taken on Option 3. In risk-informing Part 50, the emphasis has been on the individual technical requirements associated with each regulation. But the scope also includes related regulations and the supporting documents that are associated with it, the Regulatory Guides, the SRPs, Branch Technical Positions. The point being is that you cannot look at a regulation by

itself is isolation. Regulations are intricately tied to other regulations and their implementing documents, and you have to look at those in a holistic manner.

In developing our approach, we have developed a framework, and this framework has blended, we feel, the principles of Reg. Guide 1.174, such as defense-in-depth, with the cornerstones that were established in the safe nuclear plant operation from the oversight program, so that we are having consistency with our risk-informed regulatory activities. In this way, since the framework is focused and uses these reactor cornerstones, it integrates guidelines for both defense-in-depth and safety margins, and it integrates in both a qualitative and a quantitative fashion.

The framework guidelines particularly for the defense-in-depth has promoted a balance between prevention and mitigation, so we are considering both accident -- prevention of core damage and mitigation of the effects, and having a balance between those two concepts, not just focusing on one of them. And in looking at the safety margin, it recommends that best estimate calculations are performed with the margin as part of the acceptance criteria.

The framework also uses risk insights to generically address core damage prevention and containment performance, and, as Ashok related earlier, we are

considering both early and late failures. In this manner, when we look at the framework, we feel the framework is

risk-informed, it is not risk-based, and the quantitative risk insights are not the only input in the basis for identifying for risk alternatives. So, consequently, it blends and integrates the insights with traditional engineering practices.

As the risk-informed alternatives are developed, we are looking for opportunities to make them performance-based, and we will show you a few examples when we get to 50.44.

Last, when we take this framework, we are testing it. Our first test case, of course, is 50.44, but we are testing it against 50.46, the special treatment requirements and the PTS rule, pressurized thermal shock.

Can I have the next slide, please?

In looking at the work to date, there are numerous activities that are underway in Option 3. First, we have developed a framework that is risk-informing the regulations and their technical requirements. This framework was sent to the Commission in our April status report on Option 3. As part of the framework, we have developed criteria for initializing -- for initial screening and prioritization of the regulations. This is focused on whether the regulation dealt with accident prevention and mitigation, and, as a

result of this effort, 50.44 and 50.46 were identified as high priority regulations to undertake.

Part of this screening prioritization is looking at the anticipated operational occurrences, and these were not identified as a high priority. These particular events are routine, they commonly occur. Plants are generally designed against them and we are not proposing to make any changes to the acceptance criteria associated with these events, events such as, for example, loss of feedwater, your transients.

We have received a letter from NEI to the Commission back in January, and it indicated general agreement, you know, with our prioritization in terms of identifying 50.44 and 50.46 as top priority candidates.

We have undertaken 50.44 in detail. This particular regulation addressees the concern of combustible gases in containment and their ability to challenge containment integrity, and we plan to send alternatives, risk-informed alternatives to the regulation, to the Commission by the end of August.

We have initiated review of 50.46. This particular regulation provides the acceptance criteria for the emergency core cooling systems, and it is intricately tied to the large LOCA design basis accident. This one is much more complex than 50.44. We got into 50.44 and saw the

complexity with it, and nothing compared to when we get to 50.46.

In regards to our work on special treatment requirements, we are going through the requirements, we are identifying places where we can potentially combine and simplify these requirements. Right now we are in the very early stages of this particular effort.

In looking at the results from the PRAs, we are also trying to identify where there may be potential holes in the regulations. So, we are looking at the results from the PRA and we are identifying risk-significant concerns that are not covered by the current regulations, and, therefore, identifying if there are any potential safety enhancements that may be warranted. And I will give you an example of one that we have identified with 50.44.

We are closely coordinated with Option 2. The two biggest common issues, again, is the PRA quality and the safety categorization with structures, systems and components.

Lastly, we have an ongoing parallel effort in risk-informing the pressurized thermal shock rule. The framework is also being applied to this effort, and the Commission should be receiving a paper on this work in the very near future.

Can I have the next slide, please?

In looking at 50.44, again, 50.44 is our first test case in risk-informing a Part 50 regulation. In applying the framework and developing risk-informed alternatives, we have taken two approaches, and this two approach concept is the same thing we will be doing on 50.46 in other regulations.

First, what we do is we look at the current requirements in the regulation, and then, using risk insights, we are determining if these are the most effective requirements in addressing the concern, determining if these requirements need to modified, if they need to be eliminated, or perhaps even be enhanced. So, we start with the actual requirements in the regulation.

The second part of the approach is we start with a fresh look and determine if there are alternatives to address the concern, and this comes, looking as if we had no regulation, starting with a fresh piece of paper, and if we were going to write a risk-informed rule from scratch.

Either approach is very complex, and this complexity comes back to the point that you can't just look at a regulation in isolation. There are numerous related

regulations and implementing documents, and sometimes it is in these where you start imposing other requirements. And I will try and give you some examples as I through 50.44.

As we start with 50.44, and if you start at a very high level, there are six basic requirements associated with 50.44. The first, measuring hydrogen concentration, that is the actual requirement. Ensuring a mixed atmosphere. Controlling combustible gases after a LOCA, this is the recombiners. Inerting your Mark I and Mark II containments; having high point vents; and having hydrogen control systems for Mark IIIs and ice condensers, the igniters, to address your 75 percent metal-water reaction.

However, I can't just stop at that point, because if you look at, for example, how these requirements have been implemented and been met by the licensees, it is not quite so simple. And if I just look, for example, at the requirement of measuring hydrogen concentration, in meeting this requirement, licensees have installed safety grade continuous monitors. 50.44 does not say install safety grade continuous monitors. And you get to that requirement because of associated regulations and because of the implementing documents. So, when you go back again to risk-informed, you have to look at this, I call it the iceberg, and you have to look below the surface.

So, in developing the alternatives for 50.44, we are trying to use the most current research regarding hydrogen and hydrogen combustion. We plan on performing calculations to develop a more realistic hydrogen source term, and we are looking at risk insights to help us identify where the risk concerns are associated.

And on the slide, I have listed some examples of the technical considerations being examined. For example, we are considering eliminating the need for the safety classification of the hydrogen monitoring, eliminating the need for requirement for recombiners, but also requiring that the hydrogen control systems for the Mark IIIs and the ice condensers be operable during station blackout. PRAs and current research has identified this as a place of risk concern not currently covered by the regulation.

So I have given you kind of a very quick overview of 50.44. To get into the details would probably take a whole day, but just to give you a feel for the complexity of the process.

If I can go to the next slide.

In looking at the stakeholder interactions, we have implemented several different activities to ensure that we have stakeholder interaction. In fact, we have the

February SRM from the Commission asking us to facilitate greater stakeholder involvement, and we hope that we have met request.

To date, we have held two major public workshops. They are well attended by the public. We had one last fall where we presented our plan and our approach, and we had another one this past February where we presented our

framework and preliminary thoughts on 50.44. We plan to have another public workshop later on this year.

We have also held several public meetings. We had some in March and again in May of this year, and these have addressed the framework, 50.44 and 50.46, and these also have been well attended, and we have several more public meetings scheduled throughout the remaining of the year.

We have also created a website. On this website we place all our information. The website is also interactive, it allows the public to offer us comments. They can ask questions via the website. In addition, everything that we do place on the website, we put into the public document room, and we notice it for those people who do not have access to the Internet or don't have computers.

We have also received feedback from stakeholders. This feedback has included which regulations to risk-inform, comments on framework and overall general comments on the whole risk-informed regulatory process.

We have had several meetings with the ACRS. We presented our framework and we are scheduled to meet with them in detail next week just on 50.44.

And at this point I will turn it over to Mr. King.

MR. KING: All right. Thanks, Mary.

To complete the briefing, I want to talk about two things, one, where are we going from here? And, two, what

are some of the potential issues coming down the road that the Commission is likely to be faced with?

If I could have slide 8, please?

Slide 8 briefly summarizes our future plans over the rest of this calendar year. What we are talking about, what you have heard Mary talk about, is work in progress. So, there are still activities underway in all of the areas, and the reports you get later this year will reflect an evolution or refinements that take place between now and then.

What we are doing in completing our work on 50.44 and beginning on 50.46 and the pressurized thermal shock rule is we are using that feedback to help refine the framework document. We expect to finish our feasibility

evaluation of 50.44 and provide recommendations to the Commission in August, as Mary had mentioned, but, also, in that paper, we would expect to include any policy issues associated with 50.44 and the framework in general, as well as provide a revised framework document that reflects this refinement that is taking place.

We are going to continue our work on the ECCS rule, 50.46. We plan a workshop in September of this year to discuss where we stand on that. I do want to note that we have been working closely with the owners groups, particularly which is led by Westinghouse owners group.

They have been taking the initiative to look at 50.46 on their own, providing us with useful information. We have had several meetings with them. It has been a very cooperative, very productive effort, and I did want to make sure you are aware of that.

We owe another report to the Commission in December of this year, and that will include recommended priorities and schedule for any remaining evaluations.

Now, let me make a couple of important points about these activities this year. One, the recommendations that you are going to receive are going to address the feasibility of the proposed changes. They are not going to be a proposed rule, it is not going to be rulemaking plan. If the recommendations are approved by the Commission, then we would proceed into the next step of actually developing a rulemaking plan and proposed rule and regulatory analysis that goes along with that.

As Mary mentioned, based upon our experience so far, it takes a substantial amount of effort to track down all the interrelationships between the rules. She talked about 50.44, and we have to go down into the Reg. Guides and the Standard Review Plans. The interrelationships on 50.46 are even more extensive and are going to require more coordination and integration than has taken place on 50.44.

Therefore, the December report will likely not be

a complete effort on 50.46 and will likely be a partial report on where we stand on that particular rulemaking. Also, as Mary mentioned, the pressurized thermal shock rule work is proceeding in parallel. We would -- right now are scheduled late in 2001 to provide the Commission a recommendation on that. And we are also developing communications plans, in general, for the whole risk-informed regulation activity, but included in that will be our communications plans for dealing with the Option 3 effort. And we owe the Commission our next update of the risk-informed regulation implementation plan in October, and

we would expect to have the communications plan piece, at least the draft of that, in that next update.

If I could have slide 9, please.

On the final slide, we wanted to take the opportunity to provide early identification of issues that may be coming before the Commission as part of the Option 3 effort. This slide lists them as policy and technical, but I think, clearly, the technical issues may also have elements of a policy nature and may need Commission attention as well. And I would expect all or most of these to be discussed in our August paper.

What I want to do is briefly summarize the questions related to each of the issues, recognizing that the issues are still being refined in preparation for the

August paper. Let me start with the first two under policy, selective implementation and role of the backfit rule, and I will talk about these together because they are interrelated.

A ground rule for all the risk-informed activities has been that the alternatives developed would be voluntary on the industry. The industry could decide whether they want to go with a risk-informed alternative or stay with what they have today.

Selective implementation refers to how much flexibility should be allowed for licensees to voluntarily pick and choose among the risk-informed alternatives. This issue is discussed in SECY-98-300, the original SECY paper that proposed Options 2 and 3. And at that time the Commission said it was premature to address that issue until actual rulemakings had been proposed and stakeholder comments had been received.

However, I think we are at a point where we are intending to do a preliminary test of our recommendations against the backfit rule. We have to get into certain aspects of the selective implementation issue. Namely, should all the proposed changes within a rule be considered as a package, or should they be considered individually?

This approach will affect the outcome of the backfit analysis, but could also define how much flexibility

licensees could have to select alternatives within rules or can they just select the rule as an entire package. In addition to the above, two additional considerations are related to the backfit issue. One, do all alternatives have to pass the backfit test? And, two, should backfit considerations include future plants, or should it be limited just to the current fleet of operating plants?

The third issue under policy, which we call application of risk-informed guidelines, Ashok talked on that issue in his discussion on slide 3, but it basically boils down to we are using the safety goal subsidiary objectives in laying out the risk-informed guidelines that we are applying. This means that as we go through and develop proposed alternatives or proposed changes for the Commission, these are directed toward achieving a level of safety defined in the safety goal policy, and will involve safety enhancements as well as reductions of unnecessary burden.

Technical issues, Ashok again talked about the long-term containment performance issue. We believe even though that is not tied to large early release frequency, which has been a measure that has been used previously in risk-informed regulation, we do believe it is important. Containment integrity is important in the long-term for things like protection of on-site personnel.

We also are developing guidelines for defense-in-depth and safety margins. Defense-in-depth includes, as Ashok mentioned, a structuralist and a rationalist combination. It involves prevention and mitigation. We have assigned some risk guidelines to help define what level of prevention and mitigation we expect. And we are also working on other issues related to defense-in-depth like what is the role of the single failure criteria anymore and failures of passive components, which has been a longstanding open item in Appendix A of 10 CFR 50.

Safety margins, we are taking an approach where we could expect to use best estimate analysis with the margin in the acceptance criteria and for treating uncertainties. and then risk guidelines themselves which are being applied to the framework.

And, as I said, all or most of these, we would expect to address in our August paper. With that, I will conclude the presentation.

CHAIRMAN MESERVE: Thank you very much.

Let me turn to my colleagues for questions. Commissioner Diaz.

COMMISSIONER DIAZ: Thank you, Mr. Chairman. I am pleased to see that the staff has confirmed their early suspicions that every rule is tied to practically every

other rule. And I am glad that your previous statements have been confirmed, not surprisingly.

I believe that what Mr. King finally said, I think it comes down to the bottom line, and I am just going to

make a quick point. I think these issues are all being put together. I think to me it is almost premature to start making comments or making commitments to it. And I really look forward to seeing the staff providing us additional information on all of these issues in a more specific and more in-depth fashion. And, therefore, I release you and I have no questions.

CHAIRMAN MESERVE: Commissioner McGaffigan.

COMMISSIONER McGAFFIGAN: I see Cindy Carpenter here, and she hasn't had a chance to talk, so I guess I will give her a chance. One of the points that the industry is going to make later is that they want to see progress on the South Texas project, the Option 2 work there.

MS. CARPENTER: Right.

COMMISSIONER McGAFFIGAN: And I know you reported in the press recently as to what the schedule was there. Could you just update as to what you think the schedule is for considering the South Texas project?

MS. CARPENTER: The staff is still looking at the schedule for South Texas, as well as the schedule for Option 2, which is risk-informing the special treatment

requirements. We know that South Texas is in today and tomorrow and the staff is meeting with them and going over details, but we are still looking at the schedule, looking at various options, what needs to be done to proceed both with South Texas and with rulemaking. And so, right now, we will be getting back with the Commission. We do owe an update to the Chairman's tasking memo, but there is no update right at the moment on the schedule.

COMMISSIONER McGAFFIGAN: It is well into 2001, though, based on what you said publicly.

MS. CARPENTER: Well, what I said was in 2001, right. That is what it is looking like right now, but the staff is looking at the schedule. And there are options for us to consider.

COMMISSIONER McGAFFIGAN: There are options that would advance it compared to there, or delay it further?

MS. CARPENTER: There are options. The staff is just looking at the schedule right now.

COMMISSIONER McGAFFIGAN: Okay. You would make a heck of a Congressional witness, I will tell you that.

[Laughter.]

COMMISSIONER McGAFFIGAN: This is more an Option 2 question than an Option 3 question, but implied in some of the testimony we had earlier this year from NEI was that we would be unlikely to see additional candidates for pilot

plants until we made some progress there. Is that still what you are hearing?

MS. CARPENTER: Right now the boiling water reactors owners group, and the Westinghouse owners group, and the CE owners group have indicated that they are interested in pilots, and we have a meeting with them next week, and we will be talking to them more about the pilot activity. But the owners groups are expressing interest in what the staff is doing.

COMMISSIONER McGAFFIGAN: Mr. Thadani, there was an article in one of the trade publications, I forget which, recently that had to do with the fact that we were looking, I guess this is a 50.46 issue, we were looking at something other than large break LOCA double-guillotine break and all of that as the basis for design basis accidents. And it was probably the workshop or the public meeting that the staff held that provoked the article. But I thought the article conveyed a misunderstanding of what we were about here.

If that analysis doesn't really, the traditional deterministic analysis doesn't really get at safety issues, and if we have 25 years now of data from WASH-1400 and everything thereafter, that is -- we need to think about other scenarios. I forget how the article characterized it, but it said we were going to now accept, you know, core damage. So, would you like to try to set the record

straight? Tom King would be happy to help.

MR. KING: I will be happy to help.

COMMISSIONER McGAFFIGAN: Well, why don't you go ahead.

MR. KING: This was a meeting between our staff and the Westinghouse owners group who are spearheading their industry side effort on 50.46. And what was presented were some things that need to be looked at when you risk-informing 50.46. This was presented by one of our contractors, and they talked about, well, you know, one avenue is to look at the large break LOCA. Should we, based upon risk considerations, redefine it? Another was to look at the analysis methods and assumptions. Are there unnecessary conservatisms? That is another way to approach it.

Another avenue of approach was to look at the acceptance criteria, and that is where it got into this issue of, if we redefine the acceptance criteria, that might lead to accepting a little more core degradation, but it did not say we were going to accept core melts. They were thinking of things like maybe a little more core oxidation, a little higher cladding temperature, that kind of thing. I think it got mischaracterized somewhere along the line.

But, no, we are not considering accepting core melts.

COMMISSIONER McGAFFIGAN: In one of three options

for thinking about how you are going to approach 50.46, you got into that discussion. I think, you know, and I will let Mr. Thadani go ahead, but I think it shows the perils. We are dealing with very complex, very fundamental issues in risk-informing Part 50, and there is a terrible danger of misunderstanding what we are about and, also, since it is very complex, you know, reducing it to a bumper sticker, because you don't want to deal with the complexity.

MR. THADANI: Yeah, I would like to add, we are not going to walk away from the fundamental issue of maintaining core-coolable geometry. Make sure that that has got to be satisfied. As Tom said, and Mary said, these are pretty complex issues.

Now, then you have to go back to not just risk analysis tools, I am talking more fundamentals, which success/failure criteria, that go into risk analysis tools. Thermal hydraulic analyses, trying to make sure we understand correlations that are utilized in these calculations. We know more now.

So, again, I think where Tom is coming from is that we are going to be looking at the technical information base that has come out of experience and research, and we have better analytical tools now to see what are some of the better criteria one can apply. But the objective still would be to maintain coolable geometry in the end. So,

there has been misunderstanding of this.

COMMISSIONER McGAFFIGAN: My last comment, if there is somebody from GAO in the audience, we had this conversation with GAO directly, I think at the last meeting, the woman who represented GAO at that time, I think it was March. And I made the point, you guys don't have to comment on it, that we are really inventing something here, and the sort of -- some of the stuff that we have gotten previously, but inventing on a schedule, and being able to plan for the third quarter of 2003, which rule we will be working on and what the change will be is preposterous given how much we really are at the first stages of trying to invent something.

Now, the hydrogen combustion, 50.44 is going to be easier than 50.46. We are able to determine that much, but not much more at the current time.e So that is just a plug for allowing the staff the time and the stakeholders the time to do what they need to do.

CHAIRMAN MESERVE: Commissioner Merrifield.

COMMISSIONER MERRIFIELD: Thank you, Mr. Chairman. I guess I should start off by saying I agree with Commissioner McGaffigan on his last point.

In SECY-00-86, the staff stated that during the workshop that we had in February of 2000, there was general agreement among stakeholders on the approach and guidelines

relative to the framework. Here we are a few months later and it seems evidently clear from Mr. Beedle's slides, let alone Mr. Riccio's slides, that there is not agreement on a framework.

Obviously, we are spending a great deal of resources on this effort. As was stated, we should spend the time doing it. But it concerns me that there seems to be a significant gap between ourselves and some of our stakeholders at a relatively early point in the process. And so, my questions are, were you aware of this gap or did you have any inklings of this gap when you provided the SECY to the Commission in April? And how did we get to where we are today relative to our perceptions versus those who will be on the second panel?

MR. KING: Let me take -- attempt to answer that. The words that were in the SECY-00-86 were actually put up on the viewgraph machine at the end of the workshop in February, because we did want to try and get some consensus that, you know, are we characterizing the results of the workshop properly?

You know, there were some issues with the framework that were raised, that is why we put the word "general" in. But I think, in general, you know, the approach to have a defense-in-depth and use risk criteria to try and quantify that was generally accepted.

We did receive letters later on in April from NEI, one from Mr. Christie, Bob Christie, later on, I can't remember the date, that maybe reflects some additional thinking and, also, some additional, as you get into some -- applying this in some specific cases, you maybe run into some issues that raise concerns, like the late containment failure issue. I don't remember that being really an issue that anybody seemed to be concerned about at the workshop, but maybe after people went home and thought about it, and saw how it was applied in the context of 50.44, maybe it raised a flag. So, I think there is some evolution to this process as well. But, you know, that is where I think it stands.

COMMISSIONER MERRIFIELD: Okay. While we are on it, again, going to what we will hear on the second panel, one of the comments that NEI has is an assertion that our

approach that we are taking here is more risk-based than risk-informed, and that risk quantification should not be the sole basis for our regulation. Any comments on that?

MR. THADANI: We would completely agree that our approach should not be risk-based and it should be risk-informed. In fact, I believe that is the path we are on. What that -- when I saw that particular chart, what it tells me is we really need to sit down and make sure we are really understanding, the two sides understand what is being

debated in this framework. And maybe there is language in the framework that needs attention and needs to be better, parts maybe perhaps need to be better characterized. And that is why we said in the paper to the Commission that this framework represents work in progress, and it is anticipated that it may change as it is further evaluated and trial implementation proceeds.

In my view, trial implementation is the key to see how far we are applying risk insights, how far we are applying the bottom line estimates that are coming out of these analyses. My own view is the path we are on is risk-informed. I think the alternative, the technical is more mature enough to just depend on it solely.

COMMISSIONER MERRIFIELD: The next one is on page 5 of 00-86, it relates to a clarification that the staff would like to receive from the Commission relative to the backfit rule. I read that one paragraph talking about packaging regulatory requirements with regulatory relaxations, and it troubled me a little bit. And I am wondering what are you intending out of the Commission in reference to that particular paragraph?

MR. KING: Well, that is the issue I tried to talk about on my last slide, and it has to do with 50.44, for an example. When we went through and looked at where the risk-information suggested we should make changes to it,

there were some things that would fall on the unnecessary regulatory burden category and there was one thing that we thought a safety enhancement was justified.

Do we look at those individually, one-by-one, using the backfit rule, and do we let licensees pick those one-by-one? That is the selective implementation part. Or do we package that together and say, okay, we are risk-informing 50.44 as a rule? And there are some ups and downs in that package. In total, do they come out to pass the backfit test, or do they not come out to pass the backfit test?

COMMISSIONER MERRIFIELD: But you are not trying

to leave us with the impression that we found all of these things that are burden release, and, therefore, we have -- we can slip in some additional requirements? That is not the tradeoff you are talking about?

MR. KING: No, no. If they were all burden relief, it would be all burden relief. And if we find a mixture, we find a mixture.

DR. TRAVERS: So you aggregate.

MR. THADANI: I think that is the issue, how do you put it together?

COMMISSIONER MERRIFIELD: Okay. We have spent a lot of time on that in the fitness for duty rule, so I guess, as a Commission, we will have to carefully weigh

that.

One last question, I know that the owners group are working on improving their own PRA quality, and I am wondering if you could briefly talk about any interaction you have had on that effort. If you have had any interaction on that effort.

MR. KING: We had received, under the Option 2 work, a submittal from NEI. It really represented a document describing the owners groups' PRA certification process. Mr. Collins sent a letter back to NEI saying, yes, we will review that, and had some comments on the scope of our review. We are just now trying to, in conjunction with NRR, put together a schedule and a review plan for doing that. That is really where it stands. We haven't really gotten into the review. We haven't had any meetings with NEI on the technical substance at this point, but our intent is to review it.

Maybe Cindy wants to -- it is an NRR lead at this point in terms of, since it was submitted under Option 2, for the formal interaction with NEI. But the two offices are working together on it. I don't know, Cindy, if you want to add to that.

MS. CARPENTER: No, that is about it.

COMMISSIONER MERRIFIELD: Thank you, Mr. Chairman.

MS. DROUIN: The other thing, though, that I would

also add is that ASME expects to go out any day now for public review and comment of their Level 1, Level 2 PRA standard and ANS plans to go out in mid-July on their external event standard for PRA, so that should be coming to the staff for review and comment.

CHAIRMAN MESERVE: Your slide 9 you raise as one of the potential implementation issues is treatment of long-term containment performance. And I notice that that was an issue that was flagged on the NEI slides as a concern

that was perhaps representing a radical departure from what we have done in the past. And it is certainly the case, and we have talked about this in the probabilistic sense before, we have talked about core damage frequencies and large early release frequency, not talking about late release. I presume that is based on the assumption if it is late, then the emergency plans have had an opportunity to kick in and minimize the risks.

Where are you headed on this, and why has it provoked the reaction that it has?

MR. THADANI: Well, the direction we are headed towards is to include assessment of potential for late major failure of containment, late in an accident. And that is the potential for fairly -- still significant releases. That is -- there is, I would expect, very good likelihood that appropriate emergency plans would be initiated,

evacuation, if necessary, would be carried out. But in the context of defense-in-depth, we felt that the emergency planning considerations were intended to not be mixed with design considerations, that that was a layer of defense-in-depth that the Commission was looking for.

If you go back to the history of the development of emergency plans, that is what one would find, and we thought we ought to be consistent with that, and we ought not to ignore potential for substantial releases as part of risk-informing the regulations.

I think this is an example of something that has come up later in the dialogue that we have had with the other stakeholders. And so, I imagine that there are concerns and we would need -- we need to lay out what the sequences are. We need to make sure we have technical information on the table, and people need to understand what sort of consequences we are talking about. That is the path we are on.

CHAIRMAN MESERVE: Is this an issue that arises with 50.44, that there may be some additional requirements that relate to late containment failure?

MR. THADANI: I would not think that that is a big issue.

MR. KING: It did come up in the context of going thought 50.44, a long-term hydrogen control issue, and

should there be a requirement on containment performance.

And I'd like to just add one other thing to what Ashok said. If you look at the reactor cornerstones, there are seven of them.

Our framework deals with the first four, but

there's also one on protection of workers. I forget the exact wording.

But to me, an issue an issue of long-term containment performance is maybe not so much the people offsite, the public, because they can be evacuated, but you've got people onsite that are trying to recover from the accident, and you need to protect them as well.

To me, this issue is tied to that, as well as the things Ashok said.

MR. TRAVERS: Protection of the environment as well.

CHAIRMAN MESERVE: I'm not denying that's an issue, and this is -- your inclusion of this statement in the slide has provoked a reaction, and we're going to hear about it. I'm just trying to sort out where you are, and maybe it's an overreaction. I don't know.

Maybe this is something that we'll see as we get further down the road, and see in concrete terms, exactly what the implications are of the work you're doing.

The related point is that there is, as I read the

paper attached to SECY 0086, there is -- of course, they take the safety objectives and peel off of them, various requirements.

One of the things that has provoked a comment by NEI is that the safety goals and objectives are sort of fleet averages, and they characterize the quantitative elements as ones that are -- it's a radical departure to apply them on an individual plant basis.

Then you have various risk criteria for containment and for core damage that you use and describe in that attached paper. Is that a radical departure, and how do you respond to the claim?

MR. THADANI: Let me give you my views: I don't believe it's a radical departure. I do want to make a comment that the framework paper needs a fair amount of work.

It has different chapters; it lays out some numerical criteria, which I think can mislead people to say we're being risk-based.

These different chapters need to get integrated. We talk about uncertainties in a different chapter.

And I think we need to work at it. It's a pretty difficult issue.

In terms of plant-specific applications, since the policy statement of 1995, we've made decisions on a

plant-specific basis using these guidelines in many, many cases.

So it's not a radical departure. It's been carefully thought through and the Commission has spoken on this issue.

MR. KING: This is an issue that was raised to the Commission back at the time we put Reg Guide 1174 together as a policy issue and the Commission approved applying those subsidiary objectives on a plant-specific basis.

CHAIRMAN MESERVE: This is really to pick up on a point that Commissioner Diaz made about seeing that all of these regulations are integrated together. I have noticed that it's expanded in the paper attached, framework paper.

All of a sudden, Part 100 is now wheeled out as being an additional element. Are we going to end up looking at all of Title X in this process, or where's the end point?

MR. KING: Good question. I don't expect us looking at all of Title X, but there may be some connections to regulations outside of Part 50, like Part 100. I can't give you a complete list today.

CHAIRMAN MESERVE: Okay. Commissioner Dicus?

COMMISSIONER DICUS: It's clear that .44 and .46 were identified rather early on by a variety of methods as candidates to look at first, the public meetings, what work the Staff did, together with the January letter from NEI.

But in the framework appendix, there is a listing of the Part 51s that have been identified. At least I think you called it your first course analysis, and I think three or four regulations in Part 100.

What is unclear to me is, did you use the framework, this draft document that we have attached to the paper, to do that analysis, to identify possible candidates?

MS. DROVIN: Yes.

COMMISSIONER DICUS: Yes, you did. You used this --

MS. DROVIN: The principles of the framework, you know, is considering accident prevention and mitigation. So, it was using those two principles and going through Part 50 to do the core screening. And the framework is centered around those two things.

COMMISSIONER DICUS: Okay. And we all agree -- I mean, you've said, and it's obvious that this framework is a draft document, clearly stamped draft, and that it's a work-in-progress, and that you will probably be doing modifications to it, et cetera.

If you did that, would you go back and take another look at the candidate regs to see if they still --

MS. DROVIN: If the changes where that fundamental, absolutely.

COMMISSIONER DICUS: But there is uncertainty that

they would be that fundamental?

MS. DROVIN: I'm sorry?

COMMISSIONER DICUS: It's uncertain that it would be that fundamental?

MS. DROVIN: It's uncertain, and I personally will be surprised if it's a rewrite of the whole framework. I think it's more clarification.

COMMISSIONER DICUS: Okay. This follows off of Commissioner McGaffigan's comment about being able to manage the workload you may have in front of you. I know that you have some initial prioritization of which regs you might look at first and take them through.

But still -- and this may be a little early to bring this subject up, but still you have the possibility that you wind up with several rulemakings at one time, which becomes extremely resource-intensive, and this is just a caution to be concerned about that when you do start prioritizing.

I think Commissioner Merrifield agreed with the comment that Commissioner McGaffigan had made with resources and getting the workload. I would just like to follow in on that and say that this could be a real issue as we get down the road.

MS. DROVIN: Yes.

COMMISSIONER DICUS: Thank you.

CHAIRMAN MESERVE: Thank you very much. We very much appreciate the effort. We have a second panel that will be appearing as well, as I indicated at the outset.

There are two individuals who will be speaking to us, Mr. James Riccio from Public Citizen, and Mr. Ralph Beedle, who is Sr. Vice President for the Nuclear Energy Institute.

Welcome.

MR. RICCIO: Thank you.

CHAIRMAN MESERVE: Mr. Riccio, why don't you proceed?

MR. RICCIO: First of all I want to apologize for getting my comments to you late. I have been extremely busy with issues up at Indian Point.

I want to thank the Commission for the opportunity to present our views on risk-informing Part 50, or as we like to refer to it, the deregulation of nuclear safety standards.

As you well know by now from our previous stakeholder meetings and things of that sort, Public Citizen is philosophically opposed to risk-informed regulation.

This deregulatory effort has come about, not because of any new risk insights, but because the industry has come to the realization that given the new competitive environment, they cannot compete if forced to comply with the regulations that

exist on the books.

Basically, as far we're concerned, risk-informed regulation means that the public will be exposed to greater risks, while the industry is exposed to less regulation.

And this is not the beginning of this effort. We have already seen this where basically margins have been whittled away, beginning in the early with the requirements for marginal safety, cost-beneficial licensing actions, enforcement discretions that have been used to allow restarts and prevent shutdowns, and the new improved technical specifications which reduce limiting conditions of operation by over 40 percent or approximately 40 percent.

Now, as far as we're concerned, NEI and the industry have turned their sights on the heart of regulation contained in 10 CFR Part 50. However, at the outset, it's important to know why this initiative is voluntary.

Basically, it can't be justified under the rubric of regulations that you've already established. Basically, you couldn't meet the backfit rule on this regulation or this proposed regulatory change, because there is no commensurate safety benefit to the deregulatory effort that's underway.

According to former Chairman Jackson, risk-informed regulation was supposed to be a double-edged sword. Now, I'm encouraged to hear Mary say that they have

actually found some things that make up both ways, where you have risk insights that may actually lead to better regulation of this industry.

The only problem is, if you try to impose these regulations on the industry, it's going to have to go through the backfit rule. Why is it that when you want to reduce regulations, it doesn't have to meet any standard whatsoever, but when you want to increase regulation on this industry, it's going to have meet the rigors of a cost/benefit analysis?

I understand that that is one of the issues that has been brought to the Staff's attention, and I appreciate that they're are going to be addressing it.

However, we're still concerned that this only cuts in one direction. And then we'll get to the list of regulations.

I apologize that I haven't spent enough time with

the draft paper, and I will submit my comments to the Staff. And so I've only addressed those issues that are before -- that basically -- the list of regs that NEI would like to see be deregulated.

The list of regulations that they wish to risk-inform is instructive. According to NEI's letter, NRC and NEI have already begun to risk-inform fire protection, the tech specs, and reactor security.

Now, you've already -- like I said, you've already wiped out 40 percent of the reasons to shut down a reactor that were contained in the pervious technical specifications. And now, basically, you want to go after what remains of the 60 percent.

The Agency has already indicated that there can be very little room. At least the Staff has already indicated that there is little room for burden reduction in that area, yet we're proceeding ahead with attempts to deregulate the tech specs.

Mr. McNeil, Corbin McNeil, was before the Congress last week, and he was touting the new efficiency of the nuclear industry. They're not any more efficient; you guys are just regulating less.

Now, if there wasn't an increase in capacity factors after you wiped out 40 percent of the reasons to shut down a reactor, there have been some real problems in this industry.

The list that NEI has provided you with, reads almost like a list of the most embarrassing regulations that the industry has to put up with. Fire protection has been an issue that this Agency has struggled with for going on two decades now.

In 1992, the NRC testified to Congress that reactor owners would only use temporary measures for about

six months until the safety problems have been addressed. Eight years later, we're still using temporary measures to address fire protection at reactors, rather than basically imposing minimum safety standards.

And now the industry and the Agency wish to risk-inform those regulations that have never really been enforced.

As far as reactor security goes, I think we're all quite aware of the problems with the spray tests, and basically the fact that Mr. Orich has been ridiculously successful at breaking into nuclear power plants and proving vulnerabilities to basically terrorist attack.

Yet, again, these regulations are again being subject potentially to risk information.

And then we get to the rest of the list that NEI has provided. We're calling this deregulation-by-dollars.

I think that what we see and what NEI has laid out is, again, a realization that these regulations are tied to a dollar amount.

You know, NRC claims to be a safety regulator. This is going to have absolutely no commensurate safety benefit for the public. That comes out of your own SECY Paper, 88-264.

Even if this whole policy is implemented perfectly, the public is not going to be any safer than they

are under Part 50.

And if you look at the list of subject regulations that NEI wishes to deregulate, it's pretty obvious that they're looking for an economic benefit here.

Although it's not just the deregulation-by-dollars that disturbs us, what NEI and NRC fail to acknowledge is that many of these regulatory requirements actually have substantial impact on safety.

You're no longer just whittling away at the margins; you're basically aiming at the heart of what we consider to be the basis of NRC regulation.

Back in 1993, NRC conducted a review of its regulations, and for each NRC regulation they asked what is the contribution to safety? And for the four prime candidates that NEI has identified, each one of those was determined to have a substantial impact on safety, yet these are subject to being deregulated.

It just doesn't seem like we're really concentrating on safety here; we're concentrating on deregulating regulations that basically are problematic and that cost the industry too much money.

Now, NEI has testified before the Senate Oversight Committee that this deregulatory effort is possible because of the improved safety record of this industry.

The mere fact that you haven't melted a reactor in

the last 20 years is not a sufficient enough reason for wiping out the regulatory structure that helped achieve that performance.

Unfortunately, risk-informed regulations are not being used to improve safety; they're being used to improve the economics of this failed technology by waiving inspections, shortening maintenance outages, and avoiding shutdowns.

That's why we've come to the conclusion that risk-informed regulation means that the public will be

exposed to more risk, while the industry is exposed to less regulation

I thank the Commission for the opportunity to present our views, and I'd be happy to address any questions you might have.

CHAIRMAN MESERVE: Thank you, we'll come back to you.

MR. RICCIO: Certainly.

CHAIRMAN MESERVE: Mr. Beedle?

MR. BEEDLE: Mr. Chairman, Commissioners, we appreciate the opportunity to participate in this update and status report on risk-informing the regulations.

We in the past several months have been impressed by the Staff's diligence and thoroughness in seeking ways to risk-inform the Part 50 regulations.

I think that in general the comments that were made during the question session of the Staff, we would agree with many of those.

There is no doubt that this is a complex issue, and as Commissioner Diaz points out, when you change one regulation, you end up changing a whole series of them.

And it is one that we've found to be a very perplexing one, and one that I think is deserving of careful consideration as we go about this process.

I think that at one time we were very optimistic that we could risk-inform Part 50, and do it in a somewhat holistic fashion. But I think that as you look at that and perhaps we'd take a more judicial look at some of those regulations, we would have not been quite as optimistic.

And I think that what we see today is that there have been a number of things that come up that show the complexity of it. Not to belabor the point, but the South Texas Project, in getting some changes in the QA program, failed to realize the benefit for the plant because of the other regulations that certainly affect those systems and components that were involved in that process.

And that's one of the issues that we're working through today that Ms. Carpenter was discussing earlier.

Could I have Slide 2, please? As I say, I think there has been a very thoughtful approach to this

risk-informing the regulation, and one of the things that has given us some concern, though, is our -- the focus on the quantification, the development of a number, establishing of guidelines that deal with those numbers.

And I'm not suggesting that the Staff is headed towards risk-basing the regulations, but it looks more like risk-basing than risk-informing.

And I guess I would -- I take some measure of comfort in Ashok Thadani's acknowledgement that we need to rework that framework document to provide the right focus. That is something that we will certainly be looking forward to, and willing to participate and provide our industry experience in that process.

So, the risk-based versus risk-informed continues to be an issue as we go about trying to develop improved regulations for the safety of the industry.

I think everybody acknowledges that if we could, in fact, quantify all the things, and all of our tools and mechanisms were precise enough to do that, it would be an easy matter to regulate.

We could look at our risk meter and we could determine exactly where we needed to go with it. But unfortunately, that's not the world we live in. We don't have that ability today, and to put a lot of faith in a calculation, I think would be a grave risk for us in the

management of the facilities today.

We still need to rely on some of that deterministic, the judgment that's applied by the management at the facility, as well as the management of the NRC on how well things are being done.

We see that time and time again in our cross-cutting issues in the oversight process. Those aren't quantified, but we can all come up with a judgment. The question is, how does that judgment get applied into the regulatory process? I think that's, in part, what we're dealing with some of these risk insights as we go through this process.

Next slide, please. The proposed approach, we call it an NRC proposed approach. Slide 3, please.

The establishment of these quantitative license bases is an approach that we think is probably not the wrong way to go -- or, we do think it's the wrong way to go. We're drawing some inferences, and, in part, from the framework document that gave us this disbelief in some of the briefings.

So it may be that we may need to do some more communicating with the Staff on this topic to make sure that we understand exactly where they're headed on that one.

So that's an area that we will have to continue to work on. Ashok addressed the question of fleet-wide safety

goals, and our recollection was that the Commission did, in fact, discuss the application of a safety goal on a fleet-wide basis as opposed to a plant-specific basis.

And maybe it's one of those things where we were listening with a different ear, because what we heard was that it was a fleet-wide guide, rather than plant-specific goal, and we will have to go back and review on the literature on it.

We have been operating on that assumption. We have taken the safety objectives and then gone to the safety goal and said that's the goal that deals with the entire fleet, and so to take that an apply it to each specific plant, I think is providing a degree of specificity to a goal that is hard to justify on a plant-specific basis.

And, again, it belies the underpinnings for our ability to calculate those goals. So that's something that we'll need to continue to work on.

As we go back and look at some of the history, we look at NUREG 1150, and we're still persuaded by the conclusion of NUREG 1150 where the core damage frequency was judged to be one that provided for safety of the public when coupled with a look at accident mitigation and the emergency planning combination.

And that was the conclusion, and I think that's still a valid one today. And we ought not disregard that

conclusion, and, in fact, as we go about the process of looking at PRAs and the development today, we've got to ask whether or not we have advanced the technology of PRAs beyond what was used in NUREG 1150, and can we expect a different result or one that is more precise in its calculations in the determination of risk?

The other thing that I might comment on here, the safety goal and the safety objectives or the subsidiary objectives that we developed, there is a tremendous margin in there. I'm not sure we've really dealt with that margin issue, and whether or not that margin is one that makes sense to us.

We've kind of approached this thing as, well, you can achieve that goal, so we'll set that goal or somewhere about there, and I'm not sure that that's the right way to do it.

That's a fairly limited goal, too, based on the internal events in the plant. So as we add more and more of these calculational techniques and considerations, I'm not sure that those goals are the right goals. We need to revisit that one.

Preferred approach, I think the -- Slide 4, please -- the pragmatic versus the theoretical is what I think I heard the Staff talk about earlier.

Looking at generic risk, I think is an important

thing for the industry, as opposed to some of the very detailed finely-tuned calculations that you might do on a system or a plant and preserving the risk-informed philosophy as opposed to the risk-based philosophy.

One of the things that has been, I think, a stumbling block for us in Option 2, is that we try to categorize pieces of equipment. We spend the majority of our time focused on not the risk-significant, or the absolutely risk-not-significant, but those things that used to be in the safety-related category that are no longer determined to be risk-significant.

We spend most of our time and energy trying to figure out what to do with them. It becomes a legal kind of a consideration, as opposed to a risk consideration.

How do you take this thing that was risk-significant, we know it's no longer risk-significant in light of the PRAs and other insights that we have, and we have a difficult time to come to grips with the regulatory treatment of that particular piece of equipment.

So that's one of the things that we need to deal with, and I think we will eventually come to a conclusion on how to do that in the coming months.

Next slide, please. We agree with the Staff's priority of focus on 50.44 and 50.46. We think that those offer the opportunity to demonstrate the feasibility of

risk-informing the regulations. I think they're sufficiently contained that we can deal with those, and determine what the effect is on other regulations as we go about this process.

And the 50.46, I think, is going to be -- you know, it's more than 50.46; it's the whole set of things that have to get factored into this. It is going to be far more complex than I think we even imagine today.

And I think Tom King gave you a brief insight into some of the complexities that we'll be dealing with in the 50.46 area.

The next slide, please. The conclusions, I think, from the industry's point of view, is that we do need to work on the framework and figure out exactly what the framework is, where it's heading, where it wants to head the industry, as well as the Agency.

We need to maintain that pragmatic approach; we need to focus on the 50.44 and .46, and the South Texas Project; that's an extremely important one.

The question has frequently been asked about why the industry isn't lining up at the front door to participate in pilot programs? And I think the answer is

that there is so much uncertainty as to where this is going to lead us and what it's going to cost for the plant, that they're conducting a wait-and-see.

They are waiting to see what comes out of 50.44. Can we deal with that in a rulemaking that would apply to all the plants in the industry? Can we deal with 50.46 and work our way through the myriad of regulations that apply or are affected by it?

And more importantly, we look at things like the late release issue, we look at the South Texas Project problems, we look at the PRA standard and the framework document, all as, you know, what does this mean to us if we leaped into this risk-informing the Part 50 regulation process?

So I think we're in a wait-and-see mode. I think the comment about the owners groups is very true. The owners groups are interested in moving ahead. They've got the technical ability to deal with some of this material, and they're looking at taking systems. One is a high-risk system, safety related, and look at that, and examining it on how you go about risk-informing regulations associated with it.

Another group wants to take a look at one that is not risk-significant, and determine whether or not it should be risk-significant or what components of it ought to be risk-significant, and use those as test cases to determine how you deal with the plant's physical configuration.

So I think there is a lot of merit in there and a

lot of benefit for the industry in terms of our ability to focus on the thing that represent risk to the plant and risk to the public.

So there should be no doubt in anybody's mind that the industry is interested in maintaining these plants in a safe configuration. There is no one that's more interested in that than the CEOs of these facilities. Because an unsafe plant is one that represents major financial risk, and he's not about to take that. So the last thing we want is deregulation of the safety regulations.

With that, I thank you, and I will be willing to answer any questions that you might have.

CHAIRMAN MESERVE: Good, thank you both. Commissioner Dicus?

COMMISSIONER DICUS: Thank you, Mr. Chairman. I have a couple of questions on Slide 2 and 3 which had to do with your concerns about being risk-based rather than risk-informed, and also the quantitative licensing basis.

But I think after you heard the comments that the

Staff responded to, the numerous questions that were put to them, particularly on risk-based versus risk-informed, I think from your comments, I heard a little bit of comfort level coming, that you recognize that this is a work-in-progress and that the Staff is aware of the issues and concerns, so I'm going to pass on those questions.

I would like to go however, to Slide 4. And I wondered if you could give me an example of how using what you call your preferred generic risk insights to be applied to something, for example, like the design basis accident assumptions?

MR. BEEDLE: Well, I think that in 50.46 when we look at the loss of coolant accident and the large break loss of coolant accident, you know, the considerations that we have today are purely deterministic with a lot of conservatism involved in that.

And if we could look at that from a risk point of view and get a risk-based requirement for design, and ultimately operational requirements for the plant, I think we'd see a significant improvement in the way we deal with some of our issues.

We've got a number of plant operational requirements that stem from that design requirement on the large break LOCA. So that's one where you could look at the design requirement and deal with that one, and that would have a significant impact on the way you operate some of the plant's piece of equipment.

COMMISSIONER MERRIFIELD: You said risk-based. Do you mean risk-informed or risk-based?

MR. BEEDLE: Risk-informing. That is a major challenge to try to overcome that.

COMMISSIONER DICUS: And on Slide 5 -- thank you for that response -- on Slide 5, you have the middle big bullet and square, focus on areas of greatest potential benefit. What do you mean by benefit?

MR. BEEDLE: Well, clearly, the benefit for the changes in the regulations, if the industry is going to spend effort to do analysis work, more PRA, more analytical, then we need to demonstrate whether or not there's going to be a return.

You don't go to the CEO and say I want to spend $10 million on a PRA upgrade in order to save 50 cents. So we've got to find some way that makes that justifiable.

And Mr. Riccio was commenting about in his discussion about the amount of money that we identified with these changes in regulations. That's very important to the

industry.

If we don't derive benefit from that, then I'm not sure that we're going to find too many people who are willing to engage in pilot programs to demonstrate the feasibility of some of these.

So it truly comes to whether or not you do have any cost/benefit in this case.

COMMISSIONER DICUS: I appreciate the comment, and I appreciate the issue with cost, and, clearly, the Commission takes that into consideration as well.

I'm hoping, though, as we also use the term, benefit, we see a benefit to safety, too. So that was a word I was looking for in there. Thank you, that's all.

CHAIRMAN MESERVE: Commissioner Diaz?

COMMISSIONER DIAZ: Thank you, Mr. Chairman. Mr. Riccio, it's always a pleasure to have you here.

MR. RICCIO: It's always a pleasure.

COMMISSIONER DIAZ: I will try to engage you at another level first to see if I can really understand where the concerns are.

If we just put down nuclear power plants and implementation of regulations of nuclear power plants, you seem to imply -- I probably heard it wrong -- that this is a particular effort of the Agency.

I thought that the entire country is trying, you know, in this new year 2000, to look at risk as a way to improve the quality of life of people, to focus on what is safety, you know, to look at where do we put resources that are better utilized for the people of this country.

And I thought that, you know, in many ways, a risk is becoming a national tool. We might not even be, you know, as far ahead as we think, but it's really everywhere, just to try to say that there are limited resources and let's use them better for public safety, health, quality of life.

Is that something that you see happening, or you don't -- across the national mantle.

MR. RICCIO: In a vacuum, in just theoretical, it sounds great. You know, optimally, these guys should be able to take a look at where risk is most important and to be able to focus on that.

Unfortunately, that's not the way we're seeing it implemented. The first time this Agency used 1.174 was to avoid a steam generator tube inspection -- I'm sorry, that's not exactly right.

You used it to avoid a steam generator tube inspection, and you're now -- actually the Agency is being

tested right now by the industry.

I'm taking a good hard look at what's going on down at Arkansas Nuclear I. You know, they made a commitment to take care of their steam generators. They're trying not to straighten them out, and I think risk plays into that.

Now, the Agency has made a couple of mistakes down the road in terms of avoiding inspection, and I think that to be using risk insights to allow for an increased risk to the public is inappropriate.

We're not in a perfect universe. You don't have all the information. We know there are problems with the PRA, we know there are problems with the design basis, and

so from a conservative perspective, we'd like to see basically a --

I wouldn't mind seeing risk used if I thought it was being used appropriately, and so far I have not seen that to be the case.

COMMISSIONER DIAZ: So it's not the tool, the overall intention of having people focus more on safety. You're really concerned that it might not be -- could have been well implemented, so it's an issue of implementation more than an issue of the country now has grown, we know a lot more than before in every field.

MR. RICCIO: And it's not -- there are some philosophical, almost ontological problems with the way this Agency is undertaking risk-based regulation. It's not just implementation.

COMMISSIONER DIAZ: I see.

MR. RICCIO: I believe there are weaknesses across the board for everything from PRA quality to the quality of the design basis, to the quality of the effort underway. In terms of the ones you're selecting to deregulate, I do believe -- and I understand that the industry needs some commensurate financial reward for undertaking this effort, but it sends chills down my spine when I hear the word, certainty, kicked around.

What we're dealing with right here is really

uncertainty, and I don't believe that we can basically have -- I don't want to see this become a rubber stamp, and I think that at this point, with --

I understand the rest of the country is using risk insights. Unfortunately, other industries don't have the capability of wiping out an entire state.

COMMISSIONER DIAZ: All right, obviously we, or at least I believe that we're trying to improve regulation, and

not deregulate. And this is an area where I would really encourage you to come and sit down, and I'd love to have a chance to talk with you. I need to understand what are these specific things? Thank you so much.

MR. RICCIO: I'll take you up on that.

COMMISSIONER DIAZ: Mr. Beedle, there is a series of things in here that obviously the industry is not precisely pushing the NRC to become more risk-informed.

Contrary to what Mr. Riccio said, you obviously think that it is time to consider, you know, where we are, how do we do it, making sure, as you stated, which I agree with, that this is not one tool, but many tools.

However, you know, there is an issue related to -- say, take 50.46. And I will be willing to bet a glass of water --

[Laughter.]

MR. BEEDLE: Or Gatorade.

COMMISSIONER DIAZ: Or Gatorade. To see how that if you really risk-inform 50.46, and you make it fully compatible with the rest of all of the other regulations, not truncating it at some point, which, you know, you will have to; not propagating it to everything else, which, you know would force someone to, you would find that there is a tie-in.

And by resolving ECCS, you are going to have to resolve all of the other thermohydraulic issues associated with it.

Risk information, in and of itself, is an integral technique that will tie into the other things. So, it is in truncation that you make approximations. It is in propagation that you become encompassing.

And what I was hearing -- that's why I didn't ask any questions before -- is that we are at a point where we're trying to determine, where do we truncate; where do we propagate? And that, I think, is almost premature to say where can we truncate and where can we propagate from rule to rule.

And I gather that from you, but I'm expressing it in a different manner. You are presently saying that there seems to be some benefit from a couple of issues, resolving those.

But those issues do propagate into other issues,

unless you truncate them.

MR. BEEDLE: Absolutely, sir. And I think that was the essence of Tom King's response when he talked about the various elements of 50.46 and what you have to consider. I mean, are you looking at changing -- risk-informing the

design requirement itself, or are you risk-informing some of the ultimate fuel cladding characteristics that you have to deal with?

I mean, it is not an easy choice, and we're going to have to go examine each one of them and find out what it means in terms of ultimate effect on other regulations and on plant safety.

COMMISSIONER DIAZ: Since I surrounded by lawyers, I rest my case, Mr. Chairman.

[Laughter.]

[Discussion off the record.]

CHAIRMAN MESERVE: Commissioner McGaffigan?

COMMISSIONER McGAFFIGAN: Mr. Riccio, I'll start at the philosophical level where Commission Diaz was. You talk about the improved standard tech spec conversion program that we've been underway with for several years, and it really, I think, predates any gleam in the eye of deregulation of the industry.

I mean, we were, I think -- the trouble is that we dispute the starting facts. But in the case of the improved

standard tech specs conversions, we did get rid of a fair number of limiting conditions of operations that I think the Staff's judgment was had zero or close to zero -- I'm not sure how many decimal points -- effect on safety.

Now, if you take that example, if we start off with the regulatory framework that has a bunch of things in it that really don't contribute to safety, why shouldn't we get rid of the things that don't contribute to safety, if we can calculate that?

Is the deterministic analysis over?

MR. RICCIO: I will disagree with your premise. To get these regulations on the books in the first place, they had to be of some commensurate safety benefit.

COMMISSIONER McGAFFIGAN: Well, that is not necessarily the case. To get many of our regulation on the book took a vote of three Commissioners in either the AEC or the NRC, with regulatory analysis that may well have been somewhat suspect, at least given what we know today.

They were taking guesses based on conservative engineering analysis as to what might contribute to safety.

MR. RICCIO: And those were premised on conservative analyses.

COMMISSIONER McGAFFIGAN: Extremely conservative.

MR. RICCIO: Right, and you've been whittling away at the margins ever since.

COMMISSIONER McGAFFIGAN: But you're not whittling

away a margin if you determine a rule has zero benefit. The margin has been reduced by -- if I have a margin of X, and I reduce it by zero, X minus zero is still X.

MR. RICCIO: Maybe for your one tech spec, but marginal safety, cost/beneficial licensing actions, we can go down a list of a series of attempts by this Agency and this industry to reduce the regulatory burden.

And I think that NEI will --

COMMISSIONER McGAFFIGAN: Yes, unnecessary. What we've been trying to do -- you know, we always put the word or the adjective, unnecessary, in. I mean, we're trying to reduce unnecessary regulatory burden that does not have a commensurate safety benefit, and I think its incumbent on you not to talk generally.

But if you take the tech spec case, to say, which of the limiting conditions of operation Public Citizen -- that were eliminated -- in all honesty, we have Revision 2 to tech spec -- Improved Standard Tech Specs that's about to go out.

You can take a look at that, and we have risk-informed. All of the stuff we did the first time around, I don't think we claimed was risk-informed. There is a separate risk-informed tech spec effort that's underway.

But if you take that, it's incumbent on you to say, well, I really think that you're giving up this -- this LCO is going to cause a problem and force us into some sort of a process to justify, if we haven't already.

I assume our reg analysis will justify why we think there is zero benefit.

COMMISSIONER MERRIFIELD: Commissioner, if you don't mind, if I could just say one thing, Mr. Riccio said we used to use a conservative analysis, and the change means that it's -- suggests that it's more dangerous.

In fact, some of the conservative decisions made by this Agency were because we didn't have the information.

COMMISSIONER McGAFFIGAN: Right.

COMMISSIONER MERRIFIELD: We didn't have the scientific basis upon which to establish the regulations. We spend now $40 million a year on research to find a lot of this out, and in the subsequent time period, we have, because of that scientific information, a better ability to more accurately predict what's going to happen with these reactors to more appropriately establish a regulatory basis.

I just thought I'd mention that.

MR. RICCIO: I don't mean to harp on Indian Point, but if that was actually the case, then you wouldn't have had the problems at Indian Point that you've had.

COMMISSIONER McGAFFIGAN: Well, Indian Point is a

good example. I'm glad you raised that, because Indian Point -- I'm not saying that we made a mistake at Indian Point. I think we will have to wait and see what happens.

MR. RICCIO: You do not?

COMMISSIONER McGAFFIGAN: I'm not willing at this point to say that the Staff made a mistake in granting the extended time. We'll see what happens in the analysis that we're going to do in the future.

But that analysis was deterministic.

MR. RICCIO: Right.

COMMISSIONER McGAFFIGAN: You criticized the Farley analysis, and Farley was probabilistic.

So you have an analysis that was probabilistic, and I'm sure you think it was just --

MR. RICCIO: I think you were taking risks, yes.

COMMISSIONER McGAFFIGAN: But the analysis that was relied on at Indian Point 2 in deciding that we could extend the period before the next inspection of the steam generators was a deterministic analysis. There was no probabilistic element to it.

So all I'm telling you is that deterministic analysis is not infallible.

MR. RICCIO: I know, but I just think that deterministic analysis at this point seemed to be more conservative than the risk-based approach that this Agency

and the industry would like to take.

It just doesn't -- I -- you know, maybe I see the glass half empty and you see it as half full, but when I -- I see that, you know, Haddam's next emergency core cooling system wouldn't have performed its function for the 28 years that it operated. I have a hard time understanding why you want to go back in and deregulate ECCS analyses.

COMMISSIONER McGAFFIGAN: I think you're simplifying it grossly when you say that Haddam wouldn't have -- the emergency core cooling system --

MR. RICCIO: May not have been able to perform its function, and that comes from your own press release.

COMMISSIONER McGAFFIGAN: May. And then you get into whether it's, in fact, operable.

But let me just ask Mr. Beedle. You actually both are -- sitting here as a Commission listening to the two of you is, I think, as Commissioner Merrifield said earlier, you're both urging, go slow and let's take this one step at a time. There is actually some commonality between you.

[Laughter.]

COMMISSIONER McGAFFIGAN: I may have gotten Riccio in trouble.

MR. RICCIO: I do think you should go slowly.

COMMISSIONER McGAFFIGAN: For different reasons, you guys are saying go slow. I mean, there are economic

reasons here, and there are alleged safety reasons there.

The Staff made the point, Mr. Beedle, in their discussion about this alleged radical departure from the current approach -- they went back to Reg Guide 1.174 where we did. I mean, at least this Commissioner thought he was approving the application of that ten to minus five for core damage frequency, ten to the minus six for LERF or for deltas in looking at a specific licensing action.

I was doing that on a plant-specific basis. So why, if I approve 1.174, and that was a conscious act on my part, isn't this just very similar, what the Staff is proposing?

MR. BEEDLE: I think you were doing it, if I recall, on specific licensing actions.

COMMISSIONER McGAFFIGAN: Right.

MR. BEEDLE: So if a plant came in and asked for a change --

COMMISSIONER McGAFFIGAN: The delta.

MR. BEEDLE: -- to the license --

COMMISSIONER McGAFFIGAN: Right.

MR. BEEDLE: -- then you would look at that as the delta as the criteria. But I think we're looking at the core damage frequency applied to each plant, specifically, and I think that would pose some problems for us.

I see the core damage frequency at ten to minus

four for the entire, different than each individual plant meeting that.

COMMISSIONER McGAFFIGAN: But we actually aren't. One of the papers we have before us at the moment is a Safety Goal Policy statement where the Staff listened to both of you. I think there was unanimity on the part of the public and the industry that we should not elevate core damage frequency or are early release frequency to safety goals.

MR. BEEDLE: Right.

COMMISSIONER McGAFFIGAN: And I don't think this paper necessarily does so, either. I mean, we're rejecting in terms of changing the safety goal policy statement, we're not, I don't, think, secretly pushing in through this risk-informed Option 3 approach.

MR. BEEDLE: Well, we saw that creeping into maybe the framework document and some of the discussions where

those numbers are used.

COMMISSIONER McGAFFIGAN: Okay.

MR. BEEDLE: Once they get used and fixed and pretty soon they get used again, and all of a sudden you've got a specific criteria to deal with.

COMMISSIONER McGAFFIGAN: The last comment I have for Mr. Beedle, the person who writes your comments on a strategic plan, could you make sure that he talks to you

before he writes the next set of comments?

Because in the NEI comments on the strategic plan there was the search for a clear, concise definition of safety when it comes to reactors.

And I think that the only clear, concise definition that anybody has around is what ACRS puts forward which is about ten to the minus three, ten to the minus four core damage frequency, which is exactly what you have testified against on numerous occasions with me. But I think you may want to clarify with NEI and straighten it away so that we don't get those sorts of comments in the future.

CHAIRMAN MESERVE: You don't need to respond.

MR. BEEDLE: Thank you very much, Mr. Chairman.

CHAIRMAN MESERVE: Commissioner Merrifield?

COMMISSIONER MERRIFIELD: Thank you, Mr. Chairman. Turning to Mr. Riccio first, obviously I wouldn't expect you to come in here and be a cheerleader for the nuclear industry, nor is that our role.

One of things you said, I guess on page 2 of your statement, is that the nuclear industry is not operating better, the NRC is just regulating less.

MR. RICCIO: Yes.

COMMISSIONER MERRIFIELD: You stated that, and you were quoting Corbin McNeil, that overall ability and

capacity factors are not necessarily a good indicator of operating with better and improved safety, and that's fair. I wouldn't disagree with that comment, necessarily.

I think there are some other indicators that would show that perhaps they are operating better. Radiation exposure is down and that's a good thing. The time between scrams and the number of scrams out there are both pretty good indicators that they are operating the plants more thoughtfully.

And then, finally, you have refueling outages that have decreased in the amount of time, which David Lochbaum has been quoted in a number of instances as saying that in some instances, does indicate the fact that licensees are

planning better and may indicate they're doing a better job.

So I think there are things out there that indicate that the industry is being more thoughtful. Now, for our part, we have changed the way we do some of our regulation.

I think the new inspection and oversight process, which has, for the most part, been supported by a number of people, those indicate from the inspection standpoint that there are areas where we have not inspected as much as we should have, and we're doing more; and some areas where we have spent a lot of time, from a risk perspective, justifiable, that we're doing list.

So I think that is a case where we're doing a better job. So, you know, I lay that out for what it's worth.

But I want to go to another comment you made. You quoted our former Chairman as saying that risk-informed regulation can be a double-edged sword.

MR. RICCIO: Right.

COMMISSIONER MERRIFIELD: I agree with that, and it should be. You stated in your oral testimony that you were perhaps a little bit encouraged by some of the comments of the Staff that we may have identified some things where, indeed, we may need to increase our overview.

MR. RICCIO: I was encourage that they acknowledged that problems exist.

COMMISSIONER MERRIFIELD: Yes. Well, they talk in their slide about issues relative to hydrogen control measures for Mark III and ice condenser containments as being one where they're going to take a look at it.

So I guess, you know, that it may be that we haven't gotten completely out of the starting blocks on this, and it may be too early to draw a conclusion as to whether this is a useful effort or not.

I just thought I'd give you an opportunity to respond to that.

MR. RICCIO: The problem is that if you try to

impose a new regulatory requirement on this Agency, you're going to have to go through a risk-based --

COMMISSIONER MERRIFIELD: Risk-informed.

MR. RICCIO: Pardon me. You're going to have to go through a cost/benefit analysis commensurate with the backfit rule. To deregulate, you don't have to do that.

And I find that to be a stark disparity. It's permissible to reduce regulation, but it's not permissible to actually -- I don't want to say ratchet-up, either -- but to add additional requirements.

It's a bit of a problem as well with the new oversight process. The new oversight process handcuffs the regulator. It doesn't regulate the industry. It says when the Agency may actually regulate.

And I think that is an inappropriate stance for the regulator. I think the regulator should be -- when the regulator sees something that is important to safety, that they should be able to act upon it without having to go through the machinations, especially if you're going to allow them to deregulate.

I believe in equal treatment. If you're going to allow the deregulation to occur without any safety analysis -- sorry, cost/benefit analysis, then the same should be said for imposing new regulations under this rubric.

COMMISSIONER MERRIFIELD: Yes, okay, I see your

point, but I think -- I don't think that you necessarily want to leave the impression -- maybe you do -- that reducing the regulation is analogous with reducing safety.

One of our cornerstones and one of the requirements is that we maintain the level of safety. You know, I can have a different form that's two pages, and I rewrite and I make it one page and I get the same information. Just because it's a shorter form doesn't make it less effective.

MR. RICCIO: I understand that.

COMMISSIONER MERRIFIELD: Being longer and more complex isn't necessarily a good thing.

MR. RICCIO: My concerns are stemming from the way I see 1.174 used; they're stemming from the fact that you allow another rewrite of 50.59 and for the first time this Agency actually allowed an increase, although minimal, you allowed an increase in risk.

And that is an indicator to me of where, potentially, this whole program is heading.

COMMISSIONER MERRIFIELD: Well, that's certainly not the direction we want it to go. I think -- I want it to go. I want to end, at least for my questions for you, by stating that your comments are valuable. Having your input certainly keeps us aware of a differing view, and I certainly hope you continue to provide us with your

insightful comments.

Turning to Mr. Beedle, I saw the slides, and we have clarified a little bit about your concern that we were going to a risk-based approach, rather than a risk-informed approach.

Obviously, risk quantification should not be the

sole basis for our regulation. But there's obviously a gap. We've had some information issues. You know, your perception of where we're going with Option 3 and the framework that we laid out in 0086, wasn't quite where you felt it needed to be.

How is that we've got this gap in terms of communication between ourselves and you and this difference in where we're coming out on this?

MR. BEEDLE: Well, I think one of the reasons is there are an awful lot of people working on this. I think Research has got a different approach to regulation changes than does NRR, as does the industry, and so we are looking at different groups within RES that are working on this project along with other things that they are working on, and they are trying to balance their work on this effort along with other things that they are doing and those kind of spill over sometimes.

If your focus is on getting a PRA standard that is quantifiable through the ASME process and you are also

working on this, then it seems to me logical to think that that is going to kind of feed in here and some of the thought processes that are over in that camp are at play in this one, so I just -- I think it is another demonstration of the complexity of trying to deal with regulation changes where you are getting down at some of the fundamentals of why the regulation exists.

Now the question -- if I may -- just to kind of footnote this, the comment about slowness, I am not suggesting that we go slow. I am suggesting that we focus on some identifiable regulatory changes that we can come to grips with and use the lessons learned from that to go ahead with other proposed regulatory changes.

I think the two, the .44 and .46, represent good ones to do that because one is I think relatively contained, the hydrogen issue, and the other one is pretty far-reaching. Depending on how we treat that, as Mr. Diaz suggests, how you truncate that will have a lot to do with the success you have in making that change. I think that is a valuable lesson.

Now if we can do that by next week, I think that would be great.

[Laughter.]

MR. BEEDLE: But I think it is going to take longer than just a few weeks and my suggestion is that we

prosecute those, not just go slow but prosecute those, so slow as opposed to all-encompassing. That is the issue.

COMMISSIONER MERRIFIELD: I appreciate that. I do

want to make one mention about one sideline you did say.

I am aware that there are efforts on the parts of various owner groups to do a self-analysis on the PRAs out there.

I think that is a positive thing, more time spent on making sure those are of the highest quality I think is a good thing. I hope, you know, a pure economic analysis isn't being made on that project in terms of an individual plant by plant or owner by owner decision for that because I think that work is meritorious at all plants for a variety of reasons and certainly -- I don't know if you have any thoughts about that but certainly I, for my part, think that that is money well spent.

MR. BEEDLE: Well, I think that there are two things that are at play in the owners group effort.

One is certainly the self-assessment by the utility of their PRA, but perhaps more importantly is the peer review that is conducted by individuals that are knowledgeable and experts in that field, and there is nothing like the peer review process to kind of identify shortcomings in the way you do your work, and it has been very valuable.

It isn't a case of the peer being lenient or accepting of low standards. They are pretty exacting in their process. You know, they did it this way. It really stood the test of time from their point of view. They want to see everybody benefit from that experience.

COMMISSIONER MERRIFIELD: Hopefully, the monies will be invested to take advantage of those peer reviewed comments.

Thank you, Mr. Chairman.

CHAIRMAN MESERVE: Good. Thank you. Mr. Riccio, there is one point that you made of the several of the issues that you have raised that others have asked about, there is one that I wanted to pursue a little bit.

At the very end of your testimony you talk about the fact in 1993 there was the NRC evaluation of its regulations and that .44 and .46 were ones that at that time were identified as having a substantial impact on safety and you basically criticize us and NEI for the fact that those are candidates for examination in this risk-informed process.

Let me say, I think that the comment sort of misses the point of what we are trying to do. I don't think that anyone here is suggesting that 50.44 or 50.46 don't address important safety issues or that anyone is suggesting that they be eliminated or that they be repealed in some

fashion.

I think that the thrust is whether we can do a better job on those regulations and that the very fact that they have a substantial impact on safety is and that identification is why they are worth looking at, to make sure that they are focused correctly.

MR. RICCIO: I was at the meetings, the workshops, and it was my -- and given my own bias -- but it was my impression that the reason they were selected is because that is where they feel that they could get the greatest burden reduction.

I would prefer to see, since this is really a, you know, this initiative is fresh out of the box, I would prefer to see that it be implemented in things that are less risk-significant. I know this may not garner as much benefit to safety, but if you screw up, the downside isn't nearly as great, I would think. That was why I was concerned that we are taking, you know, we are setting our targets on those issues that were at least in terms of your own reg review are considered to be substantial, to have a substantial impact on safety.

CHAIRMAN MESERVE: That is a fair point, that I suppose if there were other regulations that were not as safety-significant, but where there is significant advantages to revising them, maybe in burden reduction,

maybe in other things, that you wouldn't have the consequences. Is that the point?

MR. RICCIO: That was the point that I was attempting to make.

CHAIRMAN MESERVE: Okay.

MR. RICCIO: That I think you can be focusing on some different regulations first. Quite honestly, I don't believe this process is sound and I guess otologically, philosophically I believe there are some serious problems with it.

The entire premise is based upon the fact that each plant has been constructed, operated and maintained in conformance with its design basis, and over the years I have been thoroughly convinced that that is just not the case.

So, you know, I see problems with what you have on the ground. I see problems with the quality of the PRAs. I see problems with the fact that the PRAs don't reflect reality. They were talking 1 in 10,000, 1 in 100,000, 1 in a million. Your core damage frequency in this industry in the United States is 2 in 2500 and that excludes the test reactors that you have also melted down, so core damage frequency is 2 in 2500.

I am trying to just get the point across as to why I have serious philosophical problems with risk-basing the regulations.

When I met with Chairman Jackson several years ago, she asked what is your goal in engaging this agency, and it was to keep the regulatory fence as high as possible so that we might prevent another meltdown in the United States, and thus far we have -- the industry and the agency have achieved that, and I am afraid that with this new effort that that may no longer be the case.

CHAIRMAN MESERVE: Let me suggest that the proof of this -- we are in a very early stage of this process -- and probably the proof of where we are headed and why we are doing it and what the impacts are would be better tested when we have a more concrete proposal that is in front of us rather than the sort of general strategy we have and that I'd suggest that maybe it would be useful for everyone to defer judgment on how this process is going to work -- certainly the industry is deferring judgment as to whether they even want to participate in it -- for the opposite reasons of you, because they are not sure where it is headed.

I think that having this in a somewhat more concrete form would be helpful to everyone to assess that.

MR. RICCIO: I think I agree with you. My only concern is I heard the word "certainty" kicked around --

CHAIRMAN MESERVE: Uncertainty.

MR. RICCIO: No, no, "certainty" -- the industry

wants certainty in this process.

The last time I heard that was with license renewal and I am afraid that after, you know, Yankee Rowe is shut down when it attempted to extend its license, that certainty became the dominant factor in the rewriting of the rule rather than public health and safety.

Let's hope that that doesn't happen again with this new performance based initiative -- I'm sorry, risk-informed initiative -- can't keep them straight.

CHAIRMAN MESERVE: Mr. Beedle, there was one aspect of the SECY paper that you didn't mention that did catch my attention of something that the Staff is trying to do, and that is the Staff perceives that there may be something they call "holes" in the current regulatory system, that there may be some things that we should be regulating that we are not regulating.

They flag as an example I think there are sealed LOCAS in PWRs and I guess the other one was a melter of

containment liners in BWRs as being an area where they may be some problems.

Has the industry looked at those issues, and do you have any perspectives on that?

MR. BEEDLE: I don't know how much work the owners groups have done on those specific issues but as a general comment I think this is precisely the area that Chairman

Jackson was talking about on it cuts both ways.

We may find some things where we don't need to regulate because they aren't all that safety significant, but there are other things where there are no regulations and you do need to impose regulations in those areas.

We are finding that as we go about the process of examining our systems in light of the PRAs. We are finding systems that are not safety-related that really do have a safety impact, and we are prepared to move those things into a category that represents the kind of treatment that is deserving of a safety significant component.

By the same token, we are finding things that are safety significant categorized that are not in fact true safety significant and we would like to move those down into a category where we don't have to spend so much time and effort trying to deal with them.

If there are holes, and Mary mentioned those, as we go through this analysis and we find holes, then the first one to stand up and say we ought to plug that hole is the group of people that are operating these plants.

We are not the least bit interested in running a plant with a significant safety risk and I think you will get that from every one of our executives.

As went through, starting in the '88 timeframe, when we did the IPEs, up to today, as you find

vulnerabilities or opportunities to reduce your risk in those PRA processes, we have been putting in place procedures and equipment to modify our plants in order to do that so I think we are not going to balk at trying to improve the safety of the plant.

What we really are looking for is a more rational approach to some of the issues that we deal with that we don't think represent safety risk.

CHAIRMAN MESERVE: Let me just say I am very pleased to hear that, because -- that surprised me, but I am very pleased to have you tell us and to tell the audience that here today because it does seem to me that our capacity to go forward with this whole effort is where we look at the risk significance and call them as we see them, and if there are opportunities for us to reduce regulatory burden where

there is no benefit from having the regulation we should do it.

On the other side, where we are not regulating where we should be, we have to step up to the plate and up the ante on that, and both of those things go together, and we won't succeed in this effort unless that is our single objective.

That is my final question. I think that we have come to the end of the day. I would like to thank you both and to thank the Staff for their presentations today. I

think that it is clear that we have a long and difficult task in front of us. I am hopeful that as we get into the more concrete work that it will help to crystallize these issues and make them easier to resolve than perhaps they have been and to deal with them on a generic basis.

The proof will be in the pudding as we go forward. Nonetheless, I think this has been a very helpful briefing and appreciate the input that all of you have provided.

Let me turn to my colleagues and see if they have a closing comment.

[No response.]

CHAIRMAN MESERVE: If not, we stand adjourned.

[Whereupon, at 3:35 p.m., the briefing was concluded.]