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NUCLEAR REGULATORY COMMISSION

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ADVISORY COMMITTEE ON REACTOR SAFEGUARDS

(ACRS)

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FUKUSHIMA SUBCOMMITTEE

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WEDNESDAY

SEPTEMBER 4, 2013

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ROCKVILLE, MARYLAND

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The Subcommittee met at the Nuclear Regulatory Commission, Two White Flint North, Room T2B3, 11545 Rockville Pike, at 8:30 a.m., Stephen P. Schultz, Chairman, presiding.

SUBCOMMITTEE MEMBERS:

STEPHEN P. SCHULTZ, Chairman

J. SAM ARMIJO, Member

RON BALLINGER, Member

DENNIS C. BLEY, Member

CHARLES H. BROWN, JR. Member

MICHAEL CORRADINI, Member

HAROLD B. RAY, Member

JOY REMPE, Member

PETER RICCARDELLA, Member

MICHAEL T. RYAN, Member

GORDON R. SKILLMAN, Member

JOHN W. STETKAR, Member

NRC STAFF PRESENT:

HOSSEIN NOURBAKHSH, Designated Federal Official

SHER BAHADUR, NRR/DPR

MARK CARUSO, NRO/DSRA/SPRA

STEVE DINSMORE, NRR/DRA/APLA

DANIEL DOYLE, NRR/DPR/PRB

MARY DROUIN, RES/DRA/PRB

RICHARD DUDLEY, NRR/DPR/PRB

SHANA HELTON, NRR/DPR/DRMB

GEARY MIZUNO, OGC/RMR

ALSO PRESENT:

EDWIN LYMAN, Union of Concerned Scientists

A-G-E-N-D-A

P R O C E E D I N G S

8:39 a.m.

CHAIR SCHULTZ: This meeting will now come to order. This is a meeting of the Advisory Committee on Reactor Safeguards Subcommittee on Fukushima. I'm Stephen Schultz, chairman of the subcommittee.

Members in attendance today are Mike Corradini, Joy Rempe, Charlie Brown, Mike Ryan, John Stetkar, Sam Armijo, Harold Ray, Dennis Bley, Dick Skillman, Ron Ballinger and Pete Riccardella.

The purpose of today's meeting is to review and discuss the NRC staff's development of a notation vote paper with possible options for addressing the Near Term Task Force recommendation one which is to establish a logical and systematic and coherent framework for adequate protection that appropriately balances defense in depth and risk considerations.

This paper is due to the commission in the beginning of December 2013. Until now we've held three subcommittees meetings on the subject on August 15th and December 4th, 2012 and May 23rd, 2013.

In addition to today's meeting, we've also scheduled one additional subcommittee meeting in October prior to a full committee meeting in November when the ACRS full committee plans to write a letter to the

commission.

This entire meeting is open to the public. Rules for the conduct of and participation in the meeting have been published in the Federal Register as part of the notice for this meeting.

The subcommittee intends to gather information, analyze relevant issues and facts and formulate proposed positions and actions as appropriate for deliberation by the full committee.

Dr. Hossein Nourbakhsh is the designated federal official for this meeting. A transcript of the meeting is being kept and will be made available as stated in the Federal Register notice.

Therefore, it's requested that all speakers first identify themselves and speak with sufficient clarity and volume so that they can be readily heard.

We've received no written comments or requests for time to make oral statements from members of the public regarding today's meeting.

However, I understand that there may be individuals on the bridge line today who are listening in on today's proceedings.

The bridge line will be closed on mute so that those individuals may listen in. At the appropriate time later in the meeting we'll have the

opportunity for public comment from the bridge line and from members of the public in attendance.

Today's meeting, as I've indicated, is one that we had - on an issue we have been following and the staff has been actively and aggressively working on over the course of the last 18 months.

We're looking forward to the presentation today. From the last meeting a number of events have happened over the course of the summer and we're looking for a full update of the considerations of the staff resulting from those events and their considerations with management.

We'll now proceed with the meeting and I'll call upon Dr. Sher Bahadur to - who is deputy director of the Division of Policy and Rule Making in the Office of Nuclear Reactor Regulation to open the presentations today. Sher?

MR. BAHADUR: Thank you, Mr. Chairman. Good morning, subcommittee members. As you mentioned, this is out fourth meeting with the subcommittee on the recommendation one which is the improving the regulatory framework and during this particular initiative that the staff has taken is a model in my mind of transparency and collegiality in its development.

We had a number of public meetings. We had

shared our thinking with the commissioners as we were developing these in part and, of course, this committee subcommittee has been more than gracious to allow me to come here and share our thinking when the staff was developing various options.

We have seen it one time and the staff had time to find 20 areas which needed improvement. They cut it down into options and some options and now finally we have come into a evolution in our thinking that we will come to you with three major areas where the improvement could be made.

And as you will see and including the presentation the staff has developed that in such a manner that the commission can make a decision whether you want to make changes in one area, two, three, in all of them or none because during the development of this particular initiative, the staff has also reinforced its thinking that nothing really is broken but things can be improved and in the resource permit, in the time frame then those improvements can be made.

As you mentioned, Mr. Chairman, today's presentation will be after giving the background but mostly concentrate on your questions in the last meeting and how the staff plans to address those issues. So most of the discussion will take place in that part.

So with that, if you want to have any question for me I would like to introduce Dick Dudley who is not an unknown quantity since he has been here for the last three or four meetings and he can start the presentation.

MEMBER ARMIJO: Sher and Dick, as you go through your presentation, I would appreciate it if you would keep in mind that at least I'm looking for justification for the improvements that you're talking about - is there sufficient benefit from a safety standpoint for the improvement and what is that benefit - something concrete, because some things can always be improved and I agree with you nothing's broken.

But I'm looking for in the areas that you're recommending I'll get - I would like to get a feeling that there's a staff that feels strongly that something is necessary or valuable to do as opposed to it would be nice to do.

So if you'd just kind of keep that in mind because that's really what I'm looking for.

MR. BAHADUR: And that's an excellent observation if I may say so myself because when the staff was developing these options in these areas where the improvement is needed we struggled also with a similar question.

And just to give you an example, just to define what we were trying to solve, just to define what the question was that this working group is going to solve and then present that to the steering committee took us several weeks.

So yeah, I mean, you'll see that the staff has gone through that evolution in their mind to be able to do that.

MEMBER ARMIJO: Thank you.

MR. BAHADUR: And before I ask Dick to make the presentation, I'd like to recognize the chief of the branch which is responsible for this as well as the other Fukushima initiative. The branch chief is Shana Helton, Shana is somewhere in there.

So thank you, Shana, for that. And with that, Dick, I'd like to welcome you.

MR. DUDLEY: Thank you, Sher. On slide two this is just an outline of the presentations we'll be providing to you today.

I'm going to first give a brief overview of recommendation one and review the actions that we've taken in the development of our recommendations.

Then I'll discuss some changes to the staff positions since May 23rd since the last time we met with the subcommittee. I'll discuss the status and next

steps that - those first issues will not take very long and then we'll respond to the ACRS questions from the May 23rd meeting. That will be the balance of today's presentation.

In slide three, as Sher said, we started with multiple framework improvement activities discussed in August of 2012.

Those evolved into four options which we discussed in a white paper made public in November and the public comment period was offered on those options.

Those options evolved into preimprovement activities discussed in white papers in February and May. The February white paper discussed all the different possible ways one could go about implementing each of those three improvement activities, just the whole spectrum, and the May 15th white paper presented what the working group believed would be the recommended approach for each of those three improvement activities.

We had a public comment period on the May 15th white paper so that would be the second public comment period we held throughout the development of our recommendations or responses to recommendation one.

That public comment period ended on August 15th. On slide four then what is different from when we were here with you last? Well, we did not prepare the

fourth white paper. There were a couple of reasons for that.

We were afraid having two white papers out with the same comment period open that we would get some confusion and we didn't have time to have a second public comment period.

And our decisions really haven't changed that much. So we did not prepare a fourth white paper as we said last time we were planning to do.

What we will - because you haven't seen that fourth white paper we will make sure that we draft the SECY paper and the enclosures that we provide to you prior to the October 18th meeting will be essentially the final product.

I'll make sure that that's a full complete package with all of the critical enclosures that you would need to review our recommendations.

So on improvement activity one what has changed? Well, before we said we would provide as part of developing our design basis extension category regulations that we would provide guidance to the staff on how to write these regulations and guidance on treatment requirements.

Since then, we've decided to go further than that and we will establish as a goal to develop a standard

set of treatment requirements and change processes and other things that are associated with regulations in the design basis extension category.

It's a goal because we know it will be hard to attain because as you also may remember the design basis extension category contains both requirements for adequate protection and those that are safety enhancement requirements.

But we're going to - so we will go forward and try to establish standard treatment requirements for those regulations.

If we're not successful we will at least have tried and will have much better guidance to the staff on appropriate treatment for the different regulations that go into the new category.

On improvement activity two, defense in depth, there's been a change in the relationship of the power reactor defense in depth policy statement from the RMRF, Risk Management Regulatory Framework, agency wide defense in depth policy statement and we are not going to link the delivery of the power reactor defense in depth policy statement to the schedule for the RMRF overall agency wide policy statement.

The reason - the decision for that is that we're - some folks believe that the power reactor defense

in depth policy statement can go - can go forward more quickly.

Even though it's more complicated it can go forward more quickly than trying to develop an agency wide defense in depth policy statement due to the disparate nature of the different regulated activities that we have.

So that was the change that we made since May 23rd on improvement activity two on defense in depth.

MEMBER STETKAR: Dick, you're going to go in more details on each of these items or -

MR. DUDLEY: Yes.

MEMBER STETKAR: Okay.

MR. DUDLEY: Again, I'm going to - these are just the changes that we made so that you know what we've changed and then we're going to go into - when we answer your individual questions is when we'll be going into detail on each of the three improvement activities. So you should - if you could just reserve your detailed questions for that opportunity. Okay.

And improvement activity three on the voluntary initiatives our positions on that continue to evolve but the one change that I can tell you about today is that we have - previously we had a recommendation that we should go back and review the IPE and the IPEEE

commitments to ensure that they were implemented and maintained. In the past, these were voluntary commitments.

We've decided to withdraw that particular recommendation, given that these were studies done 20 years ago. The plants have evolved significantly over time and even in response to Fukushima we're implementing many different activities that will increase safety at the facilities.

So the risk profiles of the plants today are substantially different than the risk profiles of the plants when the IPE and the IPEEE were accomplished.

And under Fukushima items on external events the IPE - IPEEE activities will be largely subsumed by the ongoing activities to review external events, the result of Fukushima.

So we are not recommending any longer that we go back and look at the actual licensing implementation of IPE and IPEEE commitments.

MEMBER SKILLMAN: Dick, before you go -

MR. DUDLEY: Sure.

MEMBER SKILLMAN: - beyond that point, what would you do to make sure that if there were substantive commitments that those were explored from the perspective of the you choosing to not to do anything

further because in the course of time and other events those have been overtaken, or one you assess today completing those long-term commitments are either too expensive or yield no real safety benefits. It seems like you might be throwing out the baby with the bath water.

MR. DUDLEY: We are not going to go back and look at those commitments. I think it largely has to do with the staff resources and the likelihood that we will find some significant issues.

As you know, the staff is quite busy right now with safety issues in response to Fukushima and we are not certain that if we went - I don't think we can spend the resources to go back and look for those - Mary has a question.

MS. DROUIN: Resources is part of it. But also since IPEs and IPEEEs never occurred there have been numerous, numerous activities that if those commitments, you know, had not been done and truly had a safety significance it would have shown - we feel it would have shown up, you know, through all the inspections that we do through the ROP program, through licensing mitigants and that's just a few of the activities where, you know, these commitments that would have meant a major safety significance if they had not been done. We feel that we

would have caught them. Steve, you want to -

MR. DUDLEY: Steve Dinsmore also has something to add.

MR. DINSMORE: Yeah. Hi, this is Steve Dinsmore from NRR, the PLA licensing branch. I guess, just to back up what Mary said a little bit, if there had been a significant finding during the IPEs, if there was one where you could get a pipe break or siphon the lake into the basin or something, if there was one of those that would have been - they would have dealt with it at the time - the real significant ones.

The ones that were left were things that they defined as vulnerabilities. Vulnerabilities has a fairly flexible definition.

So I guess one answer in addition to what Mary said was the real significant ones have been dealt with and the kind of was the remaining population that could have - might have been a good idea but we're not sure that it's worth it now to go back and revisit that population.

MEMBER SKILLMAN: Thank you. Fair enough. Thank you.

MR. DUDLEY: So on slide five now the status - what we're doing right now is we're completing the SECY paper and the main enclosure and all the other

enclosures.

We'll provide that to the ACRS in - it looks more like mid - late September now but in advance of your - the October 18th meeting. We'll have a subcommittee meeting on the 18th.

The full committee meeting is on - in November and we would like to have the ACRS letter around mid November if possible because we'd like to evaluate the comments and address the ACRS issues and make any necessary modifications to the SECY paper working with the recommendation on the steering committee.

We really need to do that before Thanksgiving because December 2nd is basically the first work day after Thanksgiving.

So we need to get that done before Thanksgiving. Otherwise, we're going to be very, very busy on the 2nd of December.

Now, on - that completes the status and the background of where we are and I'm moving now to slide seven and specifically addressing the issues or concerns that we took down from the committee when we were here last on May 23rd.

And what we're calling issue one was the concern expressed by the committee that our proposed reliance on the current regulatory processes to identify

and evaluate potential safety concerns to determine the need for new regulations that that was a reactive, not sufficiently proactive approach.

In addition to that, we were asked to explain why the existing processes that the staff uses to develop risk information were used in current regulatory analysis guidelines, why that's adequate and how could the current risk assessment processes be improved.

Mark Caruso is going to help me answer that question so he'll be making a presentation on those slides. So now on slide eight, the second issue that the committee raised is to describe what are the different acceptance criterias.

We described multiple levels of defense in depth of the power reactors on a previous slide 27 and we said you have to meet acceptance criteria for defense in depth at each of the various levels.

And so we are asking to provide more details on the various levels and how can you determine the acceptability of those levels of defense in depth without having enough data plant-specific PRA.

And Mary Drouin will present the answers to those - our responses to those concerns. On issue three for the voluntary initiatives improvement activity we

were asked to provide more details on - in the criteria that the staff would use to credit voluntary initiatives, when we would credit them in the base case for the regulatory analysis.

I believe that what we said is we had to make sure it was highly likely that voluntary initiatives would be implemented and maintained over time and that's kind of ambiguous so you asked us for more details on that - on those criteria.

You also asked us to describe the nature of the infrastructure of the guidance that we would provide - that we would be providing to oversee the type two voluntary initiatives in the future, and Dan Doyle will be presenting the answer to the committee's concerns on issue three.

So now I'm moving now to improvement activity one. This will be the detailed discussion of improvement activity one, and but first I want to kind of just summarize for everyone what - where we - what we recommended for improvement activity one.

We recommended in our May white paper that the agency develop a design basis extended category for beyond design basis requirements and that that category be developed generically, not on a plant specific basis and not requiring plant specific ERA.

We recommended that include requirements both for adequate protection and those requirements that are justified as safety enhancement requirements - cost-effective safety enhanced - cost-effective substantial safety enhancements which would be requirements that met the backfit rule criteria.

We also proposed that we establish detailed staff guidance for the issuance of the new design basis extension rules.

This would help the staff issue better regulations in the future than we have in the past because we would make sure that all those new regulations would include appropriate treatment requirements, appropriate change processes and would specify how one would go about updating the FSAR consistent with the new requirements in the design basis extension category.

It would include training requirements. We'd have to specify analysis methods and acceptance criteria and other - all the details that you really need to take care of whenever you issue a design basis extension rule.

CHAIR SCHULTZ: So Dick, is there - with regard to this one and I understand that it's important to have this detailed staff guidance available but do you envision that what would be developed here would be

different than current practice?

All of these elements need to be and are in the process for any modification of regulation or design basis.

MR. DUDLEY: Well, right now we're doing that very thing, that very same thing in our mitigating strategies and activities both in the rule making and perhaps in the orders.

And so we are trying to work with the staff right now who are trying to develop those treatment requirements and criteria for the ongoing Fukushima activities so that when we are done we can implement this approach to the best - as best as possible on the ongoing rule makings as well as on future rule makings.

So I don't think - what we really found is each - is each design - each beyond design basis rule that we wrote got a little bit better and I don't think the treatment guidance will be substantially different from the best guidance that we - that we've gotten to.

But over time our rules were not that consistent. I'm not sure if I answered your question.

CHAIR SCHULTZ: Well, let me ask it differently. Is what you're - you've got it written as if this is something new for the new design basis extension rules.

It would appear that this approach ought to be in place for everything, not just for the new design basis extension rule.

So if you're making improvements it's important that we establish that this is going to be a process that will be applied across the board.

MR. DUDLEY: And our thinking on that is a little different. What we propose to do for the new category is to grandfather the existing beyond design basis requirements without changing them so that would be the existing station blackout rule.

But it's largely going to be overtaken, I believe, by the mitigating strategies rule. So our hope is that for the existing regulations that are grandfathered and as we find that they are needed to be changed or improved in the future we will indeed make sure that any changes we make to those requirements, you know, meet this staff guidance in a forward looking manner.

CHAIR SCHULTZ: That's fine.

MR. DUDLEY: That's what we're - but for I guess like the ATWS rule where we figured out whatever the treatment was for that and I really don't know the details we worked that all out, and unless there's some reason in the future to go back and change the ATWS rule I don't think we plan to make any changes.

CHAIR SCHULTZ: That's fine. I didn't mean go back and revisit but I meant going forward.

MR. DUDLEY: Right.

CHAIR SCHULTZ: I'm just - was a little concerned that someone would look at new design basis extension rules and think that there's some - just the new category is something that this is going to be applied to.

MR. DUDLEY: Well, those are most of the rules we issued.

CHAIR SCHULTZ: I understand.

MR. DUDLEY: We don't want to add too many design basis safety grade requirements and most of the rules - most of the rule making we've been doing now is the hard decisions.

Do you take something out of the existing deterministic design basis and move it into this new category or take something that's unregulated or addressed by voluntary initiative and bring it into - make it become a regulatory requirement and add it to the category.

So I think this is the busy category for rule making at this particular time.

MEMBER CORRADINI: I didn't understand - I'm sorry that I'm - I didn't understand your last

comment. So you are going through that sort of thinking process of what things are DBAs that should be moved into this we'll call it the grey region.

There's the black region, the white region and the grey region. You're inventing a grey region.

You have historical things like ATWS and the station blackout that sit in that. Are you actually looking at things in the DBAs that should be moved into this?

MR. DUDLEY: We are not going to do that. By setting up this new category it may get, I think, easier to do that but we would still - it's part of recommendation one we're not doing that.

Other rule makings like the risk informed ECCS requirement, that's what we're doing. But recommendation one does not propose a thorough review of the design basis on accidents and requirements to determine what can be moved out of that category and into the design basis extension category and then if we, you know, reduce treatment requirements.

MEMBER CORRADINI: So is that a resource issue that you can't do it?

MR. DUDLEY: I think we've been trying to do that all along. Ever since SECY 98-300 I mean we've been trying to find design basis requirements that we

could - that we could or should risk inform and we identified a number of them, 50-44 and others. Mark Caruso, yes?

MR. CARUSO: Yeah. I just want to make a comment in response to Dr. Corradini's question. I'm Mark Caruso of the staff.

I think - well, with respect to new reactors and advanced reactors this is actually happening because they're in the design stages and we're saying, you know, some of these EA-50s are going to supply and distribute beyond the design basis rule. So we're entertain that in our reviews.

For operating reactors I believe we've, you know, acknowledged in the paper that if some particular utility or some work utilities want to propose something like this that the - you know, the staff could entertain that and would entertain that and would have to demonstrate through, you know, design change and risk analysis. They would need to propose the justification for that.

So we're not saying that this is not something that we wouldn't do. We're just saying that from the perspective of the NRC and the NRC's mission this is not a - this is not something that's at the top of our list.

We're saying we're not going to offer up resources to affirmatively go after them.

MEMBER ARMIJO: So you would not take the initiative? The NRC wouldn't take the initiative -

MR. DUDLEY: Responsive.

MEMBER ARMIJO: - but that the licensee could and you would be responsive to that.

MR. DUDLEY: And by setting up a new category I believe it could facilitate - make it a little easier for licensees to make those requests because we would have better treatment, the guidance for how that would be treated if it were moved.

MEMBER CORRADINI: So I have another question but these are all relatively novice questions. So when is the time that we can ask how this fits into the other initiative that was initiated by the commissioners, Commissioner Apostolakis' study on how this fits together?

MR. DUDLEY: He has several initiatives but -

MEMBER CORRADINI: Well, I'm thinking the one that was delivered essentially just about the same time when all this was happening about NTTF one for recommendation one, the risk informed framework.

MR. DUDLEY: Okay. So risk management

regulatory framework.

MEMBER CORRADINI: If this is the right time to do it, that's fine. Otherwise, we can wait. I'm just trying to figure out how these things fit together or do they fit together?

MR. DUDLEY: Some of that's being relooked at by management.

MEMBER CORRADINI: Can we - you can tell me when it's time.

MEMBER STETKAR: Let me ask it in a more pointed - I'll bring it up again because I brought it up in May. You're proposing continuing business as usual.

You're creating a new box, and when things happen you're going to toss them in that box. It's a reactionary event-driven regulatory process.

That's what you're proposing. I don't care how you - how you cast it in terms, and I would hope - I would hope that the SECY paper that we received with background justifications for your positions very, very clearly addresses that notion and how it is responsive to the NTTF recommendation - one, observations about the shortcomings of the way that we've been doing business for the last 35 years or so and how it addresses the issues that Dr. Corradini brought up that were raised by the risk management regulatory framework task force.

Because that sort of looking forward - plant-specific, not generic, not being reactionary to events, try to look on a plant specific basis for - I don't know if you want to call them vulnerabilities but issues that might allow a relaxation from some of - even some of the things you've mentioned already - ATWS for a particular plant design and might add some other things that we haven't thought about yet because they haven't happened, and then suddenly like ATWS and station blackout get excited about those when they happen.

So I just hope and I just want to get it on the record - I just hope that the next thing that we see in writing very clearly addresses that topic about how this - your recommendations are responsive or if you've decided to be unresponsive why.

MR. DUDLEY: The draft SECY paper that we prepared specifically addresses a proposed - a proposed categorization approach that we use plant specific PRAs and develop essentially a plant specific licensing basis.

That is one of the three approaches that's analyzed in some detail.

MEMBER STETKAR: Good. Good. I'll look forward to see that. Good.

MR. DUDLEY: Okay.

MR. BAHADUR: Shana?

MS. HELTON: This is Shana Helton. I just wanted to add that - to your point that we should be addressing anywhere that the staff recommendation presented in December at first from the NTTF, the draft SECY paper right now has a table and several areas of discussion that directly points to where we are addressing the NTTF report and or differing from it and there's extensive discussion as to options that were considered and evaluated and why.

So I hope that when we see the paper that'll satisfy your -

MEMBER STETKAR: Yeah. I mean, I know that the draft paper that we saw from May has that table but it's pretty brief. I mean, there's a lot of bullets in the table but not a lot of explanatory material.

MR. CARUSO: Mark Caruso, staff. In addition, I think we plan to discuss some of the reasons why we think the current processes NRC uses to eye things, if you will, and that we're comfortable with it.

So you'll probably get - you should hear some of that today and maybe you all have a sense of whether or not you'll be satisfied with what's in the paper when it comes.

CHAIR SCHULTZ: Thanks.

MR. DUDLEY: So our proposed design basis extension category would apply to a current and future licensees and applicants and it can be implemented on the ongoing majority that I think can be substantially implemented on the ongoing Fukushima rule makings and the approach because it's simplified, it's low cost for the NRC and low cost for licensees also.

MEMBER CORRADINI: What's your last bullet point is, is that this is the cheapest way to go? Is that what I just heard you say?

MR. DUDLEY: I'm saying that it is a low cost approach. It turns out it is - other than the status quo it is a - it's the lowest cost option that -

MEMBER CORRADINI: From an effort to evaluate standpoint? I'm just thinking about NRC.

MR. DUDLEY: Cost was not the single evaluation, you know, criterion we used. Just making the statement that it is low cost.

MS. HELTON: Dick, this is Shana again. One thing that the working group evaluated while we were looking at different options for going forward with recommendation one is would the proposal in the SECY paper actually pass the fact that just in 10 CFR 50.109 so when we're talking about cost for the NRC and licensees, you know, that was playing into the

consideration.

We wanted to try to present a viable path forward given our regulatory constraints and pick a high value approach.

MEMBER CORRADINI: And again, I've not been following this as closely as other members of the committee so I could be like three subcommittee meetings behind on this.

But I guess what is concerning - what concerns me is, is this a framework that will not be used and we're just simply putting things that we've already determined into the gray box?

In other words, was station blackout the new vented filter containment rule, all these things, we're just simply inventing a, excuse my English, inventing a box, sticking thing in it we already know and we're not going to look at it ever again or are actually going to do something different.

MEMBER STETKAR: 50.69 worked really well, didn't it?

MEMBER CORRADINI: I'm just trying to understand - I understand - I think I understand what you're suggesting. I'm just trying to understand is it anything different or is it just removing things around and recategorizing what's already being done.

MR. DUDLEY: We're putting the existing beyond design basis requirements into the category and all new beyond design basis requirements will be written and implemented consistent with the guidance for the requirements in any new category.

All the Fukushima rule makings will fit in this category. A majority of the rule making that we do fits in this category so it will not - it will be used. Okay. On slide 11 now -

MEMBER BROWN: Sorry to be obtuse here. I was looking back at the white paper from May and when you talk about existing beyond design basis requirements you listed I think it's five items if I count them - ATWS, combustible gas control, loss of large plant areas, aircraft assessment and SBO. Okay. So I think that was five.

Now, with your - trying to look at this forward versus retrospective aspect that you talked about on the next page.

So your new design basis extension or beyond design basis regulations, whatever rules you implement, you don't intend to go back and look at those five explicitly for all the existing plants. They are in place.

MR. DUDLEY: That's correct.

MEMBER BROWN: Okay. It would be for some new beyond design basis consideration?

MR. DUDLEY: That's correct.

MEMBER BROWN: Of which we have not really identified a specific item or type of event yet.

MR. DUDLEY: All the Fukushima rule makings would fit into the category.

MEMBER BROWN: Yeah, but does that mean like an earthquake that's outside the bounds because we don't - is that what you're thinking of in those circumstances that causes something else to occur, a consequent - one things happens which causes -

MR. DUDLEY: So would a storm would be a good -

MEMBER BROWN: A what? A solar -

MR. DUDLEY: A solar storm would be a good example. But Mark, you had a -

MR. CARUSO: Yeah, Mark Caruso. Yeah. The answer is yes. The answer is that regular - we're saying we should - we should stick with the current processes the NRC uses to flush out generic issues that are - that involve beyond design basis, you know, concerns - shut down risk, brighter than beyond design basis seismic.

We have processes in place that identify

things, potential things, and get their processes from the other ADM and that sometimes we decide we should do something about it.

We should make the requirements in which case if we want to make the requirement that - to address that issue that involve a similar action concerning the design basis concerned we would - we would do it either in accordance with this guidance that we are proposing so that we do it in a way that is better than we did before and this isn't anything different than we've done before and the category is really just - it's always been there. It's not really a new category.

So the difference is is that in constructing requirements to address these things that we try to do it in an improved way like we - and we are going back and we are trying to do mitigating strategies in an improved way. That was a added protection rule that, you know, we've all had a number of concerns about the treatment of the equipment that's being used for that.

We identified lessons learned from Fukushima for station blackout and so the station blackout is on the table to be improved and we're saying we would use this process too.

So I think the two that we have identified - old ones that we have identified from experience that

have issues we're fixing and we have to use this process and in the future we would do the same things future stuff that came up.

But we're not - we are saying we're not going to be affirmatively active and go out and do something to seek out new generic issues and some new process to try to flush out new generic issues that involve beyond design basis or similar actions.

MEMBER CORRADINI: You are or not?

MR. CARUSO: We are not.

MEMBER CORRADINI: So can I follow that question up with have you at least gone to research for a user need to at least think through how one might do that or a process or a set of subjects?

It would seem to me that if you can't do it within regulation you'll issue - ask research to start thinking about this so you're proactive in this regard.

MR. CARUSO: Again, this is something - we have a process in management directive 6.3, a whole generic issue process that identifies how events are identified. It has a safety risk assessment component to it. I think - I didn't - I don't think I understood your question.

MEMBER CORRADINI: Well, I'm just trying to understand once you create this process or protocol how

you actually investigate - I'm back to the forward thinking versus - hindsight versus foresight.

That is, looking forward and saying what sorts of things should one be concerned about that fit here, whether they flow from the black side or the white side into the grey side. And so I would expect that would be a user need that research could help you with.

MR. CARUSO: I think we feel like we have processes in place in terms of experience, in terms of the inspection programs, the RTNSS determination process which are risk informed that we don't really need any new process to identify things.

So we haven't been - we haven't been missing the generic issues and that the agency has - the agency has these processes in place.

They've been there for ages and one could argue is our operating experience, our other ASP, accident sequence precursor program, is that - are those programs strong enough and I don't believe we have identified any reason to think that that needs to be fixed.

MEMBER RAY: Okay. Aren't you saying that if we had - if what we do and have done for eons or ages or whatever you said that existed and been applicable to Fukushima that - prior to the event that occurred that

they would have caused something to be done to prevent the accident occurring. Isn't that what you're saying?

MR. CARUSO: That's the goal of the programs we have. That's the goal of the accident sequence precursor program. That's the goal of operating experience.

MEMBER RAY: Yeah, but is that a yes or a no?

MR. CARUSO: Well, I can't - I don't have a crystal ball and I'm not going to go back with hindsight and say the NRC -

MEMBER RAY: Well, shouldn't someone - shouldn't - if you're going to make the statement you just made which is we've had programs in place and they've - they're completely satisfactory in terms of achieving the aim of avoiding - I mean, isn't this all about trying to avoid a repetition of what happened?

MR. CARUSO: It always has been. Now, what we're talking about is not -

MEMBER RAY: All right. Then can't you - can't you just simply say yes? If our programs that you're making reference to had applied to Fukushima then something that you say we would do would have - would have been done before the event. I mean, isn't that a litmus of some kind that has to be applied here?

MR. CARUSO: I can't go there to what would have happened in this country than it did in Japan. I think there's a much higher likelihood personally but -

MEMBER RAY: All right. That's the piece -

MR. CARUSO: - it would have been avoided and the reason is -

MEMBER RAY: That's at least going in the direction -

MR. CARUSO: The reason is not because we had a PRA. The reason is because we put the mitigating strategies in place.

Now, you can go back and say well, wait a minute - yeah, but would they have worked during this event and would they have gotten flooded out maybe because they weren't protected right.

MEMBER RAY: No, I'm talking about five years ago some action being initiated because of the programs that we have here in this country, had they existed in Japan something would have been done to then prevent what occurred.

MR. CARUSO: Yeah.

MEMBER RAY: You think that would have been the case?

MR. CARUSO: I think - I think it's highly

likely something would have either, perhaps a requirement, perhaps something that brought the utility to the table to put something in place, which is not quite as good but it's something. But -

MEMBER RAY: Okay.

MR. CARUSO: - as I said we, you know, I mean, we - I think we are more proactive than -

MEMBER RAY: I'm not - I'm not disputing your conclusion. I'm trying to make it clear that I - this entire exercise that we're going through here that repeatedly references Fukushima in every way you can think of at some point there has to be a test that says well, if we're not going to change anything it's because what we already have would have avoided Fukushima.

MR. DUDLEY: Generic issue 199 is beyond design basis certified, right, and if that were dealt with by Japan ten years ago wouldn't they have extrapolated that to beyond design basis tsunamis also and it's entirely possible that that could indeed have caused them to focus more aggressively. Some plants did, I believe, and others didn't.

MEMBER RAY: Well, fine. But that's my point. I would think, given what you just said the answer would be yes.

MR. DUDLEY: Okay. Thank you. Yes.

MEMBER RAY: Not anything - but then once you say yes to that then you have to then ask yourself well, what are we doing here then.

MR. DUDLEY: We're writing -

MR. BAHADUR: If you look at the - if they look at the charter for condition one it just asked the staff members to come up with a coherent and logical framework.

So you need that intermediate. It is not any void in the framework itself. There's lot of procedure that is scattered all over the place and as you are seeing that the task staff had been able to develop those regulations in that gray area, you know, that you're talking about.

But there was no specific treatment requirement. There was no procedures, and what this working group is doing is trying to put a governancy and logic in the framework.

MEMBER RAY: And all of that is very - you can't take exception to what you're saying. But trying to translate it into something meaningful in terms of the premise that I gave which is are we trying to make it so that an event such as happened in Fukushima is there a delta in our effectiveness as a regulator that we'll achieve here which will make that less likely to occur.

MS. HELTON: I'd like to address this question. This is Shana Helton again and I would just like to note that I think the commission has a similar question about what is the difference between the U.S. and the Japanese regulatory programs.

There's a separate effort - an entirely separate group of people that are looking into the answer to that question, you know, and I'd just like to reemphasize what Sher said about the scope of what this group has been tasked to do.

We're not under recommendation one doing a comparison of U.S. and Japanese regulatory programs. We're taking a look at the NRC's regulatory framework to see if there's any potential improvements that we can make to improve our own decision making methods.

MEMBER RAY: Well, but you're reaching a judgment that is not necessary to do various things that might be done because they're not needed and I think that's fine.

But that judgment - I mean, Mary referred some time ago to IPEEE. I did those. You know, if I'd have been sitting at Fukushima and done my IPEEE it would have been fine and I don't see anything that you're doing here that's going to change that outcome.

And it's just maybe it's because I can't

understand and I'm trying my best to do so what the effect of all of these enhancements in process are. But that's where I am.

I'm trying to figure out are we already satisfied, which is sounds like we are, that everything's fine or are we making a change that'll be meaningful and make things fine? Which is it?

And if so, is the change - I realize we're - I'm taking a very broad statement here and you're telling me well, we're just looking at a little narrow assignment we have.

But that's at the end of the day what I think is relevant. What is the effect of what we're doing?

Yes, if it'll make us more efficient perhaps and eliminate some of the discontinuities that exist between requirements that have been adopted over time whether it's SBO or whatever it may be and make it more coherent.

But is that really going to have the effect that I ask, which is that make it substantially less likely that we would have a Fukushima event here or do we feel like it's not likely anyway? So in other words, we're not trying to achieve a change.

MR. CARUSO: Let me try -

MEMBER RAY: I'll stop there.

MR. CARUSO: Let me try one more - one more time. Mark Caruso, the staff. I think, you know, one of the issues that did come out of Fukushima was the idea that well, the United States had their own strategies in place.

They had equipment that could have been put to use that was beyond, you know, the diesels and all the regular stuff that was - that would have, you know, perhaps mitigated the event.

I believe that was - that was discussed and then it was discussed with Congress right after that. But then we looked hard at that. People started to say well, wait a minute. You know, what are the requirements there and we made that available during this particular event given the conditions.

And so I think one of the - you know, what came - what issue that came out of that was is that well, we made that - when we made that - when we focused on mitigating strategies it was merely focused on very particular initiating events - initiating events involving terrorist activity and not anything else.

And so the solution that came down was focused on that too and things were said well, we don't need that because it's just for this activity. And so it doesn't need to be any - it doesn't need to be this,

it doesn't need to be that.

It's just, you know, readily available stuff that might be good and so I think the recognition was is that, you know, when we do make regulations and we do see issues we should think broader in terms of if we're going to put something in place it shouldn't just be focused on one narrow issue.

I think that was a lesson we learned and I think that's why the mitigating strategies rule is being, you know, put in place to try and fix some of that.

And we're trying to say we see it as a bigger thing so that when - the next time some issue comes along we don't try and address it in a tunnel, - that we have the strategy in place that says we need to think about these other things - how is it going to affect this, how is it going to affect that, what's going to be the trigger so that we improve there.

So I believe that that's an improvement. I believe it's related to our experience from Fukushima and I think it's related to a very important lesson that we learned from Fukushima.

MEMBER BLEY: Some of -

MR. BAHADUR: The issue that was raised by - I'm sorry. I didn't mean to interrupt.

MEMBER BLEY: Something that's kind of

bothered me here and much of what Mark said there I kind of liked hearing but going back to Harold's statement, recommendation one is not a narrow issue.

Recommendation one is probably the broadest issue that's on the table, and trying to divorce it in any way from the RMRF from looking from the efforts to look back and see how we would have performed comparative to Japanese system really is going away from what recommendation one is all about.

And I know you have time schedules and things that are driving you but if we don't integrate those things here I think we're really missing the boat.

MEMBER STETKAR: And I'll just - I echo that, and I - you know, I listened to what you're saying, what we're hearing from different parts of the room. And I come back to the fact that you say well, of course, the Fukushima-related issues will be in this new box that you create. Obviously, that was in the new box.

I'm saying that's business as usual and on March 10th, 2011, we would have said all of our processes are wonderful and two and a half years later we're saying oh my God, we really need to go look at these things because yeah, we didn't quite think through the mitigating strategies - would they apply to these types of events that we hadn't thought about.

Well, now we thought about them - we're going to throw them in the box. What's the next one? We're going to wait until it happens. We're going to say oh, we didn't think about all of that stuff clearly enough the last time.

We've now had another revelation. We had a revelation after TMI. We had another revelation - we always have these revelations about things that we've not thought about clearly enough.

And as Dennis mentioned, this is an opportunity to put into place a framework that says you need to think about those things in a forward looking manner. And I'll just say that because it's - I keep hearing well, this happened.

It echoes what Harold said. March 10th, 2011, we could have had this theoretical discussion that we're having today and everybody would have said yes, our process works.

We've identified generic issues. We have licensing bases. We have design bases. We have regulatory guidance. Everything is working.

We're not vulnerable to anything. And then something happens and we decide that oh, yes, we are vulnerable because we had focused too much on one particular type of accident scenario in putting into

place mitigating strategies.

MR. CARUSO: Can I make one more comment? I can't help myself. Mark Caruso. You know, we're basically here - we're talking about operating reactors.

You know, in new reactors we do have - we are looking at these things through design. But so the question really here is about what operating reactors are acceptable.

MEMBER STETKAR: We're talking about a framework of thinking about the scope of accidents and what is in the design basis, what is adequate protection, what is from a risk perspective perhaps an acceptable level of risk and what do we do about something in between.

So I don't think it's a new reactor versus old operating reactor issue. That, again, is - it's too easy to -

MR. CARUSO: I don't think it either. I'm just saying we - at least for part of it we are - we know we're not doing the level that you're talking about.

CHAIR SCHULTZ: But the previous slide indicates that this is to be applied or could be applied both to operating reactors and going forward as well, which is I think what we would all like to see when we're talking about regulatory process.

MEMBER STETKAR: Well, but I think some of that looking forward in terms of - I've forgotten the jargon but is that you wouldn't go back and look at potential vulnerabilities of operating plants to move things, that you just wait going forward until those things crop up and then see how they apply to the operating plants.

That's my sense in terms of the draft paper of this - what do you call, forward fitting or -

MR. DUDLEY: The approach that, you know, I believe that you are advocating -

MEMBER STETKAR: But that would be for new reactors or old reactors or anything. Until something comes up you're not going to go back and actively look for vulnerabilities.

MR. DUDLEY: When the working group evaluated three different categorization approaches and approach - what we call approach number one is the plant specific - basically a plant specific licensing basis where we would require licensees to perform or upgrade all their plant specific PRAs to meet the existing - the current approved standards and we evaluated - this is on backup slide 49 I believe that's in your package - and we looked at that approach and we agree that it could increase safety.

But we are uncertain as to the level of the increase in safety that one would get at that - with that approach.

Yes, it would - it could identify some plant specific risk outliers but it was the judgment of the working group that the - this approach would be unlikely to result in major safety benefits.

A PRA is not going to identify unforseen concerns that aren't modeled in the PRA and our belief is that the ongoing Fukushima efforts that we're doing using our current regulatory framework none of - none of those efforts were in place at the time the Near Term Task Force made this recommendation.

And so we're really looking at a different environment than the Near Term Task Force looked at when it made recommendation one. It said do recommendation one first to make all these other things easier. But we didn't do that.

The commission chose to do it a different way. And so having chosen to use our existing regulatory framework to make substantial safety improvements in our plans it was the judgment of this working group that the ongoing Fukushima efforts are going to further reduce the overall risk and change the risk profiles of the facilities to the extent that the safety benefits of

looking for these unforeseen activities are reduced.

We made that judgment and as we discussed before if we - if we went back and we found some new event or activity it's still likely that the mitigating strategies equipment that we're putting on site will at least partially mitigate that unforeseen activity. So that was our judgment on this plant specific approach with respect to safety.

CHAIR SCHULTZ: Dick, is the paper going to develop that thought in the detail, at least in the detail and perhaps further than you describe? Because I think it's a very important one.

Recommendation one came from I think in part the realization of the NTTF that okay, we went - we did our review post Fukushima real quickly. This was weeks in, and we determined that our plants are safe in comparison to the event at Fukushima.

But the reasons for that were partly or largely due depending on your perspective to elements that came into place because of an event, a reactive approach, and put into place because of a determination that we were not adequately protected.

So changes were implemented to the plants that put into place the equipment that gave us the confidence that our plants were safe.

So and therefore the moving forward position was we ought to have in place a process that allows us to make those appropriate improvements without being reactive in a proactive way.

I think that's somewhat - something of what you described that now in position post Fukushima with everything that has been ongoing we have - that's a clear overarching lesson that we have learned and we're trying to implement with this process - a program that will capture that going forward. But -

MR. MIZUNO: Geary Mizuno, Office of the General Counsel. I'm part of the working group.

I think fundamentally what I see here is the ACRS conceiving of the NTTF recommendation one as focused on process to identify and to deal with unforeseen or unexpected issues or things that are out there that we have not yet identified, okay. You want a better process for doing that.

You think that the NTTF recommendation one was focused on that and that we are - the staff's working group is missing the boat by not focusing on that.

I think, speaking from my perspective and I can't speak for the rest of the working group members, I look at NTTF recommendation one as not focused on that.

In fact, if you look at their recommendation

their - the portion of the recommendation that talks about looking at IPE and IPEEE results is not really the primary focus of their thing.

It's a sub recommendation under their four main recommendations and their overall recommendation.

And so we - as a working group we started off by looking at the way that the NTTF focused the recommendation and looked at their discussion that led to their recommendation.

And one we looked at and one we finally decided was that they really weren't concerned about the safety process that we engage in on a day to day basis in identifying and trying to evaluate the safety significance of information, okay, existing information or gathering up the information so that we're proactive, okay.

I don't think that the NTT - I'm sorry - yeah, the NTTF really was focusing on that or found any problems with that. What they were really focusing on is saying okay, now we have something - we have an issue.

We think that there's a safety impact but now we have a "regulatory framework" that we have to process this through in order to justify adding it and then we have to explain it to both our internal stakeholders as well as our external stakeholders as to

how does it fit in with our existing regulatory practices and our requirements.

If we have a new event like coronal mass ejections, okay, how do we actually - and we say that yes, this is a safety issue and we think we need to deal with it in some fashion, okay, how are you going to deal with it.

Are we going to call this a "design basis event" because that's the terminology that were used? Is this beyond design basis?

How can we justify doing something that is beyond design basis given our existing terminology and our practices, okay, and how do you go about then if you decide to deal with this processing it through things like backfit rule, regulatory analysis?

How do you tell a licensee, okay, for this particular event we want to control it using this change process. You must have prior NRC review and approval.

With respect to the technical aspect we want you to use an Appendix B kind of design process to evaluate whether you're acceptably addressing power reductions or inability of I&C systems to function as a result of a CME.

We want you to use safety grade equipment or conversely justify why even though this is a - would

have a very significant effect on our capability to maintain core cooling we're going to allow commercial grade equipment for this event.

It's all these things. Try to run an event through and fit it in with our existing infrastructure because it was cobbled together, a patchwork if you want to call it, of different rationales and things that I think that that's what the NTTF was focusing on.

There were - as they we're going through all the individual recommendations, two through whatever there were, 16 - okay, they had to go through the same process that the commission goes through and the staff goes through every time that they get new information and try and see do we need to do something more.

And we - I look at NTTF recommendation one as saying you know what, we have a lot of problems in trying to process that kind of information and come up with what we would say is the regulatory solution and make the right decisions there.

This is not a safety thing primarily. This is a way of trying to be more efficient and being able to explain ourselves internally within the staff that has to implement the rule as well as to our external stakeholders - Congress, the president, utilities, designers, the general public, people around the plant.

So from our perspective, given what we thought was the focus of NTTF recommendation one, our recommendations were trying to get us to a state where we can better deal with issues as they come up.

Do them more efficiently, put them into a box, understand how we're going to deal with them and then explain ourselves to all our stakeholders this is why we did this - this is the - this is the conceptual system, if you want to call it, of dealing with things generally.

MEMBER STETKAR: I like a lot of what you say. I think you're right that there are a lot of different interpretations about the intent of that recommendation.

I think part of it and I'll bring up explicit things because I'm a numbers guy, one of the issues is, for example, we have guidance that says we should design a plant to a ten to the minus seven per year once in 10 million-year tornado or hurricane, wind event. So I have designers out there and that's guidance.

We have guidance that says we need to design a plant to some safe shutdown earthquake which is generally interpreted - I'm not sure frequency what it is today but it's sort of in the ten to the minus four to ten to the minus five range once every ten to 100,000 years, not once in every 10 million years.

We have guidance that - no, we don't have guidance that has - says anything about floods in terms of frequency. Sort of this probable maximum precipitation notion that some people say might be a once in a 100-year event or it might be once in a 1,000 year. Nobody ever quantifies it.

So we're not quite sure what that means. We don't understand necessarily what happens if I go back to the seismic versus wind. What happens to a ten to the minus six earthquake?

It's a factor of ten more likely than that ten to the minus seven high wind that we're designing to but it's beyond the design basis of the plant, well beyond the design basis.

We don't know how to deal with it. Do the mitigating strategies take into account that ten to the minus six earthquake? I don't know because I don't know how they're protected.

And that's some of this notion of that intermediate, whatever you want to call it, box. So they're linked in that sense because our current regulations are not consistent in terms of addressing different hazards, different threats, whatever you want to call them, in terms of their effect on whether you want to make it a plant specific basis or whether you want to

make it a generic industry basis.

So they are - I see them linked that way -

MR. MIZUNO: Yes. I would definitely agree with you there.

MEMBER STETKAR: - in terms of what the NTTF was looking for.

MR. MIZUNO: I would say I would definitely agree with you that we - the NRC currently has no consistent concept of what is a "design basis" versus beyond design basis nor do we have a concept that explains how these concepts of design basis versus beyond design basis relate to things like adequate protection.

MEMBER STETKAR: Right.

MR. MIZUNO: Or anything, and again, that is - it's that lack of conceptual connectiveness, if you want to call it that, that I think the NTTF was trying to deal with.

We're trying to deal with it but at the same - and we're trying to provide some kind of structure but recognizing that the hardest question is the question what is adequate for safety and within our regulatory purview versus what is not.

Perhaps that's probably the most important issue. We have guidance out there and we felt that since NTTF didn't directly recommend that we actually go and

develop these kinds of thresholds that we could also not do with that.

You know, let's try at least get a framework and a concept in place and we can deal with the issue of okay, do we need to have consistency in terms of these kinds of thresholds. What is the - what is the threshold between adequate protection for - versus everything else and what is the threshold between everything else versus everything that we don't need to have any regulatory purview over. I mean, those are two basic thresholds.

You are correct. We are not dealing with that and we have some reasons for that. We could explore that if you wanted to.

MEMBER STETKAR: Well, I'm hoping that the SECY paper will.

MEMBER CORRADINI: Will the SECY explain what you just admitted?

MR. MIZUNO: The SECY paper does discuss those things you can't get away from them. I mean, we have some discussion of that.

So it will be in there. I'm not - I have to back to Dick and see do we actually have a discussion that explains why we're not actually addressing - trying to define the thresholds. I thought we had started to do that but we -

MR. DUDLEY: I don't think it's in detail. Why we didn't go back and try to get consistent initiating event frequencies across all -

MEMBER STETKAR: And I'm not finding - I think that's well beyond, you know, detail. I just tend to bring up numbers because it's easier for me to illustrate issues when I throw numbers at them.

I think from my perspective, certainly at this level, I don't see it's your role - at least personally I don't see it's your role to establish those straw man values. I mean, that's well beyond something that you can ask.

MR. DUDLEY: The other recommendations on seismic and flooding and then there's the Appropriations Act requirements to go back and look at all other external events and we had pretty much relied on those activities as addressing this issue.

MEMBER STETKAR: On the other hand, I'll let you off the hook a little bit. But on the other hand, I think it is part of your purview to say here's the framework that we're proposing and how that framework would handle that issue.

MR. DUDLEY: So the design basis extension category might give you some guidance for treatment if you had to have a beyond design additional equipment for

beyond design basis earthquakes. I mean, or additional protection for beyond design basis floods and you could even have that rule as a design extension rule at a design basis level and a design basis extension level with different treatment requirements.

I think it facilitates it. If you would like - I mean, I can finish -

MEMBER BROWN: I wanted to make one observation based on your - Harold's and John's and the other stuff. I'm not a numbers guy like PRA - somewhat simple man.

I mean, I've looked at the Fukushima thing and I think my personal opinion is we probably looked at things a little bit differently. I mean, we had a design basis earthquake - a flood design basis earthquake which they passed.

They created an above design basis tsunami which created physical damage. Took out power which then created the demand on the on-site power system which was then escalated into a loss of on-site power, the SBO, which then loss - resulted in a loss of large areas which then resulted in a loss of combustible gas control which blew the roof off of a building. All these things, the whole series of things.

Now, that's beyond anybody's comprehension

that you would have that series of things, way beyond our single event.

But yet as I've read the papers and the various things we've been doing we've been focusing on how do we fix the SBO thing. How do we improve that and make it better or how do we improve the loss of the large area of these things or how do we deal with combustible gas leaks better but not in the framework of things outside our - in advance or proactively or if there's circumstances in the U.S. where we could have a series of events that are beyond our comprehension which cause these things and what stops could we put in place that prevent the sequence from going on.

I mean, an example - a simple example in my mind is the idea of dams in certain areas for certain plants where you could have an above design basis earthquake which damages a dam which then brings the flood in and what is the - how do we stop that - how do we backstop that so that we don't go into the same progression of plant damage, having roofs being built off multi site plants.

This was - if my memory's correct there were four plants virtually side by side with interconnected systems. Is it a good idea to have common interconnected systems between multiple - should plants be separated on

a greater design?

That's an event - that's a forward thinking type basis proactively in terms of how we deal with multiple sites, multiple plant - multiple plant sites in the future. I mean, what we have today is what we have but how do we backstop that.

That's how I would have been trying to think about this as opposed to a somewhat more esoteric worrying about a solar flare rather than a - although that's a new event that you might have to deal with which was - maybe ought to be on the table.

But we've missed the boat relative to how do we deal with the non-isolated event which we are protecting ourselves from - the earthquake, the tsunami, the tornado, the individual flood. So that's how I have been viewing this thing.

MR. DUDLEY: All I can say is that the commission in its SRM directed the staff to go forward and pursue recommendation one independently of all the other Fukushima activities and that's what we did.

We're relying on those folks who are doing those other activities for substantial safety improvements and for addressing just the issue you raised.

MEMBER BROWN: But they're not addressing

the sequence type issues. They're addressing the individual events.

MEMBER ARMIJO: Charlie, you know, the hazard was underestimated at Fukushima. But if the hazard had been estimated properly or correctly, all right, don't you think -

MEMBER BROWN: But that's beyond the - that's beyond the design basis.

MEMBER ARMIJO: Let me finish. Let me finish. If a tsunami of the magnitude that actually occurred had been predicted all of the consequences that you talk about would have been predictable. The diesels would have flooded.

They knew where the diesels were. They were in the basements. They would have flooded. So all those consequences would have been very predictable.

The root cause was that the hazard was way underestimated.

MEMBER BROWN: It was beyond design basis.

MEMBER ARMIJO: And the tools that we have would have said gee, if it's going to be a 40-foot tsunami we've got so many things that will go wrong we'll be out of - we'll be out of business.

So there's - these weren't independent. These are consequences of the initial thing and we

underestimated the hazard and I think that's what we're -

MEMBER BROWN: But it would be beyond design basis.

MEMBER ARMIJO: Of course.

MEMBER BROWN: So each one of those was beyond - and that's what we're talking about - beyond design basis events or extensions and how do those - can they be stacked or not stacked.

I'll stop right there. We got to get on with the presentation. But that was just my simpleminded thought process of how I thought we should be looking towards the future in terms of how we site plants, what hazards we do, what do we backstop and are there sequences because of a location that could cause multiple things to happen, which we don't think about. That's - I'll circle again. So Steve, I'm sorry that -

CHAIR SCHULTZ: No, that's okay. I hope we are thinking about it.

MEMBER ARMIJO: I think we do think about it.

MEMBER BROWN: I don't think we are but that's a personal opinion.

CHAIR SCHULTZ: Back to the presentation.

MEMBER ARMIJO: We digressed.

MR. DUDLEY: But I don't mind the -

CHAIR SCHULTZ: Appreciate the elaborations. It's very helpful.

MR. DUDLEY: Let's see.

CHAIR SCHULTZ: We're on 11.

MR. DUDLEY: We're on 11. Okay. Thank you. So, again, we propose to continue to use the existing criteria to identify the issues and concerns that we would evaluate whether or not we would pursue rule making.

This includes the generic issues process, the reactor oversight programs, the reactor operating experience program and probably various public petition processes.

We would use those processes to identify issues that we would evaluate for rule making. We would continue to evaluate the need for rule making using the existing criteria and there are three different criteria really.

One is adequate protection, and we're not intending to make new changes to the definition or the determination by the commission of the level of adequate protection.

And the other bases for undertaking rule making are safety enhancements. Those safety

enhancements are backfit are subject to the significant safety improvement criterion and if there's a threshold established by the safety goal and we would continue to use those criteria under the current backfit rule.

But for new regulations in a forward looking manner that are not defined as backfits under our current regulations the criterion for doing rule making which is cost effective - is this a cost effective - those are the current criteria and we are proposing that staff - that we retain existing criteria for doing those rule makings.

So let's see. What we're trying to do under issue one is to give a little more detail on the definition - on the existing processes that we use to evaluate issues as candidates for rule making. And so now it looks like 13.

We have the generic issue evaluation process that's described in management directive 6.4 and I'll have some more detail on that on another slide.

Reactor oversight process in many cases - in some cases may result in inspectors raising issues that get fed back to the NRC to the headquarters by the task interface agreement process and that causes us to consider things that we might need to do either in generic communications or we might need to pursue rule making in certain instances.

The reactor operating experience program is something that I went back and looked at after our last discussion with the ACRS and I was actually surprised at the extensive nature of this process and how it looks at all sorts of different inputs to determine whether or not we need to change our regulatory processes.

That's described in management directive 8.7 and in two joint office procedures between NRR and NRO Reg. 401 and Reg. 112 and it's been revised as recently as just this June.

It's a four-step process where you collect information from multiple sources of inputs. You screen it, you evaluate it and you apply to determine any appropriate necessary regulatory action.

The public petition processes that we also use to determine whether or not we should undertake rule making are described in 10 CFR 2.802, the process the petition for rule making process, and in 10 CFR 2.206 or petitions for enforcement action on a particular facility.

And the dynamic and evolving nature of our regulatory processes is described in NUREG 1412 and it was relied on to a great deal in the license renewal rule in 1991, and it was referenced and took information out of NUREG 1412.

So now the generic issues process. I wanted to discuss that in a little more detail. Again, management directive 6.4 the process includes five different stages - the identification process and acceptance review of it, a screening review of the generic issues of safety and risk assessment and then a subsequent regulatory assessment.

This slide 15 shows a schematic of the process and it's a little hard to - it's kind of busy but it's a little hard to explain. But basically the proposed generic issue goes into the center box.

It may need further research or study and then if that's the case it goes off and the Office of Research looks at it. If not, it goes down through the process shown in the middle column.

It goes through the screening program and then it's identified formally as a generic issue which is safety and risk assessment, and then there is a regulatory assessment on the need to do technical basis for rule making, cost benefit analyses or decide what other regulatory products are necessary to be pursued. Generic communications, and if that's the case it moves off to the right.

There's not really an arrow there but there should be and it goes then down the right hand column

where we address it by rule making or changing regulatory guidance.

Some cases voluntary initiatives, although under improvement activity three we are recommending some limitations on the use of future voluntary initiatives or there may be licensing actions taken individually, changes to our reactor oversight program or various source of generic communications, you know, to ask licensees for additional information or to direct licensees to make different investigations or changes or evaluations at their facilities.

So it's kind of - that's the detailed evaluation of the generic issue process and how it can lead to identification of issues and that will bring them into the rule making process.

Now, going to the next slide, this is the reactor oversight process and as I said before inspectors occasionally identify potential safety concerns and they've provided those issues back to headquarters in consideration for regulatory action even though there was - there was no violation or there were not identified performance deficiencies.

And I think there was a recent task interface agreement that came back that is causing us to look at whether we want to realize Part 21, whether we

want to do a rule making associated with that. That was identified by the reactor oversight program.

In addition, the reactor oversight program has a built-in realignment process where itself is reviewed every two years to make sure we're focusing on the right areas and we look at violation statistics and noncited violations and other things.

We also look at trends under the reactor oversight process and we also, based on that information, we refocus our inspection resources as necessary or we consider other regulatory actions.

Now, on slide 17 the reactor operating experience program, as I said before, is much more extensive than I knew about having just looked at it. It basically takes information inputs from a very wide variety of sources from the NRC.

It takes information from all of the offices - research, NSIR, NRO, NRR and Office of International Programs, information from the regions, information from the industry and international information, and it's evaluated to determine appropriate regulatory actions.

Appropriate regulatory actions in some cases would be inputs to the reactor oversight process or just information informing internal stakeholders within the NRC by management briefings or newsletters,

or in some cases we communicate with external stakeholders by various generic letters or information notices.

And we also undertake analyses that could support higher level generic communications, maybe demands for information on the issuance of orders for pursuing rule making.

And if you go to the next slide -

MEMBER BLEY: I'm just curious about one thing there.

MR. DUDLEY: Sure.

MEMBER BLEY: Who is actually organizing and running the operating experience program? That was I think -

MR. DUDLEY: Harold Chernoff is in NRR. Is there - is there an NRO? I think it's maybe joint between NRR and NRO. I'm not really sure. But within NRO, Harold Chernoff is the head - the branch chief.

MEMBER BLEY: NRO?

MR. DUDLEY: Within - I'm sorry. NRR. Harold Chernoff is the branch chief responsible for the operating experience.

MEMBER BLEY: Is that an evolution from the old AEOD or is it something separate that got established?

MR. DUDLEY: I think AEOD - I'm not very knowledgeable but I think AEOD was abolished and we went without such a program for a little while.

It didn't take us long to figure out that that was not a good idea and so this was put together and it's essentially replaces the activities that the AEOD used to do.

MEMBER BLEY: Yeah. I was concerned when that did go away. But I'm not fully familiar with this one.

MR. DUDLEY: It's - if you look at slide 18 the four steps - the column on the left is the inputs and those are all the different sources of inputs.

We get information from the industry every day from daily events, plant status reports, licensee event reports, reports under 10 CFR Part 21, input reports including industry trend reports and that sort of information.

Those from industry inputs from NRC we had inspection findings information, preliminary notifications, regional project calls. I think these are daily, not weekly.

I think these are daily instruction experience and studies and trends. And from the international sources there's the incident reporting

system, the international nuclear event scale. I'm really not that familiar with that but we get information from bilateral exchanges also.

So that information is in the middle which is this operating events clearing house where the other three steps take place - the screening, the evaluation and then the application.

Communication is part of that. It occurs at all four of the steps, and then if you move off to the right you see the last column.

That's the application column where you could - information could in fact - could affect the inspection programs, licensing activities, good cause as to issue generic communications.

We have operating expense - operating experience briefings to management. There's communications processes with notes - OpE notes and OpE newsletter, different methods to transfer information within and outside the NRC.

There's a technical review group report and then down at the bottom there's just the - this is the important part - outputs from all of that and end result and information requests to licensees that may then give us information that shows us that we need to conduct rule making.

So that sort of is a snapshot of how the operating experience program currently works and I think it's very extensive and very sophisticated actually.

If you're going to have a generic licensing basis this is a good way to determine whether or not you need to undertake generic or even in some cases it can identify plant specific activities for which we will need to undertake licensing activities or other - implement other regulatory programs or processes.

MEMBER BLEY: Just an observation. This gives what used to be in AEOD a broader base and it gives it some teeth, which it didn't have. So that's - it's very interesting.

MR. DUDLEY: Yeah. Just the location within the program offices, NRR and NRO, they're right next door to rule making as opposed to communicating from office to office, I think. So and in many cases you could see aspects of this that are better than AEOD.

MEMBER BLEY: Dick, I think we ought to look for some information on that for ourselves later.

CHAIR SCHULTZ: Dick, you mentioned the - I appreciate you bringing this forward because I think it's very important for what you're doing as well as for our information here.

The note on the first bullet as you

indicated was that the management directive is jointly between NRR and NRO and I think it would be useful for the description of this to fully elaborate what that connection is - what is NRO's role here and how does NRO fit into this process. Is it active or passive at this point?

MR. DUDLEY: Okay. In - with respect to not necessarily - in our SECY paper or do you want us to come back and answer that question, give you more details or do you want a separate briefing from these folks?

CHAIR SCHULTZ: You listed several inputs to the process, this being one important one and I think to understand what that - what NRO's role is here would be important.

MR. CARUSO: I could try and address that.

MR. DUDLEY: Okay.

MR. CARUSO: Right now we have the four plants under construction so we don't have any operating reactors.

So we're not getting any operating experience but we are getting construction experience and so we are - we have a process for filtering that construction experience and making appropriate decisions with respect to construction - that sort of thing.

We have a number of counterpart programs in place. The one I'm most familiar with is we have a risk management team which involves the folks that lead the risk organizations and NRO, NRR and research meet every other week and compare notes.

That's where we tell, you know, operating reactor PRA folks about things we've identified, issues that have come up that maybe a couple of operating reactors that maybe they ought to look into.

So I'd say at this point in time it's really more about NRR and NRO sharing information about what they're doing and how that might figure into programs.

But as far as experience goes, right now the only thing we have is construction experience. Now, when these plants start operating they'll be operating plants and they will fall into the operating reactor program.

CHAIR SCHULTZ: I appreciate that.

MEMBER STETKAR: I think it would be useful to I don't know what - under, you know, these auspices but maybe our plant operations subcommittee could get a briefing because you can see things - I mean, you mentioned construction experience but digital instrumentation and control.

Charlie's out of the room - I can say those

words - operating experience either from international where we do have integrated protection control systems or even within control systems, perhaps nonsafety related, can have feet-forward information to new plant designs also.

I'd be interested - I think it would be interesting to hear how that type of things work.

MR. CARUSO: I think the - you know, I think the agency is very aware of those connections and has established organizational connections and procedures so that information sharing and those insights can be utilized.

CHAIR SCHULTZ: Thank you, Mark. Dick?

MR. DUDLEY: Okay. The next process we used are the public petition processes, petition for rule making process, 2.802 and 2.803. It's implemented by similar office instructions - NRR it's Reg. 300 and NRO is Reg. 114.

There are a number of reason petitions for rule making that we have actually included activities in our proposed rules. So one I can remember offhand is a petition on crud deposits on reactor fuel and the fact that they're not necessarily accounted for in all of our ECCS requirements or their acceptance criteria, and the new ECCS acceptance criteria under 50.46 say now - will

be - currently will be proposed to include requirements for crud being considered in those acceptance criteria.

Also, petitions for enforcement action. In some cases, members of the public see issues that they believe the directors of either NRR or NRO should take direct activity on and because they think they see safety issues.

After - in the cases where it's determined that there are not immediate safety issues and that the petitioners' issues are not really with the plant but with the nature of NRC's regulations - in other words that it is essentially kind of a back door petition for rule making, in many cases we coordinate with the 2.206 process and in many cases those things are then reconsidered as petitions for rule making.

So the public has an input also into our regulatory processes by using these two different procedures. So the next - on slide 20, again, this shows the - once we like - what I described previously are processes we use to identify issues, whether or not we should pursue.

Then once you've identified the issues you still have to decide you need to do rule making on and that's the second step. And I've said this - I've discussed it before. This discusses it in a little more

detail.

We retain the - we would retain the existing criteria for doing rule making, adequate protection, of course, is done and we're not proposing to make any changes to the level or who will determine whether or not we have adequate protection. That's generally - that's done by the commission and we're not proposing to change that.

Also, rule making is done if we have necessary - if it's appropriate for safety enhancements and the regulatory analysis guidelines in NUREG BR-0058 provides guidance on that.

There's two different ways. As I said before, if it's a backfit Figure 3.2 of that NUREG shows criteria for a cost beneficial significant safety improvement and then those criteria are based on delta CDF and conditional containment failure probability.

And if it meets the screening criterion associated with the safety goal and if it's cost beneficial then rule making could proceed because you would be in compliance with the backfit rule and for forward looking safety enhancements that are not backfit criteria and just to be cost beneficial.

But we're also proposing under improvement activity two and on defense in depth and on - based on

other ongoing activities we're going to update the regulatory analysis guidelines periodically as approved by the commission.

And the commission has already approved this to go forward with updating the reg analysis guidelines to - based on changes to the cost of the statistical life and so the dollars per man-rem that we use to calculate cost benefit is going to be increased, essentially doubled from about $2,000 I think to around $4,000 per person.

So that will actually change the threshold for whether or not we will initiate rule making. Also the commission has directed that we include increased replacement power cost in these reg analysis guidelines.

Again, that will also change the cost benefit threshold and we are recommended in the future under improvement activity two that we would also - we hope the commission authorizes us in the SRM on recommendation one to pursue the defense in depth improvement activity which we would then come up with a definition of defense in depth, a process to determine adequacy and then take that even further to figure out a way to incorporate defense in depth criteria into the regulatory analysis guidelines and to balance out to some extent the reliance on risk.

Currently, delta CDF and conditional containment failure probability are, you know, related to risk and there's no real quantitative input in the reg analysis guidelines associated with defense in depth.

We hope to improve that and get better criteria based on defense in depth into the reg analysis guidelines. So that would also give us another threshold change as to whether or not we could issue a rule making.

MEMBER STETKAR: Dick, is that - I listen to these things and I don't want to, because of time constraints, get off into a completely different philosophy.

But it's my understanding if a proposed change at a plant called Fukushima would be to increase the height of their sea wall to 20 meters, for example, in the U.S. that would have not been a cost justified improvement to plant safety.

Is that correct? Because the releases didn't kill anybody so there's no - there's no public safety. The delta CDF was minuscule because the frequency of that event in their PRA was zero.

MR. DUDLEY: Well, there's criterion one which is adequate protection. So I don't - I think we would probably go directly to that one.

MEMBER STETKAR: Well, but I mean - well, we don't have meteorite impact adequate protection requirements here in the United States, which would be - I always use meteorites because that's something that is so severe that we can't think about it and we don't protect against it. So that's akin to that tremendously large tsunami.

MR. MIZUNO: This is Geary Mizuno, OGC again. My understanding - I'm not - my understanding is to - because I had to - we're dealing with this from a back assignment. I was - we were asked the same question by the commissioners at the time.

My understanding is that there are two - it was not that their regulatory requirements were unsound. Rather that the licensee failed to comply with the regulatory requirements.

MEMBER STETKAR: I'm not asking you about Japan. I don't care about Japan. I'm asking about in the U.S.

MR. MIZUNO: Okay. But this is the thing. Yes, if that were to occur here, okay, the same situation, okay, of a licensee not meeting our regulatory requirement, for example, and I'm thinking about one in particular to evaluate - identify and evaluate the maximum flood historically identified, okay, if it did

not do that and we found out that they did not do that and now they would have to increase their wall, their flood wall, whatever it may, Oconee or whatever, to 20 feet, okay, that would be a compliance backfit and you would not need to address the cost of increasing that wall to 20 feet in order to impose that backfit.

MEMBER STETKAR: I don't want to get into - okay. I hear what you're saying and it's on the record.

What I wanted to ask Dick was the little last bullet down there on the slide that says future improvement in terms of including additional criteria to address defense in depth, would that in principle capture those types of notions, the one that I just brought up.

You can't justify it based on the current guidelines in terms of delta CDF because it's minuscule. You can't justify and let's - even let's say okay, it passed that screen. You can't justify it because on a backfit basis because it's not going to kill anybody.

The cost benefit isn't going to work. So even if it did pass your screen on some sort of - it's first got to pass the safety goal screen, as you mentioned here.

So let's just presume it passed that screen and got into the cost benefit analysis as far as the backfit. It wouldn't - this 20 meter wall wouldn't pass

that criteria in our - in our regulations.

MR. DUDLEY: You say it's not going to kill anybody but we look at -

MEMBER STETKAR: It didn't.

MR. DUDLEY: - changes in those give us statistical answers and we figure that out, I mean, NUREG analysis guidelines I mean, yeah.

So I think it does kill people when you do the calculation and you do the calculation and you - statistically, on a statistical basis.

MEMBER ARMIJO: Yeah, hypothetically.

MEMBER STETKAR: Okay.

MR. DUDLEY: You could have statistical fatalities.

MEMBER STETKAR: If it might have then we might have done it that way. But I was just curious. I didn't want to - whether that last bullet was intended to provide a little bit more in areas that couldn't be captured. I think it is.

MR. MIZUNO: Yeah, I guess - because I happen to be very involved in the defense in depth criterion.

I believe that our intent in - well, and it's been a longstanding position is that apart from any risk information that you may have out there and whatever

insights you may get from that, our existing reg guide 1.174 says as an independent basis for evaluating the adequacy of a measure or a proposed action you have to look at defense in depth, and the idea here is that if we have better definition and decision criteria we will be able to make decisions and say no, this is not acceptable - you need to do something more on the basis of defense in depth. Never mind what the risk insight numbers tell you.

So yes, the answer is that the defense in depth improvement activity will hopefully provide a better way of making decisions that are more balanced between risk versus defense in depth information just as the NTTF suggested.

MEMBER ARMIJO: Well, I worry that could - that approach could be abused a great deal, that something can't be justified based on safety or then you go to next step well, we'll try and justify it based on economic issues, for example replacement power costs.

Then if that - we can't do it that way we'll just come up with a defense in depth argument and do anything we want. And I think you got to do a better job than that.

MR. CARUSO: Can I make a comment? Mark Caruso. I think you're absolutely right and that's why

this activity - we have an activity in the way to try and figure out how to marry the defense in depth aspects of decision making with risk aspects, how are they related is an uncertainty so that you're not doing that.

You're not saying oh, I've done this - just forget about it and then I'll use this. It has to be a complete package.

There has to be, you know, it has to - they have to be complementary in some way and independent in some way and so, you know, it's a very difficult thing to come up with the principles and criteria and we're working on that.

We don't intend to just have some - invoke defense in depth, you know -

MEMBER ARMIJO: Yeah. Exactly, Mark. You know, one review - it could get so subjective. One reviewer can say that's what I want to do and I'm going to do it and this is the way I can do it whereas another person would take it - the approach you've taken and said hey, let's do it responsibly and look at all the issues and see if we really have justification. So this is an area that I really worry about.

MR. DUDLEY: Well, Sam, right now I think the situation you describe is exactly the way the regulatory analysis guidelines are written.

It mentions defense in depth decision and justify rule making based on defense in depth, that there are no criteria, there's no definition, there's nothing.

So the current reg analysis guidelines set up just the situation that you can postulate, and what we're trying to do is fix that.

We're trying to define defense in depth, agreeing on the four levels or however many levels, determine criteria for each of those levels and put this thing into some more - maybe it won't be perfectly ordered but right now it's perfectly chaotic, all right.

There's just no definition. So we're trying to refine this and develop it and put it into a more controlled situation just like you suggest.

That's the goal of improvement activity two and that would result in an increase in safety much more so than any increase in safety we're going to get associated with our category - our proposed category. It's not really going to bring a huge increase in safety.

We may get some minor increases because we'll write better regulations that are more thorough and complete and consistent and even efficient that's not a safety bringing benefit.

But the majority of our safety benefits from what we're recommending with these three activities will

come either from the defense in depth activity that marries NLE or from the regulatory initiatives activity that will perhaps cause more requirements, more issues to be addressed with requirements than they are - than are currently. Make us less likely to accept certain voluntary initiatives.

MEMBER ARMIJO: Okay. Thanks, Dick. I appreciate that.

CHAIR SCHULTZ: And we'll hear more about that later too. So move forward then, Dick, because we're headed for a break.

MR. DUDLEY: All right.

CHAIR SCHULTZ: Not now but I know we got a few slides left.

MR. DUDLEY: The next slides are meant to answer the question on how we do risk analyses.

CHAIR SCHULTZ: Go ahead.

MR. DUDLEY: And I'm going to ask Mark Caruso to go over those because he's much more knowledgeable than I am of that. So Mark will do that.

MR. CARUSO: Okay. Thank you. Yeah, thinking about this presentation I have to admit I'm not sure I've actually - I'm not sure I've structured it in an optimal way to address this. So I may stick some other information here between the bullets to help.

So I was going to talk about the - I think Dick had already mentioned that we add a generic issue program, OpE's program and regulatory analysis guidelines and we said it needs to be risk informed activities.

We try and utilize risk information in making decisions in these programs. And we didn't talk about this the last time and you were concerned or you had questions about how do you do that, especially the generic - how do you do this risk analysis as far as outcome, those sorts of things. So we'll try and shed some more light on that.

So the next bullet was going to be how do you - how do we obtain the risk estimates that they utilized in these programs. And then I was going to be talking a little bit about the fact that there is some staff guidance for doing these things and I'm not sure where but I thought I would highlight knowledge.

So and it may have been better for me to talk about the guidance first because it's very enlightening. But so the first bullet, sub bullet there use these risk analysis models, SFAR models, NUREG 1150 where applicable.

This is what I talked about the last time. We use whatever information is available and applicable

and try to come up with some sense of estimate of the risk significance of a decision in the area.

So in the reg analysis guidelines it's - I proposed a requirement to address the issue how - what's that worth in the risk deterrence and I use that to address the criteria in that in lieu of substantial initial protection.

But first let me say the guidance we have and the guidance that's used in generic issues program and the regulatory analysis guidelines is to first say what class of plants are we talking about here.

What - these requirements I'm considering who do they apply to. I need to identify the generic class of plant that I'm trying to address before I can use any risk information because I have to justify that that risk information that came from the analyses really apply to that class.

So that's a rule that we have. It's in our - in this guidance that I talked about and it is folly in the sense of, you know, you can't just take risk information from a bunch of studies about five plants and apply it to this plant over there.

There has to be - in the issue you're trying to address the design has to fit. You know, I can go back and give you an example, you know, when we're trying to

do rule making for a shutdown that's back in the 90s. There are aspects that apply to issues of shutdown that apply to all the plants, you know.

The most important one was that there was actually no recognition that there was - you know, you shutdown, you're safe. There are no issues down here; there are no issues. There wasn't a lot of knowledge about addressing the safety of shutdown input issues.

There was a whole cultural thing that we identified and then leading to a number of events. There were a lot of human errors, things like that because there were no - there was no mind set behind this about - on how to function during that period. There was no information about when you were risking configurations - that sort of thing.

So that was something that applied to all the plants, BWRs and PWRs, and that was - you know, to address that with risk information there was - we attempted to do it and it was as you can imagine very difficult to be very successful because you're talking about how do I measure the worth - the risk space of a requirement for an applicant to have a shutdown safety program and have the principles of safety to that procedure, those sorts of things. Very difficult.

But back to the point about the

applicability to the class of plants, there was another very, very important risk issue which was the loss of shutdown cooling in the middle of operation of the PWRs and there you looked and you can pretty much look across the PWRs.

They were all pretty much doing it the same way. They had tie down tubes. They take the level down, you know, to the mid-plane and the hot legs. They would give a very good indication level and would suck air in the pumps and so we felt that the information we had from accident sequence precursor analysis because there had been a number of these events that are taking place.

So since we had no PRA at time we took - we used the accident sequence precursor programs to see what would be the conditional core damage probability given these types of events and use that as a yardstick in looking at the risk worth of a requirement to have level indication.

So the point I'm making is that we are aware that you can't - there are limitations on your ability to use risk information to address generic issues.

But when you can you do and you use whatever you can. It's like I said, when we did the reg analysis for shutdown we went in from PWRs and we constructed sequences that pretty much fit a whole bunch of events

across the board that we felt worked in three or four sequences. You don't need - particularly need a whole PRA.

You need - you can even take several key sequences that really hit this crux of the issue and it's what you're trying to fix and see if I fix those sequences what's the worth and the criteria, as Dick mentioned, we have criteria to CDF and conditional containment failure probability for doing that.

Now, sometimes we have issues where we - the risk models don't - haven't even covered yet. It's beyond the state of the art. We may go and ask for, you know, there to be any work done in development.

Again, in the shutdown we had nothing about, you know, what about the releases? If I have any accidents at the end of the outage after 60 days do I get any benefit from decay or these kind of things. What's the composition at that point in time.

What's going to be the releases. So we had - we had - I remember at the time we had a bunch of analysis to try and help us come up with a realistic estimate of what releases would be for a short time.

In addition, we can - we can request information from the industry. We always have that capability. We have the regulations, the ability to

demand information and help us make decisions.

So these are all tools that are available in order to try and make these assessments. It's not really about getting the PRA or running a PRA. It's trying to do - I say that it's a little bit of art but it has to be done in a way that's justifiable.

And, you know, when you do these things you have to try to address uncertainties as best you can. When we did the shutdown then we - all we could do is do some sensitivity studies and to say well, if I make these improvements and assume that they were going to reduce the failure probability by this much then we look at the factor of ten higher or a factor of 100 higher and see what difference it made.

In other cases you can do better than that because we have, you know, we had a better issue to deal with that's more amenable to the current technology we have so we can do a better PRA uncertainty analysis.

In cases where you just can't do it with risk information, you know, you can't justify it yet we don't have it, can't get it, there's too much uncertainty, the staff will use qualitative assessment and, you know, and try and make qualitative arguments in substantial risk reduction. And at the end of the day that is done.

In all of these assessments, you know, they

are subject to review - peer review, just quality and CRGR. So and there are questions. There are questions about the, you know, challenges about the applicability of the risk information, the period in which it is supporting your argument.

So that's sort of a snapshot of sort of how this is done and if you - if you - I was looking at Management Directive 6.4, which is a generic issues program which has been codified there.

In the old days it was just out there and I sort of knew how it was done. Now it's flowing down and there is a established piece in here if you go, you know, do a safety risk assessment and to use PRA and there is - you know, guidance is there on applicability and trying to come up with, you know, the bases for generic decision. And I'll use the example of generic issue 99.

When you go in and you look at it they've done a lot of stuff, a lot of work, a lot of analysis to try and come up with some figures to make a generic decision.

The bottom line in the end was they couldn't do it. There were too many plant specific site specifications associated with seismic hazards.

And the conclusion was is that we can't - we need plant specific morals. We need plant specific

information before we can move forward. Next slide.

So yeah, you know, this topic of applying PRA to these types of decision making was look at NUREG 1489 which I'm sure many of you are familiar with and there is a whole set of guidance in there about, you know, justifying the class of plant, addressing uncertainties, identifying what the key assumptions in the analysis are, utilizing the safety or policy statement in your decision criteria as a basis for your decision criteria and a whole series of guidance on, you know, what you should document and how you should document it in detail enough to give some reviewer the ability to follow what you did and make a reasonable decision as to whether or not you have a good basis for your decision.

So I think with respect to what we do and how we do it and that sort of thing that's about all I really have to say. So if we could go to the next slide.

So in putting this together - you know, I talked about it and talked about well, you know, could we - could we improve things here and I think the answer is we certainly could improve this process and capability by adding PRAs because in a number of cases you end up finding out that's that you need to figure things out. All the plants are different.

A lot of the operating plants have different

configurations. They incorporate additional design features - their ability to address the issue over here that we do over there.

So, you know, I guess don't get us wrong. There are many people in our group, not most, that very much believe that having plant specific PRAs and using plant specific PRAs is a way to improve safety and help safety.

I personally have been involved in the use of PRA in new reactors and it has just been immensely pleasing to see the improvements and the juice that's been gotten out of utilizing PRA in the design process for plant specific PRAs.

The question really - the question here is really about imposing a generic requirement to have PRAs of a certain quality level and that's where it becomes difficult, as Dick said and as Shana said, that we have to ask ourself, you know, is that something that - to what extent will it improve safety or is that what - it's really what you can prove.

Can we - you know, what can we say about the ability to improve safety. How can we make the arguments that it would improve safety in a substantial way.

And I think - I think, you know, from my perspective the reason I've come around to what we're

proposing is is that when you try and come up with the arguments that a PRA requirement for all operating plants is justified it's hard to make the case because the plants are all so different.

Some may - you may get more benefit from one than another so it's hard to - and then the benefit you would get from having a PRA and doing an PRA is I don't - the way you would quantify that I can't quite think of.

In addition, you look at the fact that for operating reactors, you know, they went through a design - a design look with their PRAs back in the IPE stage and identified vulnerabilities and in some cases, when there were vulnerabilities - and there weren't that many - they were fixed.

But they did look. That's what we asked them to do. They did it. They identified things and I believe I know all of what they did. Well, we do know they look from a design perspective.

In addition, we have in place now - you know, we're putting in place in the other - in the other Fukushima initiatives a number of things that would account for uncertainties and capture mitigating events that perhaps couldn't have been mitigated before.

So if you were to - so you ask yourself well, if I had this PRA and I identified this particular event

over here, you know, perhaps I've already addressed it in a way that the safety benefit in risk deterrence by identifying the PRA wouldn't be as much as it might have been three years ago because I've put strategies in place.

So I think, you know, those things plus looking at the costs and we asked the industry for information, say, if you want us to develop PRAs we do PRAs and the numbers that we got from them are quite substantial and they - so when you put all these things together and you say can I make the case that this would be a cost justified generic requirement I don't think we feel like we would be able to make a strong case for that. So that's pretty much where we are with the issue of plant specific PRAs.

CHAIR SCHULTZ: Thank you, Mark. Question from the committee for Mark before we proceed to the conclusions of this section? Dick, that's your next slide.

MR. DUDLEY: This is just a summary. We don't believe that the NTTF recommendations that faults on the NRC's processes we're being reactive. We think that the NTTF's regulatory framework concerns are primarily based on the clarity of the regulatory framework and the fact that our beyond design basis

regulations are not necessarily logical, consistent or systematic or coherent.

They identified a gap in the regulatory structure for these beyond design basis events. We don't acknowledge really that you regulate them in our regulatory framework and they also identified a concern over the reliance.

The patchwork as you recall is a mixture of voluntary initiatives and beyond design basis regulations and the NTTF was concerned over this reliance on voluntary initiatives and the fact that in the past we've been historically inconsistent as to whether we will accept the voluntary initiative or not.

I believe events when they were proposed by the staff were a cost justified requirement that met the backfit rule or whatever was in place at the time yet the commission chose to accept the voluntary initiative in that case.

So we believe that those were the major concerns of the Near Term Task Force on the regulatory framework and we don't think that the reactive aspects of our regulatory process are necessarily weaknesses.

Many of the times or many of the events that we react to reveal new information for previously unknown things that had we gone out and proactively searched for

that two weeks before the event we would not have found it because that event revealed information or phenomena or something that was previously unknown.

So some of these things you can find by looking proactively until they reveal themselves, and as I said before risk assessments can identify unknown phenomenon that aren't modeled in the PRA and if there is a true weakness a true weakness would be having a reactive approach in the regulatory process that's too narrow and only focuses on a specific event in responding to that and not looking for causes or looking at - when you see one event looking for related events or failures on or other similar observed events that could be pursued in addition to the specific event that has occurred.

So that's just a summary of our views on the adequacy of the existing processes and if there are other questions please -

CHAIR SCHULTZ: I think we're anxious to go to a break. But I did want to ask one question that you can think about and perhaps address it in the conclusion.

MR. DUDLEY: Okay.

CHAIR SCHULTZ: You talked about a number of processes and you gathered them together that are currently being used and you've indicated for example that the operating experience program is a robust way in

order to identify initiatives that ought to be at least examined if not pursued.

But my question is for each of those have you identified that there is sufficient oversight of the processes themselves?

Do you feel that there's sufficient oversight on an ongoing basis to assure that those processes are working effectively and is there any - is there an integrated process within the agency to examine the overall - the overall system in place or is it left to the commissioners to determine if - where things are bubbling up through all of each of these processes and all of them together to be sure that we are effectively working the process?

It's just something to think about and if you can address it in the conclusions today I'd appreciate it.

MR. DUDLEY: I know we have oversight process. The inspector general has audit processes. There are a number of processes. I don't know that I'm going to be able to answer that today.

I think we might have to wait and give it to you over the break.

CHAIR SCHULTZ: That would - that would be fine.

MR. CARUSO: I know - you know, I think we need to come back as to what is happening. We know that in the past there was a lot of - a heavy reliance on the precursor program.

CHAIR SCHULTZ: Let's come back to it in October then. I'd appreciate that.

MR. DUDLEY: Okay.

CHAIR SCHULTZ: With that, I'd like to call a break until 11:15. But also realize that we do have - at least some of us have a hard stop noon time. So we're 15 minutes behind schedule but we'll make it up in the last -

(Whereupon, the above-entitled meeting went off the record at 10:58 a.m. and resumed at 11:13 a.m.)

CHAIR SCHULTZ: At this point, we'll bring the meeting back into session. Dick, I'll turn it over to you to move forward.

MR. DUDLEY: The next is discussion is on ACRS - what we call issue two but it's also in improvement activity two on defense in depth, and Mary Drouin will present those slides.

MS. DROUIN: Mary Drouin with Office of Research, slide 26 please. Okay. The SECY paper that's going forward to the commission we are making a

recommendation that the commission approve the development of a reactor policy statement on safety on defense in depth. I emphasize safety because it does not include security.

In making this recommendation, we wanted to feel comfortable that at the end of the day this could actually be done.

So we, you know, had a lot of discussion, did a lot of homework, tried to conceptually visualize what this policy statement would look like.

So in the paper we actually give examples, you know, of - to let the commission know that yes, we actually think this can be done and these would be the parts of the policy statement.

So we did come up with what we call a defense in depth structure and this is coming - starting at a very high level in a logical systematic way, you know, how you start with the definition.

MEMBER STETKAR: Before you get into some of the sub bullets, I wanted to ask a higher level question because I may not have understood something that Dick said much earlier this morning.

I thought I heard you say that you were recommending the issuance of a defense in depth policy statement that strictly focuses only on power reactors

with some other defense in depth policy statement to apply to whether it's one or many policy statements that would apply to all other regulated activities. Is that the case?

MS. DROUIN: Okay. Let me try -

MEMBER STETKAR: Because I know we're going to be - we have another subcommittee meeting this afternoon that addresses some of this.

MS. DROUIN: NTTF's scope is strictly power reactor safety. That's our scope.

MEMBER STETKAR: NTTF?

MS. DROUIN: NTTF.

MEMBER STETKAR: The subject of this morning's meeting?

MS. DROUIN: Right. Right.

MEMBER STETKAR: Okay.

MS. DROUIN: RMRF's scope is the entire agency.

MEMBER STETKAR: Yes.

MS. DROUIN: So I don't want to get a lot because you're going to hear that this afternoon.

MEMBER STETKAR: Right, and that's -

MS. DROUIN: But it's an overall policy statement on a risk management regulatory framework of which defense in depth is a major element of it.

MEMBER STETKAR: Right.

MS. DROUIN: But across - it cuts across the whole agency.

MEMBER STETKAR: But for defense in depth a commission policy statement on defense in depth that is restricted to only power reactors doesn't - I don't understand how that works.

I mean, I understand some of the things you're going to go into here and I think we'll probably hear more of this afternoon in terms of levels - the degree of implementation of defense in depth should be, you know, tailored to the particular type of facility. I understand that.

But a policy statement in terms of how the agency will consider defense in depth -

MEMBER ARMIJO: A stack of policy statements. That's a big issue.

MEMBER STETKAR: Yeah, yeah. A stack of, you know, 15 different policy statements because we have 15 different regulated entities. You know, I have to get it in.

I haven't said patchwork yet today I don't think so I'll say patchwork. You know, why do we need N policy statements about how we're going to consider the issue of defense in depth and that it, you know, ought

to apply, let's say, across the whole spectrum of things that we're regulating simply because the NTTF has decided to draw a little dotted line around the fact that we only care about power reactors.

MS. DROUIN: Well, this separation is a recent decision by our management and the best I can say is that they felt it would be easier to do a defense in depth policy statement first and then go do the overall one that's second.

MEMBER STETKAR: But a defense in depth only for power reactors.

MS. DROUIN: Correct.

MEMBER STETKAR: Okay. So I didn't misunderstand those words.

MR. DUDLEY: And its redirection since we were here in May.

MS. DROUIN: This is a new direction.

MEMBER STETKAR: From the ubiquitous "our management."

MEMBER CORRADINI: Esteemed management, yeah.

MEMBER BLEY: We'll talk more about that this afternoon.

MEMBER STETKAR: Yeah, that's the - I just wanted to make sure I understood what I heard before

because I wrote down a few hastily scratched notes here. I'm sorry, Mary. I just wanted to get that.

MS. DROUIN: No, it's a very good question. I'm just not the right person to answer it.

MEMBER STETKAR: Well, this afternoon you'll get the right person to answer it or want to be the same person.

MEMBER BLEY: One can only hope since it's the same cast of characters in both shows that the two will look a lot alike. But we'll see.

MEMBER ARMIJO: I would think so.

MEMBER STETKAR: Well, except for the fact that if the policy statement on power reactors becomes a very - if it becomes too focused on specific issues as a so-called policy statement then there's a real danger of having sort of different philosophies start to evolve at the policy level - at the high commission policy level.

In other words, if you start to put too much detail into this policy statement because you're thinking strictly about the issues that might affect power reactors.

MS. DROUIN: I understand. I truly understand.

MEMBER STETKAR: When you write the other - when you write the other 14 each of them will have their

own particular issues which -

MS. DROUIN: I understand.

MEMBER STETKAR: Okay. I'm sorry. Go on.

MS. DROUIN: No, that's - they're very legitimate questions. Anyway, as I said, we were just doing enough in the working group to feel comfortable that such a policy statement could be developed.

So, you know, we do have the enclosure that's quite detailed that goes into, you know, what a potential definition would be, you know, what could be some principles - you know, what would be the levels of defense, you know, et cetera.

And as I said, we came - as we came up with examples for all of this, this is based on us going back, you know, over the 50-year history, and there's been a long history and it's very rich with literature going all the way back to I think 1957 and looking at all of this and what has been said, you know, over the years about defense in depth.

Now, we focus strictly on looking at what had been written, you know, in the NRC except for we did look at what IAEA has written over the years and we did read the recent paper that was issued by Idaho National Labs.

They wrote a very exclusive on how to do

defense in depth for new reactors. So we looked at all of that and came up with, you know, conceptual examples.

The policy - the SECY paper that was going forward will not have a policy statement with it. I want to make that - there's been - seems to be a lot of confusion. NTTF recommendation one is not developing a policy statement.

They're asking approval for the staff to do this and that, you know, ACRS, we're consulting you now, and then given on whether or not the commission gives us approval to move ahead with that.

So that, you know, we'll not know whether or not we're going to develop a policy statement on defense in depth until we get the SRM.

Okay. On the next slide, this slide is trying to show different things and it could be that we're trying to show so many different things that may not be the best slide.

MEMBER ARMIJO: I think that would be a good idea.

MEMBER BLEY: Are these four, by the way, related to levels one, two, three and four that show up on the next page?

MEMBER ARMIJO: I think so.

MS. DROUIN: Yes.

MEMBER BLEY: Good.

MS. DROUIN: So where it comes down to reactor safety, you know, and if you start at, you know, the highest level that you want to have, you know, both prevention and mitigation what you see here are two levels. You know, in green are the levels of defense that we think ought to be there for reactors.

And as I said, you go over the history you will see people have said there's two levels of defense and they stay at the highest level - prevention and mitigation. IAEA defines five levels of defense. Other people have defined three. Some have defined four.

We settled in on what we thought four levels of defense were the appropriate ones and, you know, it's always asking the question, you know, what if this happens, you know, what happens next.

And then it was also taken into account, you know, the uncertainties and when you look at, for example, the first level of defense, which we're saying is event preclusion, now these are goals, you know, and so we would want to have stuff in place to preclude events that could challenge safety.

And then the next one is prevent the accidents - you know, prevent events from leading to core

damage, you know, and when you look at the phenomena, for example, where you're going to start having core damage versus the next level which is to contain or confine, you know, your radioactive material, well, the phenomena associated with core melt, you know, has more uncertainty.

You know, we have less knowledge than we do, for example, on leading up to core damage.

So these lines are also lines of demarcation of where the uncertainty, you know, may change and increase a little bit. So we thought these were also good ways to define the different levels of defense.

MEMBER SKILLMAN: Mary, just a curiosity question. Are the vertical lines at the transitions from event occurs, you see preclude on the left and prevention on the right and you see the little red line becomes vertical -

MS. DROUIN: Yes.

MEMBER SKILLMAN: - is each one of those vertical lines intended to communicate a step increase or quantum increase or is that just a graphic to simply show that you have four bins?

MS. DROUIN: It's really to show you the four bins and there may be, you know, differences in the uncertainties associated with them. But it's not meant

to say there's quantum leaps in the uncertainty and so that's why this slide is, you know, a little bit -

MEMBER SKILLMAN: So this is an infogram and that's just a little bit of a heads up there's a change?

MS. DROUIN: Yes.

MEMBER SKILLMAN: Gotcha. Thank you.

MEMBER ARMIJO: Mary, how do you - how do you preclude an external event? It's really - aren't you really trying to anticipate and plan for -

MS. DROUIN: So, again, you know, what I said earlier you can't really preclude this as a goal. So you want to have stuff in place to hopefully preclude as best you can.

MEMBER BROWN: Well, how do you preclude an earthquake or a -

MEMBER ARMIJO: Yeah, that's what I'm saying.

MEMBER RAY: What is meant is an event that exceeds the design.

MEMBER REMPE: The challenge is safety.

MEMBER RAY: Right. It's not all events. It's events that exceed. It's just they didn't put that in there.

MR. CARUSO: This is Mark Caruso. I mean,

there are a couple things -

MEMBER ARMIJO: We anticipate an event, adequately yes.

MR. CARUSO: I might suggest a robust maintenance program is an attempt to preclude losses of feeder water. A fire prevention program is intended to prevent fires. Siting may be a way to avoid earthquakes. So those are the kinds of things that we have in mind there.

MEMBER STETKAR: Preclude is a strong word.

MEMBER RAY: You don't mean avoid earthquakes. You mean avoid -

MEMBER BROWN: That's what he just said.

MEMBER RAY: I know it's what he said.

MEMBER BROWN: And this is Ed, Charlie. He doesn't mean avoid earthquakes. He means avoid excessive earthquakes or beyond -

MEMBER RAY: I didn't word it that way, Harold, so I mean, that's the way -

MS. DROUIN: Okay. All we're trying - okay. All we're trying to do with these slides - you know, unfortunately, you know, we get caught up in words. But we're trying to convey the concepts here. You know, and the concepts is they have four levels. The first one is to deal with events.

The next one is to deal with, you know, preventing core damage. The next is to contain it and then the next is to deal with mitigation in other releases. So -

MEMBER STETKAR: You can't - I'll come back to my meteorite. A meteorite gets you immediately to the third vertical line, a big enough meteor. And you can't preclude that.

MS. DROUIN: That's right.

MEMBER STETKAR: You only have to deal with whatever you understand the risks might be.

MEMBER BLEY: But this isn't just for external events. It's not just for sites. It's for everything. So you preclude those if you can and maybe some of them you preclude by siting. Or if it's internal events you might design a plant that doesn't have that event.

MEMBER STETKAR: That's right.

MEMBER BLEY: So you can preclude some. But it seems clear that -

MEMBER STETKAR: So that the notions - the notions are valid. I'm not trying to challenge the notions.

MS. DROUIN: Okay. So now we can start nitpicking this one. Okay. What we're trying to show

with this slide is that we don't want anyone to come in and put all their eggs in one basket.

We don't want them to come in and say we're just going to do that first level of defense and we're going to ignore the other levels of defense. We want them to deal with every level of defense and we want those levels to as practical as possible to be independent.

So we don't want if you fail level one that you would fail level two, level three and level four. So we want to try and have independence among these levels.

Then within each level to determine that you have adequate defense in depth, you know, we're saying well, okay, you know, all the principles are they implemented - did you deal with the principles for that level.

And if not then you may have to go and enhance your level of defense measures that you had put in place.

Are the level of defense measures are they even met. You know, are your safety margins adequate - are your known uncertainties adequately addressed. So these are just some of the questions that we would be asking and would come up with criteria in determining, you know, whether or not you have a yes or no, and if you have a no, you know, what you would need to be doing.

Now, the one thing - and I just showed it on this one last question - and this is, you know, are your applicable quantitative acceptance guidelines met, and the answer may be no but this is when, you know, you get into these fuzzy lines and so to what extent are they not met.

You know, did you really exceed those guidelines or are you just kind of pushing the boundary so that maybe there's something else you can put in place. You know, maybe it's just temporary depending on, you know, what the issue is.

Or it could be something more permanent that, you know, you can put in place so that, you know, you're still up against the boundary. And so one of the things we just listed there, you know, your ability to monitor performance of your plant features and maybe that's sufficient.

So but the thing is we're - you know, we would go through this decision process and, again, you know, the questions here may change.

This is just to give, you know, conceptually the idea that there would be, you know, criteria that you would ask, criteria against you would judge and then that would lead to, you know, what do you need to do now to ensure that you'd have adequate treatment.

So then you can see the two orange boxes. You would go through this for each level and when you ultimately come out with yes then, you know, you would have adequate treatment of defense in depth.

MEMBER REMPE: Mary, did you say that the word independent measures for each level? Is that something that the staff is thinking of including in this SECY paper that you want the measures to be independent?

MS. DROUIN: Your levels to be independent as practical. You know -

MEMBER REMPE: Practical will be in any sort of staff document.

MS. DROUIN: Yes.

MEMBER STETKAR: Mary, I understand this, okay. I understand it pretty well. It's busy but hangs together pretty well.

You may want to think if you're presenting this that the sort of implied linear relationship between uncertainties and those quantitative guidelines and in fact you sort of addressed it in words a little bit that in some cases the uncertainties will give you a lot of information regarding margins, those quantitative margins you talked about.

You know, do you meet the criteria. Well, the way it's presented here is that uncertainties seem

to be a kick out.

You determine are the uncertainties adequately addressed and then you start asking about quantitative acceptance criteria and it's not quite that clean.

MS. DROUIN: Yes.

MEMBER STETKAR: Do you follow me? You know, it's -

MS. DROUIN: That is true.

MEMBER STETKAR: In terms of elaborating on that - those notions.

MS. DROUIN: You know, and a lot of this would be iterative.

MEMBER STETKAR: Yeah.

MS. DROUIN: And trying to show all of that -

MEMBER STETKAR: No, no, no. It's fine.

MS. DROUIN: - you know, it was already busy enough. And it may not even be this - you know, I played with this several times and this may not even be the correct order -

MEMBER STETKAR: Yeah, that's -

MS. DROUIN: - that you look at some of this stuff. And again, you may look at them in parallel and not so serial. So all that needs, you know, to be worked

out, you know, once the commission gives approval to go forward and develop this.

Okay. So now on this slide, you know, this is just going a step further. You know, as you ask these questions, you know, what are maybe some of, you know, the criteria that we would be looking at. You know, what is the significance of the known uncertainties.

You know, our quantitative guidelines it could be, you know, we would establish goals on component system and human reliability goals on accident or damage prevention, quantitative goals on the risk of exposure to workers or the public overall risk.

So these are just, you know, again, examples of some of them - performance monitoring that you would want to monitor degradations and performance, you know, which hazards, you know, must be considered - design standards, consequence criteria, response capability.

So this is just some of the thinking that, you know, we have started looking at and thinking about, you know, what would be the criteria we would want to start exploring and coming up to determine whether or not you have adequate defense in depth.

Now, I do think that PRA can be used here, particularly when you start establishing your quantitative goals.

But, you know, none of this would be, you know, PRA based. It would be used in conjunction, you know, with deterministic criteria.

Okay. Maybe I can make up for a few minutes.

CHAIR SCHULTZ: Questions for Mary?

MS. DROUIN: Well, that was that - that's my presentation.

CHAIR SCHULTZ: I understand. That's why I'm asking.

MEMBER BLEY: Those slides clarified things from the set we saw a day or so ago. So they were an improvement, yeah.

MS. DROUIN: That's what we were hoping.

CHAIR SCHULTZ: No questions? We'll move on them.

MS. DROUIN: So I can take that everybody loves what we're doing on defense in depth. Thank you very much. I like that.

MEMBER ARMIJO: We don't hate it.

MR. DUDLEY: Our next topic is the third issue that the ACRS raised on more details on the voluntary initiative improvement activity and Dan Doyle will be going through those slides for you.

MR. DOYLE: Okay. I think we're actually

okay on time. I just have a few slides.

What I'm going to do is go through just the summary of what the recommendation currently is, how that has changed from the last time we were here and to respond to specific questions that I was asked the last time we were in front of ACRS.

So this slide up on the screen here, 31, is a summary of the main points of what we're recommending and this activity about clarifying the role of industry initiatives and the NRC's regulatory processes would reaffirm the commission's expectation that industry initiatives may not be used in lieu of regulatory action for adequate protection issues. Again, that's the current policy.

If the commission makes the determination that something is necessary for adequate protection then we will make that a requirement and we will not rely on the voluntary industry initiative.

We think that that policy is a good one and should be elevated - the visibility should be elevated.

But the current policy also allows that if there is not the determination that something is necessary for adequate protection then in some cases it is acceptable to factor the existence of this industry initiative into the decision making process. So the

second sub bullet there is to improve and clarify how that works.

So we would specify more clearly when certain industry initiatives may be credited in the regulatory analysis in this decision making process for new requirements, how that factors into the baseline case.

And there was a question last time we were here about how - for more detail on that and that's one of the upcoming slides, to provide more guidance for what level of oversight is appropriate for future industry initiatives as a part of the recommendation.

And then the last part is well, what about the ones that are out there right now and we are including in this recommendation to review certain existing initiatives and to verify implementation at a number of sites.

MEMBER ARMIJO: Could you tell me what that type two initiative is?

MR. DOYLE: Sure.

MEMBER ARMIJO: As well as to other kinds of initiatives?

MR. DUDLEY: It's got a backup slide on there I think.

MEMBER ARMIJO: Yeah.

MR. DOYLE: So the type two. So in the regulatory analysis guidelines it explains that there - you could think of these industry initiatives as generally fitting into one of three types, those type one where there is a requirement in place and the initiative is a method of complying with that and the NRC may endorse that.

And the type three, the opposite or the other end of the spectrum, is for those that are not likely to be a public health and safety concern, not likely to result in a NRC requirement. So the example we provide there is ground water monitoring.

And so that the type two is what we're focusing on. So we're not talking about where there is a requirement or where it's not really a public health and safety concern at this time.

We're talking about type two where there - a requirement might be able to be justified and we're trying to determine should we impose that requirement or is the initiative good enough.

MEMBER RAY: On what basis do we consider the industry monolithic? That is to say how much diversity within the industry is presumed?

MR. DOYLE: Well, so I think you're asking like who could come up with these initiatives or how

broadly are we talking.

MEMBER RAY: How much diversity in the implementation of them do we anticipate?

MR. DOYLE: That - well, that would be part of the - I think in the case of whatever regulation you're talking about it would - it would just depend on the circumstances.

So you're saying that the industry may propose an initiative and there may be varying levels of implementation, that some may do a better job and others may not. Is that what you're saying? So that should factor into the - into this.

MEMBER RAY: I mean, there's no - I can be part of the industry and decide I'm not going to do something that somebody claims is an industry initiative.

MR. DOYLE: Right. So that's - yes. So that should - yes. That's a good point and that's something that we've discussed and that's - I think that's addressed in what we're recommending in the criteria to ask that question.

MEMBER SKILLMAN: Dan, on 31 of the last bullet please say more about the 6-9 facilities.

MR. DOYLE: What we're suggesting in this bullet is to screen the - to review the - screen the

existing initiatives of this type to look at what the current performance measures and oversight is in place for those initiatives or really for what the issue really is.

And if we feel that there is not a sufficient level of oversight and monitoring in place to send NRC staff to the site to do a one-time inspection to gather more information, not for the purpose of identifying violations because we're talking about initiatives - the type two again where there may not be a clear requirement linked to it but so not for the purpose of resulting in violations necessarily but to inform the NRC's decision to follow up on, verify these assumptions that may have been made in the past - is it appropriate to continue to rely on this initiative.

So that's what we're saying is to send NRC staff to - number 6-9 was the number we put down facilities to do that.

MEMBER BLEY: Depending on what you find there might one outcome be to have some inspection guidelines for the residents to track these in different ways depending on what you find from this sample?

MR. DOYLE: Absolutely. It wouldn't automatically be a - have to result in a rule making necessarily but that - that that's definitely a possible

outcome is to modify existing inspection processes.

MEMBER BLEY: Right now we're not inspecting these at all, are we? I don't think.

MR. DOYLE: Generally speaking, no.

MEMBER BLEY: Yeah. I mean, let me say again the industry isn't the single point of accountability. It is the industry and people can - Gary from the industry initiative as you call it, if they believe in their judgment, you know, it's something that's permitted.

In other words, it's awkward for me to say it. I'm just trying to understand how you think about somebody representing whatever you're calling the industry saying we're going to do how you think about that as a - as something that then becomes implemented by a whole diverse set of people who are accountable to their respective stakeholders.

MR. DOYLE: So an example of what I'm talking about and how I think of it is is the NEI process for developing these initiatives and putting them before the - they have a council or committee of the chief nuclear officers and -

MEMBER BLEY: I know it well.

MR. DOYLE: - so that's -

MEMBER BLEY: That's why I'm saying what

I'm saying.

MR. DOYLE: So that's what I'm talking about. So that's how we would take that at face value and, you know, realize that there - you know, what - that that is what it is.

It's not a formal commitment necessarily. It's not a regulatory requirement. It's not quite as easy to inspect or enforce as requirements.

MEMBER BLEY: That's why I said what I did in response to Dennis. I mean, what you maybe told about an initiative can be by way of an example of something. I just don't understand how it can be assumed that everybody does the same thing as -

MR. DOYLE: It should not be and I don't think we're saying that it would be.

MEMBER BLEY: Okay. All right. Will you have some follow on slides about this?

MR. DOYLE: Yes.

MEMBER BLEY: Okay. Maybe that'll help -

MEMBER SKILLMAN: I'm still stuck in the 6-9. Was that intended to be a hey, we got about 62 sites - we've got about 100 live core plants - we're going to just pick a number between six and ten or six and nine?

Or do you have six, seven, eight or nine plants that you have targeted because you are

dissatisfied with what they're doing? That's why I'm asking the question on six to nine.

MR. DOYLE: There was some discussion about sample size and following up and had the resources that would be associated with that and what conclusions you could make from the results. So that's not a final number. But that was - so that -

MEMBER SKILLMAN: But that was to be a representative sample?

MR. DUDLEY: We haven't gone out and found six or nine facilities that we're concerned with. That's not - it's not the latter. Now I understand. Thank you.

MEMBER BLEY: I think - I really agree with Harold on this. I think you need to consider if the idea of sampling makes any sense at all for a voluntary industry program that is further voluntarily among all the individuals in that industry as to whether they even participated or not.

You're sampling from really an unknown set here. It's not that everybody signed up to do this and are they all following the guidance appropriately. They haven't signed up, at least in any way I know of.

MEMBER RAY: Well, there are rules within any of them but let's not go there. The point is that

people are free to interpret how something may apply to them and make their own judgements about that.

There's isn't any inspection force. There isn't any way to - other than what the NRC provides to say well, no, you did that wrong - you should do it this other way because that's what we meant in our initiative. That's what I'm -

MR. DOYLE: Well, so I think this highlights what we're focusing on and what we're trying to help and fix and that when we're at the point of making this decision of imposing the requirement or accepting an initiative at that point we make some assumptions.

Are they going to do it - is it going to be effective - how many are going to do it. So what this is supposed to accomplish is to -

MEMBER RAY: And the it isn't always so black and white as we may think.

MEMBER RYAN: That's kind of the key point, Harold, is that, you know, these are very - usually very complicated issues.

MEMBER RAY: You know, I can decide I'm in compliance. I did what I said I would do or what I was told to do. But that's my judgment.

MR. DOYLE: Right. So it would feed - it should feed back - the purpose of this - of this sample

is to follow up on and verify some of the assumptions that were made when we made this decision that it's okay to have this initiative in place and if it's not as widely accepted or implemented or effective than the - that we - it's good to know that and we can revisit the decision to impose the requirement.

CHAIR SCHULTZ: Is this an additional thing that is being recommended to be done or is it an activity that's going to happen before we determine we're going to do bullets two and three here? In other words, go ahead with endorsing industry initiatives?

Are we going to do this review first and then determine whether we're going to specify certain or provide guidance regarding? Or is this oh, and also we got to check back and see what was done in the past?

MR. DOYLE: The current policy already allows that so we're already doing that in some cases and have done it in the past. So that wouldn't be a change.

But the timing as far as developing and issuing the policy statement that probably would be after this activity.

That hasn't been completely - the sequence of, you know, do we develop a policy statement first elevating this and develop criteria before or after we do this sample in the fourth bullet. That hasn't been

-

CHAIR SCHULTZ: The team should make that clear in this actual document.

MEMBER BLEY: Let me ask a more basic question to me in your second bullet and it shows up in later spots. What does it mean that we credit a voluntary activity?

MR. DOYLE: Okay. That is a good question. It means that when we're doing the regulatory analysis we have a baseline case where we are trying to make a decision and looking into the future of what the industry or the - what would the impact - what would the world look like without this new regulation.

That's the baseline case. And then comparing that to what the world would look like with the requirement, having done these and I'm oversimplifying this - this is my understanding and that we compare those two and we make a decision. So the credited part -

MEMBER BLEY: So we use it to decide if we want a new regulation.

MR. DOYLE: The credit part is does it factor into the baseline case or not. Do we assume that the future is going to be safer because of this industry initiative or not.

Do we assume that the baseline case in the

future is the way things are today or do we assume that the baseline case is a little bit better because there's this initiative. That's the crediting.

MS. HELTON: This is Shana Helton. Dan, perhaps it may help to talk about how some generic issues have been closed out with - through the use of voluntary initiatives.

So, you know, I think in the past we've had some generic issues that have come to the surface in our evaluation of whether or not the NRC should take formal regulatory action on those issues.

We might have gone through on our process with the regulatory analysis guidelines given credit to a voluntary initiative and that credit might have been the decision point for going forward with the regulatory action or not going forward with the regulatory action.

And I think it's important to point out that post Fukushima some of the voluntary initiatives that were replaced we went back and looked at those and thinking about the CMGs and the hard events.

And now we've got either a rule making activity or an order in place for those voluntary initiatives.

So now what the improvement activity that the staff is proposing to do is to go back and review all

of these type two voluntary initiatives to see if in the past we have come to a regulatory conclusion about either proceeding with a rule or other sort of regulatory hook for an issue if we made a good conclusion based on an assumption that a voluntary initiative would work.

MEMBER BLEY: So what we're planning to use is to look retrospectively at decisions that were made in the past to see if they're good.

MS. HELTON: On type two voluntary initiatives.

MEMBER BLEY: Okay. That wasn't completely clear to me that that was the purpose, and I assume for potential regulatory actions in the future.

MR. DOYLE: The main focus is the - this referring this situation for the future for future initiatives.

MS. HELTON: Right. And one thing that we're being asked to look at by our senior manager steering committee is, you know, our current - our current regulatory analysis guidelines allow some credit to be given to voluntary initiatives.

So we're being asked now to take a closer look at our current policy and whether or not we want to recommend the new changes going forward. Right now we don't - we don't have it.

We just got that question yesterday from our senior management so we're not prepared to really discuss that part. But this fast forward and - to go back and do an audit and possibly have some regulatory changes coming out of that audit.

CHAIR SCHULTZ: So this piece it seems still to be fluid and we'll want to hear more about it in October.

MEMBER BROWN: Actually, I learned something that - from Harold here when he says some people - I always thought in our previous discussions of some of these initiatives that they were - there was an industry assumption of a certain minimal - wrong assumption on my part and I would think that if you're going to do this that as part of your regulatory analysis there ought to be some minimum implementation that you would assume that would be passed on through that initiative that everybody would do that - at least that minimum, also maybe more but nobody would do zero.

And if that's not - it sounds like that's not part of the equation when you look at these initiatives at least based on what Harold says the actual - his comment about what the actual practice is. I'm sorry. I just did not realize -

MEMBER RAY: Don't misunderstand me. It's

up to every member of the industry to implement whatever the industry has committed to, period.

MEMBER BROWN: Yeah, but -

MEMBER RAY: I decide then what I'm going to do.

MEMBER BROWN: Right. And you decide you don't have to any compliance anyway.

MEMBER RAY: Huh?

MEMBER BROWN: You could decide that my plant is in compliance anyway if I do nothing.

MEMBER RAY: Decide anything. It's your conscience that's at stake here.

MR. CARUSO: May I make a comment? Mark Caruso. I think the way this has worked in practice there haven't been that many cases.

But usually I think in a case where the, you know, usually the way it works is the NRC identifies an issue, establishes a rule making and the industry comes in as a collective either through the owners group or through NEI and says well, you know, because they don't want to be hamstrung into one thing, you know, we think we can - we can address this in a more effective way. We want to address it.

We think it's important. And I think for us to entertain that it usually has to be in the form of,

you know, there's a formal communication from that body that says all the CNOs have agreed they will do - they will do X.

But as Harold has - Member Ray has said that the implementation is still really up to the licensees. There's no compliance.

The only compliance would be that they, you know, maintain their agreement as part of the industry consortium to do either, you know, some inspection program that's been offered up or some other, you know, NUMARC 9106 for shutdown requirements.

So it's usually that kind of thing where it's - it is an industry initiative. Everyone has agreed to follow that.

I don't think the NRC would be entertaining not putting a requirement in place if they - if, you know, ten licensees said well, you know, the rest of them are going to do it but I'm not going to do anything. That doesn't - I don't think -

MEMBER RAY: No, no, no. That's not the issue. The issue is, like you said, it's up to each individual to do what they understand the industry has committed to do and oftentimes these things are pretty -

MEMBER STETKAR: It's not as clear as X the

way you characterized it.

MEMBER RAY: I do X. And in good conscience I've decided I do X or less and it's up to me to do that. That's what I meant by diversity. Each person decides that they're in compliance. But that's their own decision.

CHAIR SCHULTZ: Yeah, we need to move forward so we don't lose members to another meeting.

MEMBER CORRADINI: We will - we will lose members. We will lose members to another meeting.

CHAIR SCHULTZ: So go ahead.

MR. DOYLE: Okay. So the main thing we would highlight as far as a change from the last time we were here we had previously recommended to screen or go through the licensee commitments or actions coming out of the IPE, IPEEE activities, identify ones that were the most significant and follow up on them. Were they - were they actually implemented, have they been maintained.

And we have revisited that and withdrawn that recommendation that came up earlier in the meeting then and I think all these main points have basically already been covered.

But that is a change. You asked for more - when we were here before you asked for more details about when we would credit these initiatives. We said

we would clarify that.

So the key word in that first sub bullet is high likelihood is that we're saying there is this threshold, need to ask this question - is there high likelihood that the industry will effectively implement and maintain the initiative over time.

So however you come to that conclusion and there are - that will be developed more some of the factors that should be considered.

Is this situation - is there a fixed cost that's kind of a one-time thing. You put it in, it's there and that's it or is there a recurring future cost - are there formal written commitments in place or not.

There's a program for keeping track of those or following up on those. The - is this a standard practice that's not controversial. Is the scope and schedule - what stages that is.

Is it still pending or is there plans to develop it more in the future. So those are some of the questions we, I think, also discussed and the other concerns that - questions that should be asked when trying to make this decision.

You also asked for more information about the oversight or what that would look like. For future type two initiatives where we have made this decision to

"accept them" what would this - and have this oversight - possible oversight in place what that would look like is to modify the internal guidance or, for example, management directive 6.3 and other office level instructions or the inspection program guidance to discuss the types of initiatives where oversight would be appropriate and what types of oversight could be put in place such as a one-time look like a temporary instruction or modifying existing inspection procedures to monitor a performance of the initiative and feedback into the regulatory decision if it's not effectively addressing the issue.

MR. DUDLEY: Maybe periodic reporting requirements -

MR. DOYLE: Or reporting requirements.

MR. DUDLEY: - would be another oversight mechanism.

MR. DOYLE: So this is a summary pretty similar to the first line I started with so I don't think there's anything new there. And just to highlight though that the NRC - the last bullet the NRC in this recommendation would not take any actions, any new actions regarding type one or type three initiatives.

MEMBER ARMIJO: Just a question for information. I think this is a type one type voluntary

initiative. The BWR vessel internals program - that's a type one type.

MR. DOYLE: Right.

MEMBER ARMIJO: Is there periodic communication from NEI of the effectiveness of this program or, you know, members dropping out or do you have any idea that - to me that's a very important part. I'd be foolish to not do it even if there was no safety implication but -

MR. DUDLEY: I believe at the last meeting I believe Bill Reckley offered up an answer. I think he says there's a reporting requirement.

MEMBER ARMIJO: There is a reporting -

MR. DUDLEY: There's a periodic reporting agreement on that so we can check.

MEMBER ARMIJO: Yeah, and just kind of the level of detail that's - yeah, everybody's working hard. You know, is there enough meat in it that says yeah, there's - it's a substantive report. It tells you something about -

MEMBER STETKAR: I can't even recall in terms of license renewal what it might be. In terms of license renewal I think they typically do reference it in -

MEMBER ARMIJO: Even in power upgrade

reviews everybody that's come around and so I'm under the impression that it's something that's pretty rigorous. But, you know, Harold's comments make me a little worried.

MR. DUDLEY: Well, see, there is an underlying regulation there too. In the event somebody chose not to implement that one we would in that case be able to issue a violation.

MEMBER RAY: Yeah. I don't think somebody is saying I'm not going to do this is the issue. I think this - the point of second sub bullet, point under this - anyway, the one that says revise the oversight process to verify implementation effectiveness of future type two initiatives which the NRC views as important.

I mean, that's a positive step that if done provide a basis that seems to me to be sort of lacking right now.

You know, I got a lot of things to worry about and running a plant and how I implement a industry initiative that was committed to five years ago is something that's, you know, it's on my list somewhere I'm sure.

But it's something that I just ask the question how are we taking that into account. Believe me, I comply with my tech specs every dadgum day without

exception. So -

CHAIR SCHULTZ: Considering the overall discussion we've had this morning, I'd like to go around the table and ask the members if there's anything in particular you want to be sure the staff addresses in the October subcommittee meeting upcoming. Dennis, can we start with you?

MEMBER BLEY: Yeah. Just one thing. I really recommend if we haven't included the kind of description that was presented earlier that you go back and look at our transcript.

I think it's a good description that deserves to be prominent in this presentation further, I think, doing all the things he talked about.

You know, next to the thing I brought up where I said we were missing the boat and I think if we're doing those we're probably not missing the boat and I think, you know, the stuff that sounded stovepipe probably isn't because we've got the same thing with you involved in those other program.

So I think that's getting picked up. But I think that would be a good organizing discussion.

CHAIR SCHULTZ: Thank you. Harold?

MEMBER RAY: I think I've commented enough. I don't want to take time out and repeat things I've said

before.

Recommendation one is inherently I guess to me a little vague in terms of what it meant to accomplish. We've had discussion about that today. I revised my understanding of what recommendation one is supposed to entail.

The larger question is what are we doing. I mean, as onerous as things can be and as much as we want to avoid unnecessary actions, on the other hand we've got to avoid anything like Fukushima which all of this is under that umbrella happened and so that's kind of a test I keep coming back to in my own mind. I have no reason to think they're not doing what needs to be done though.

CHAIR SCHULTZ: Sam?

MEMBER ARMIJO: I think it was a good presentation. I think the staff's on the right track. I don't need anything special.

CHAIR SCHULTZ: Mike?

MEMBER CORRADINI: No comment at this time.

CHAIR SCHULTZ: Joy?

MEMBER REMPE: No comments.

CHAIR SCHULTZ: Charlie?

MEMBER BROWN: No, thanks.

CHAIR SCHULTZ: John?

MEMBER STETKAR: For some reason he left me

to the last. Mary, I'd echo Dennis on recommendation one.

One thing I thought of, Mary, you threw down the gauntlet. The ACRS is perfectly happy to do the defense in depth stuff. Look at our transcript from the previous meeting.

One of the questions that I raised was your notion that the defense in depth would be deterministic with PRA supporting it. One of the questions we asked and Sam brought it up earlier is how does one determine the adequacy of defense.

In other words, how do you measure when you have enough - what sort of tools are you proposing for that? Because I'll bring back my favorite, meteorite.

You know, how big a meteorite shield do you need because that is an event that can cut through all of your different levels of plants in depth.

You know, how do you measure the adequacy of do you need that - to what extent do you need that. So if the SECY paper can sort of flush out a little bit of that notion how those two deterministic versus some sort of metric might help.

CHAIR SCHULTZ: Ron?

MEMBER BALLINGER: No comment.

CHAIR SCHULTZ: Pete, any comments?

MEMBER RICCARDELLA: No comment.

CHAIR SCHULTZ: At this point I'd like to open up the discussion for any public comments and I'll ask any individuals in the room. Yes? Come to the microphone please. Thank you.

MR. LYMAN: This is Edwin Lyman from the Union of Concerned Scientists. I'd like to reiterate our previous concerns that we are very disappointed with the direction of the staff's pursued recommendation one - that we think continuing to narrow its focus and wordsmith what the task force originally called for is the kind of tunnel vision and reflects an attitude of complacency which I think is what led to Fukushima in the first place.

Just the issue of whether existing regulatory processes are okay for addressing these kinds of issues, I'd just like to raise a couple of examples.

One, the issue of multiple reactor accidents came up and if you look at the history of this issue in the course of the SORCA program it came up whether they should evaluate multiple reactor accidents at the sites that were being evaluated. It was decided not to do that but to actually consider it as a generic issue.

That was in 2007. When Fukushima occurred

in 2011 they had not - the NRC had not yet decided whether to accept that into the generic issues program.

So don't tell me that that is a well functioning process for looking at these issues. Another is whether the current mitigation strategies have gotten us is looking at the kinds of chains of events and broaden our scope that we heard about before - whether the processes are broad enough.

If you look at the guidance for the FLEX program for mitigation strategies where you see what isn't being considered, what's being excluded in evaluating the effectiveness of mitigation strategies you assume the reactor is safely shut down, DC power supplied by plant batteries initially available, no concurrent events need to be assumed, no additional random failures need to be assumed except for the original emergency power sources and you can focus on - at power events and give very little attention to any other modes.

So again, the processes are not leading to the breadth that really needs to be considered here when you're thinking about - when you're trying to brainstorm are you covering all the bases with regard to beyond design basis events.

And so in that respect, we think that the

effort that is not being pursued here where you try to do an IPE, IPEEE study again except using updated guidance and procedures everyone knows that the IPE was done in a scattershot way with a lot of inconsistencies across the whole fleet.

If you took an approach, a stress test type approach like was done in other countries, maybe not to the extent that it needs to be done but actually think are you missing any vulnerabilities from the current approach of waiting for things to happen were, you know, issues to come up as they come up, why shouldn't there be a systematic attempt from the Office of Research to brainstorm initiating events and sequences that may be overlooked?

In cyber security you have teams of hackers who are constantly challenging systems looking for vulnerabilities. There is no such attempt going on today in the development of PRA.

That's why, for instance, the ASP comment came up. Why are consistently 25 or 30 percent of the events that occur not being modeled in the PRAs? That's because no one is actually trying to brainstorm events that have not been previously considered.

So we think that recommendation one if you're talking about trying to have a consistent approach

that's not a patchwork it also means trying to identify initiating events and sequences that are being overlooked so that you treat those consistently. You don't overlook risks in significant events.

So, you know, again, we would urge a broader approach to recommendation one and we support those people on the committee who've raised the issue of whether this is too reactive approach or not.

That said though, we do think that defense in depth and a reexamination of the misuse of voluntary initiatives and the regulatory process those are important pieces but you need to do more. Thank you.

CHAIR SCHULTZ: Thank you. Other comments from the room? With that, I'll just ask is there anyone on the telephone lines? If so please identify yourself.

Hearing no response, I presume no one is on the line and there are no public comments or comments from the telephone line. So that ends the public comment period.

I want to thank the staff for the presentations this morning. Once again, we've learned a lot with the - some of the changes in direction and elaboration and reemphasis in other areas that are moving forward the study and the evaluations that you are doing.

So we'll look forward to seeing you again

in October and for the subcommittee meeting and prior to that reading the draft documentation that you're going to provide. Again, thank you very much.

(Whereupon, the above-entitled meeting concluded at 12:13 p.m.

Fukushima Near Term Task Force (NTTF) Recommendation 1: Improved Regulatory Framework

NRC Staff Presentation to the Fukushima Subcommittee of the Advisory Committee on Reactor Safeguards

September 4, 2013

Outline of Presentations

- Overview of Recommendation 1
  - Review actions taken and development of staff recommendations
- Discuss changes to staff positions since May 23, 2013 ACRS subcommittee meeting
- Status and next steps
- Respond to ACRS questions from May 23 meeting

Evolution of NRC Approach

- 12 potential framework improvement activities
  - Discussed in August 2012 ACRS meeting
- Four options
  - Described in Nov. 2 white paper (ML12296A096)
  - Discussed in December 2012 ACRS meeting
  - Public comment period ended on December 14, 2012
- Three improvement activities
  - February 2013 white paper describing different ways to implement improvement activities (ML13053A108)
  - May 15, 2013 white paper with working group's recommended improvement activities (ML13135A125)
  - Public comment period ended on August 15, 2013

Changes to Staff Positions Since May 23, 2013 Meeting

- Staff did not prepare 4th white paper
- Staff will provide draft SECY paper to ACRS prior to October 18, 2013 subcommittee meeting
- Improvement Activity 1 – New category of requirements
  - Staff will establish goal to develop standard set of treatment requirements, change process, etc. for design basis extension requirements
- Improvement Activity 2 – Defense-in-depth
  - Staff will not link preparation of DID policy statement for power reactors to delivery of RMRF agency-wide policy statement
- Improvement Activity 3 – Voluntary initiatives
  - Staff has withdrawn the previous recommendation to review IPE/IPEEE commitments to ensure they were implemented and maintained over time

Status and Next Steps (cont.)

- Complete SECY paper and enclosures; provide to ACRS mid-late Sept. 2013
- ACRS subcommittee meeting on Oct. 18, 2013
- ACRS full committee meeting on Nov. 7 & 8, 2013
- Receive ACRS letter Nov. 13, 2013 (if possible)
- Evaluate ACRS comments; modify SECY as appropriate; get management approval; and provide paper to Commission on Dec. 2, 2013

Responses to ACRS Questions

ACRS Questions/Concerns from May 23 Meeting

- Issue 1 - Concern that proposed reliance on current regulatory processes to identify and evaluate potential safety concerns to determine the need for new regulations is not a pro-active approach
  - Explain why the existing process for developing risk information for use with the current regulatory analysis guidelines is adequate?
  - How could the current risk assessment process be improved?

ACRS Questions/Concerns from May 23 meeting (cont.)

- Issue 2 - What are the acceptance criteria for the various levels of D-i-D (slide 27)?
  - How can you determine acceptability without a PRA?
- Issue 3 – For the voluntary initiatives improvement activity, provide more details on:
  - The criteria for when the staff would credit voluntary initiatives in the base case of the regulatory analysis for a potential rulemaking
  - The nature of the infrastructure and guidance to be developed for oversight of the Type 2 voluntary initiatives

Improvement Activity 1

Summary of Proposed Design Basis Extension Category

Summary of Proposed Approach for Design Basis Extension Category

Design basis extension category which:

- Is generic (does not require a plant-specific PRA)
- Include requirements needed for adequate protection and those justified as a cost-effective substantial safety enhancements
- Establish detailed staff guidance for issuing new design basis extension rules
  - Treatment, change process, FSAR update, training, analysis methods, etc.
- Is applicable to current and future licensees and applicants
- Specified existing requirements "grandfathered" without change
- Applies only to new/additional design basis extension requirements
- Can be implemented on ongoing Fukushima rulemakings
- Low cost for NRC and licensees

Recommended Criteria for Inclusion in Design Basis Extension Category

Continue using existing criteria:

1. Identify issues/concerns via current processes
   - Generic issues, ROP, reactor operating experience program, etc.
2. Evaluate issues to determine need for rulemaking
   - Adequate protection (determination not affected by this category)
   - Safety enhancement - Use existing criteria in Reg. Analysis guidelines (updated as approved by Commission)
     - Cost-justified significant safety improvements (backfits) – criteria in NUREG/BR-0058, Figure 3.2 (ΔCDF, CCFP, & cost-effectiveness)
     - Forward-looking (not backfits) – cost-effectiveness criterion

ACRS Issue 1

Adequacy of Existing Processes

Issue 1 – Adequacy of Existing Processes: Description of Processes to Identify Issues/Concerns

Processes to identify candidates for rulemaking:

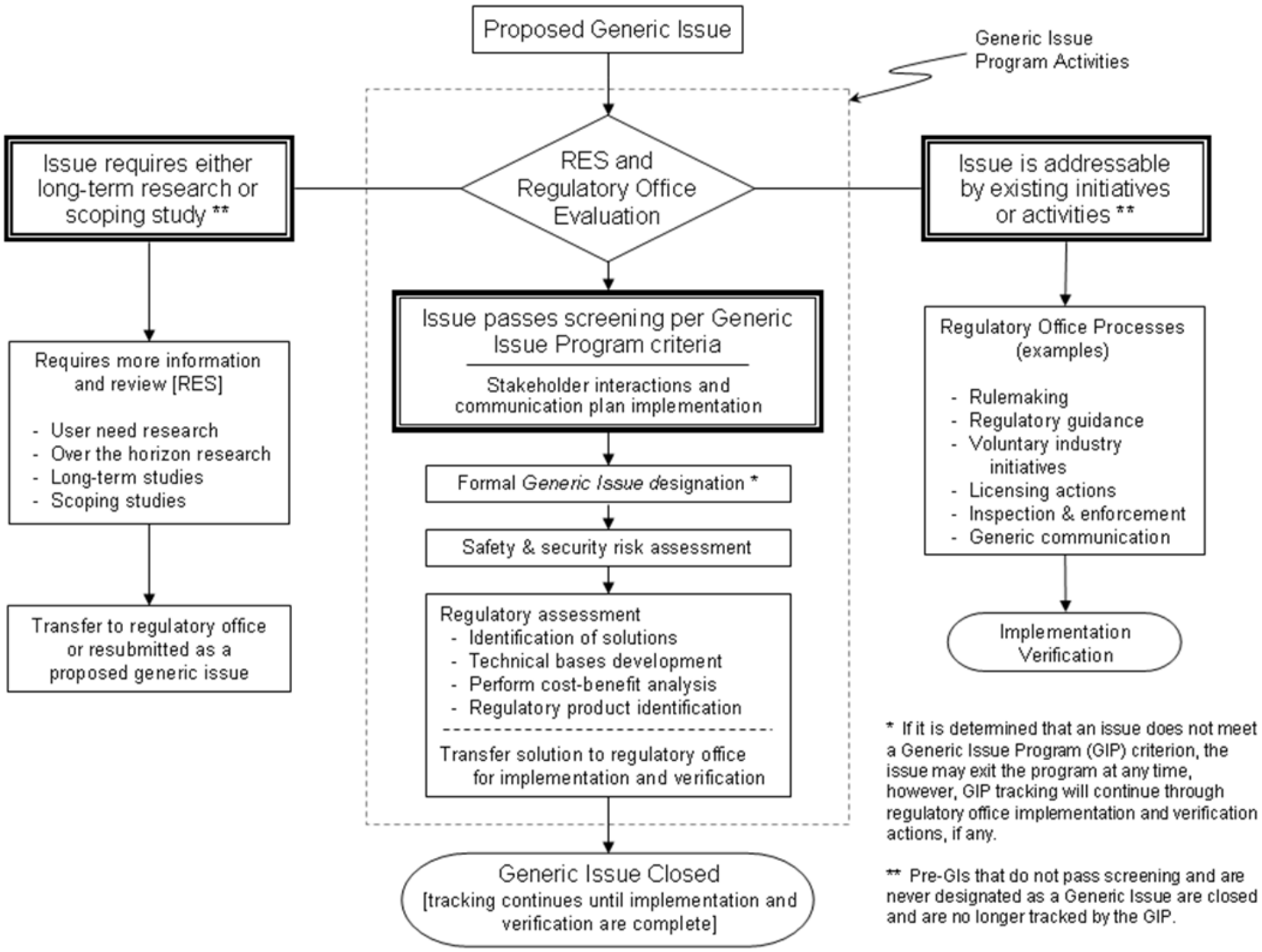
- Generic issue evaluation process
  - Management Directive 6.4 – Generic Issues Program (Nov. 17, 2009)
- Reactor Oversight Process
  - Task Interface Agreements
- Reactor Operating Experience Program
  - MD 8.7 and LIC-401/REG-112 - NRR-NRO Reactor Operating Experience Program (Rev. June 3, 2013)
  - Collect – Screen – Evaluate – Apply
- Public petition processes (2.802 – Rulemaking; 2.206 Enforcement)
- Dynamic and evolving nature of NRC's regulatory processes described in NUREG-1412 and 1991 license renewal rule (56 FR 64943; pp. 64947 – 51)

Issue 1 – Adequacy of Existing Processes: Generic Issue Evaluation Process

- Generic safety concerns are addressed through the Generic Issues Program (GIP)
- Implementing procedures for GIP provided in NRC Management Directive 6.4
- GIP includes 5 stages:
  - Identification
  - Acceptance Review
  - Screening
  - Safety/Risk Assessment
  - Regulatory Assessment

Issue 1 – Adequacy of Existing Processes: Generic Issue Evaluation Process

Generic Issue Program in Perspective With Other Regulatory Programs and Processes



* If it is determined that an issue does not meet a Generic Issue Program (GIP) criterion, the issue may exit the program at any time, however, GIP tracking will continue through regulatory office implementation and verification actions, if any.

** Pre-GIs that do not pass screening and are never designated as a Generic Issue are closed and are no longer tracked by the GIP.

Issue 1 – Adequacy of Existing Processes: Reactor Oversight Process

- Inspectors occasionally identify potential safety concerns for possibly regulatory action although there is no violation or performance deficiency.
  - Identified concerns forwarded to NRR HQ via task interface agreements for further technical review (revision of Part 21)
- There is a built-in periodic realignment process for the Reactor Oversight Process every two years.
  - Staff focuses on individual areas and review all available data including statistics for violations, non-cited violations, findings, etc. to look for trends.
  - Staff refocuses resources as necessary or considers other regulatory action.

Issue 1 – Adequacy of Existing Processes: Reactor Operating Experience Program

- MD 8.7 and joint NRR/NRO Office Instruction LIC-401/REG-112 establishes Reactor Operating Experience program (OpE)
- The OpE program evaluates inputs from wide variety of sources (NRC- RES, NSIR, NRR, NRO, OIP, Regions; Industry; International) to determine appropriate regulatory actions. Typical actions include:
  - Inputs to Reactor Oversight Process
  - Inform internal stakeholders (management briefings, newsletters)
  - Inform external stakeholders (Generic communications)
  - Analyses that may support higher level generic communications, orders, or rulemaking
- Four Steps: Collect inputs -- Screen -- Evaluate – Apply

U.S.NRC
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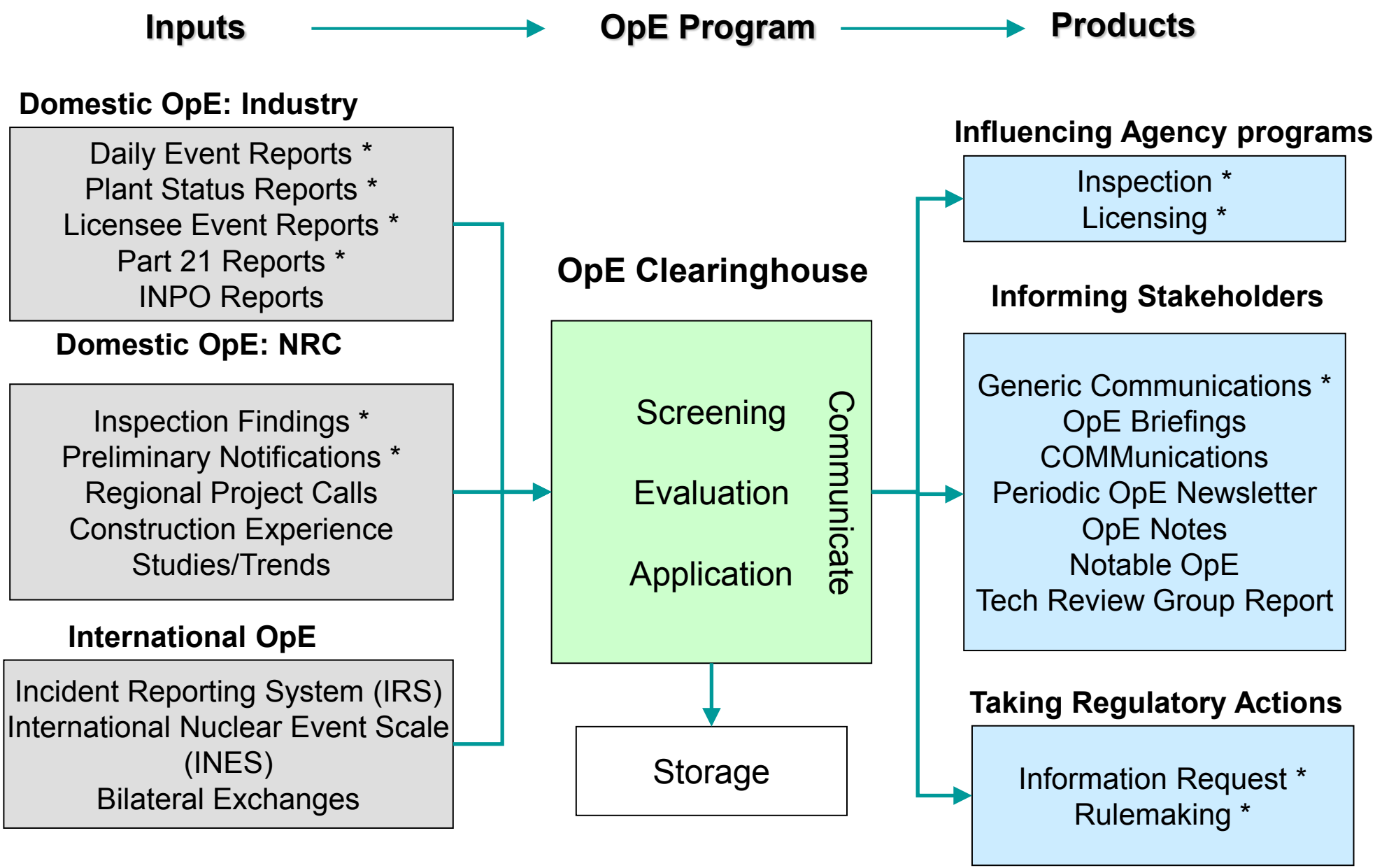
Protecting People and the Environment

Reactor OpE Overview



* Available on the public NRC Web Page

Issue 1 – Adequacy of Existing Processes: Public Petition Processes

Public input is also sought and used to identify candidates for rulemaking:

- Petition for rulemaking process (10 CFR 2.802 - 2.803)
  - Office Instruction guidance (NRR, LIC-300; NRO, REG-114)
  - Several recent petitions have raised issues that were addressed by rulemaking
- Petition for enforcement action (Directors' Decision) (10 CFR 2.206)
  - Management Directive 8.11, "Review Process for 10 CFR 2.206 Petitions"

Issue 1 – Adequacy of Existing Processes: Processes to Evaluate Need for Rulemaking

1. Adequate protection

- No changes to current criteria; determination is made by Commission

2. Safety enhancements

- Use existing criteria in Reg. Analysis guidelines (NUREG/BR-0058) – updated as approved by Commission
  - Cost-beneficial significant safety improvements – Backfits (Fig. 3.2)
    - Significance criteria: Δ CDF and conditional containment failure probability (CCFP)
    - Cost-beneficial
  - Forward-looking safety enhancements (non-Backfits)
    - Cost-beneficial
  - Update Reg. Analysis guidelines as approved by Commission
    - Ongoing – Updating values for:
      - Cost of statistical life ($2,000 → $4,000/pers.-rem)
      - Increased replacement power costs
    - Future – Improvement Activity 2 - Include criteria addressing defense-in-depth

Existing Process for Preparing Risk Analyses for Regulatory Decisions

- Generic Issues Program, Operating Experience Program and Regulatory Analysis guidelines use risk insights to help make regulatory decisions
- How does NRC obtain these risk estimates?
  - Use existing risk analysis models (e.g., SPAR, NUREG-1150, COL) when applicable
  - Supplements to existing models or supporting information may be needed for a credible assessment of the issue:
    - ASP analysis
    - Requests for information from industry
    - Support from National Laboratories
  - Staff performs qualitative assessment using engineering judgment and expert opinion when issue is not amenable to quantitative assessment
  - Assessments are subject to review by a Generic Issues review panel, CRGR, and ACRS

Existing Process for Preparing Risk Analyses for Regulatory Decisions

- Some Guidance on use of PRA in assessment of generic issues and in backfit analysis given in NUREG-1489:
  - Use of existing PRA(s)
  - Level of Analysis
  - Uncertainty Analysis
  - Truncation Level
  - Decision Criteria
  - Quality Assurance and Review

Existing Process for Preparing Risk Analyses for Regulatory Decisions

- Can these methods be improved?
- Yes, by requiring operating reactor licensees to perform and periodically update PRAs (similar to the current requirements for new reactors)
- But would such a requirement be cost-effective for operating reactors?
  - Probably not
    - PRA costs ($200* million to $1.0 billion**) are substantial; backfit rule applies
    - Many PRAs have already been performed; design issues addressed
    - Operational programs are risk-informed
      - Reactor Oversight Process
      - Maintenance rule
    - Large uncertainties on magnitude of potential safety increases possible with PRAs

* NRC and PWROG estimates

** NEI estimate in "Inside NRC" (November 19, 2012)

Summary on Adequacy of Existing Processes

- NTTF Recommendation 1 does *not* fault NRC's regulatory processes for being reactive
- NTTF's regulatory framework concerns:
  1. Clarity of regulatory framework (logical, systematic, coherent)
  2. Gap in regulatory structure regarding beyond design-basis events
  3. Concern over reliance on voluntary initiatives (historical inconsistency)
- Reactive aspects of regulatory process are not necessarily weaknesses
- Events we react to often reveal previously unknown information or phenomena that could not have been pro-actively identified
  - Risk assessments cannot identify unknown phenomena that are not modeled in the PRA
- True weaknesses would be a reactive approach focusing too narrowly on events
  - Not addressing root causes
  - Missing events or failures related/similar to other observed events

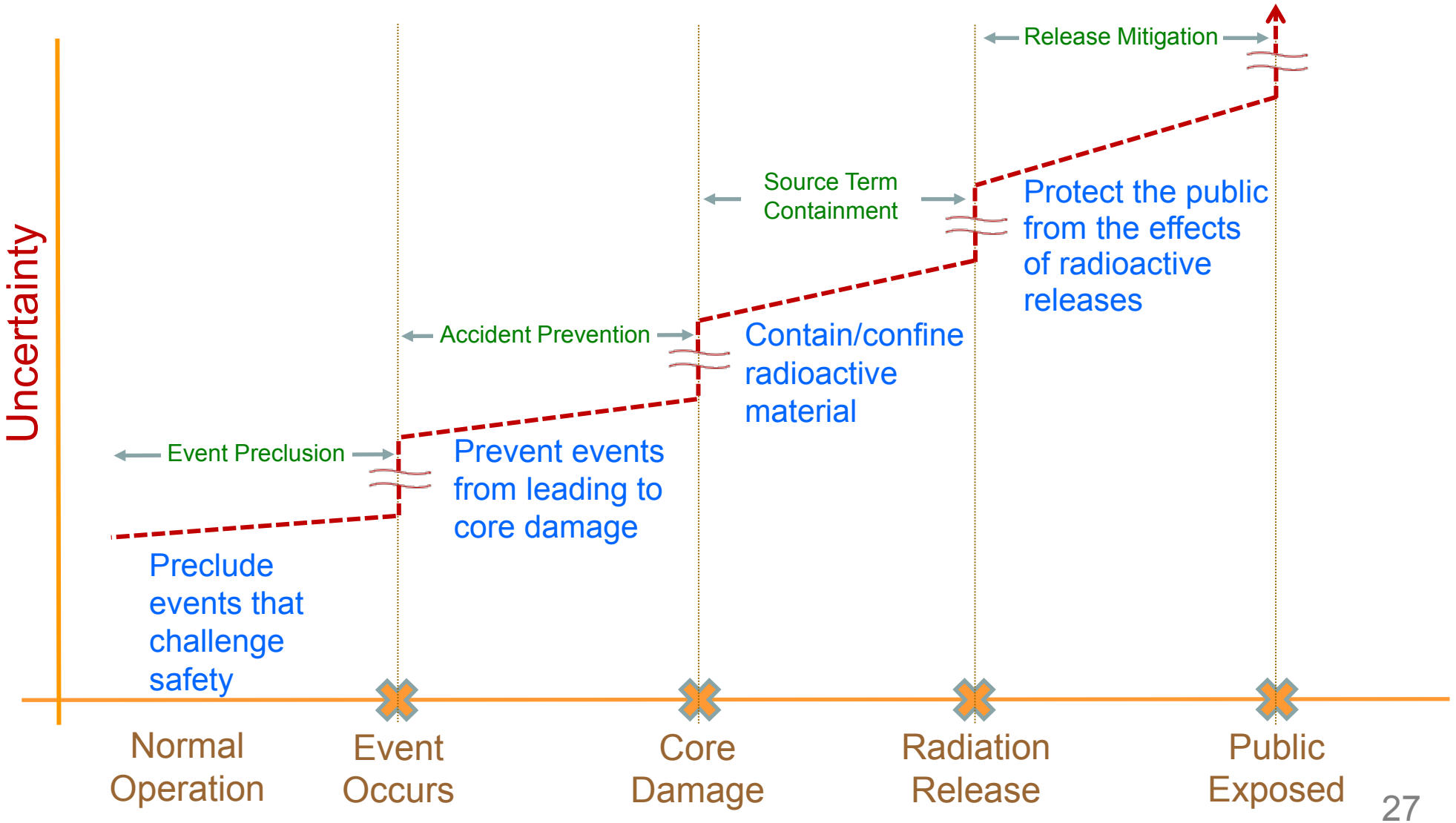
ACRS Issue 2

Adequacy of Levels of Defense-in-depth

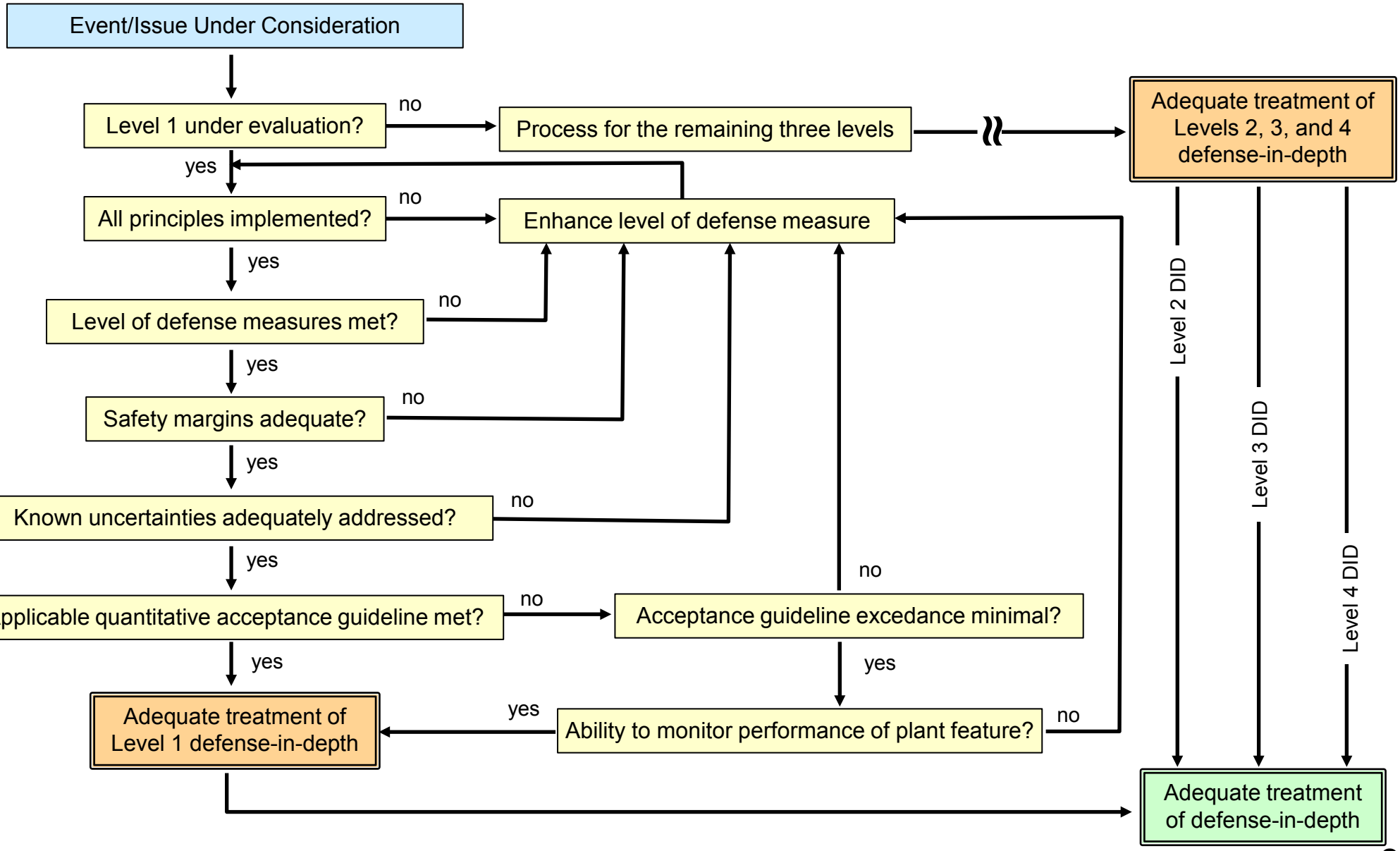
SECY Paper on Defense-in-Depth

- SECY paper recommends Commission approve development of reactor policy statement on DID
- Paper provides examples what may be, for reactors
  - A DID structure
  - A DID definition
  - A set of DID principles
  - A set of levels of defense
  - A DID decision process
  - A set of DID decision criteria
- NRC staff will not develop the above until the Commission approves moving ahead with a DID policy statement
  - Stakeholder input will be sought
  - ACRS will be consulted

Nuclear Power Reactor Defense-in-Depth May Consist of Four Levels, Defined by a Step Increase in the Uncertainty at Each Accident Sequence Stage



Draft Example Decision Process



Criteria for Determining Adequacy of DID

- **Examples**:
  - Significance of uncertainties
  - Quantitative acceptance guidelines; e.g.,
    - goals on component, system, human reliability, accident or damage prevention, and risk of exposure of workers or the public
    - Overall risk
  - Performance monitoring desired to monitor degradations in performance
  - Hazards which must be considered in the design (man-made and natural)
  - Design standards
  - Consequence criteria
  - Response capability
- PRA may be used but only in conjunction with deterministic criteria

ACRS Issue 3

Details on Voluntary Initiative Improvement Activity

Improvement Activity 3 Summary

- Activity 3 would clarify the role of certain industry initiatives in NRC's regulatory processes:
  - Re-affirm the Commission's expectation that industry initiatives may not be used in lieu of NRC regulatory action on adequate protection issues
  - Specify when certain industry initiatives may be credited in the baseline case for regulatory analyses
  - Provide guidance regarding what level of NRC oversight is appropriate for *future* voluntary initiatives
  - Review *existing* Type 2 initiatives and verify implementation of the most safety significant initiative(s) at 6 – 9 facilities

Improvement Activity 3 Changes

- Note: Staff has **withdrawn** previous recommendation to verify implementation and maintenance of certain IPE/IPEEE commitments
  - IPEEE has been overtaken by events (e.g., NFPA 805, actions related to NTTF recommendations on seismic and flooding)
  - The IPE reviews were done 20 years ago. The understanding of each plant's risk profile is different today, so the plant improvements may no longer be necessary or appropriate for achieving risk reduction.
  - It is not likely that plant improvements identified in the IPE program that have not been implemented or maintained would pass the backfit rule.
  - There are other issues with high safety significance that the NRC and licensees are focusing on right now.

ACRS Questions/Concerns from May 23 meeting

- Issue 3 – For the voluntary initiatives improvement activity, provide more details on:
  - The criteria for when the staff would credit voluntary initiatives in the base case of the regulatory analysis for a potential rulemaking
    - Industry initiatives may be credited in the base case in the regulatory analysis only when there is a high likelihood that the industry will effectively implement and maintain the initiative over time
    - Fixed costs that have already been expended or recurring future costs?
    - The extent to which written commitments exist
    - The degree to which the industry initiative is noncontroversial and standard industry practice
    - The scope and schedule for industry initiatives that are still pending

ACRS Questions/Concerns from May 23 meeting (cont.)

- Issue 3 – For the voluntary initiatives improvement activity, provide more details on:
  - The nature of the infrastructure and guidance to be developed for oversight of the Type 2 voluntary initiatives
    - Update relevant internal staff guidance to implement policy that the NRC will consider oversight of future Type 2 voluntary initiatives
    - Management Directive 6.3, "The Rulemaking Process"
    - Inspection program guidance or Office-level instruction describing options for oversight of a particular initiative

Improvement Activity 3 Current Description

- Implement with either a Commission Policy Statement or revisions to existing guidance:
  - Reaffirm that industry initiatives may not be used in lieu of NRC regulatory action on adequate protection issues
  - Provide guidance to staff regarding Type 2 industry initiatives:
    - Industry initiatives may be credited in the base case in the regulatory analysis only when there is a high likelihood that the industry will effectively implement and maintain the initiative over time
    - Revise oversight processes (inspections, audits) to verify the implementation and effectiveness of ***future*** Type 2 initiatives which the NRC believes are important from both a safety and regulatory perspective
- Verify implementation of most safety significant ***existing*** Type 2 initiative(s) at several facilities
- NRC would take no actions regarding Type 1 and Type 3 initiatives

Back-up Slides

Types of Industry Initiatives

from Regulatory Analysis Guidelines (NUREG/BR-0058, Rev 4)

- Type 1: those put in place in lieu of, or to complement, a regulatory action to ensure that existing requirements are met (e.g., BWRVIP, PWR MRP)
- Type 2: those used in lieu of a regulatory action in which a substantial increase in overall protection could be achieved with costs of implementation justifying the increased protection (e.g., SAMGs, BWR MK-I hardened vent, Backup power for H_2 igniters)
- Type 3: those that were initiated to address an issue of concern to the industry but that may not be a public health and safety concern (e.g., groundwater monitoring)

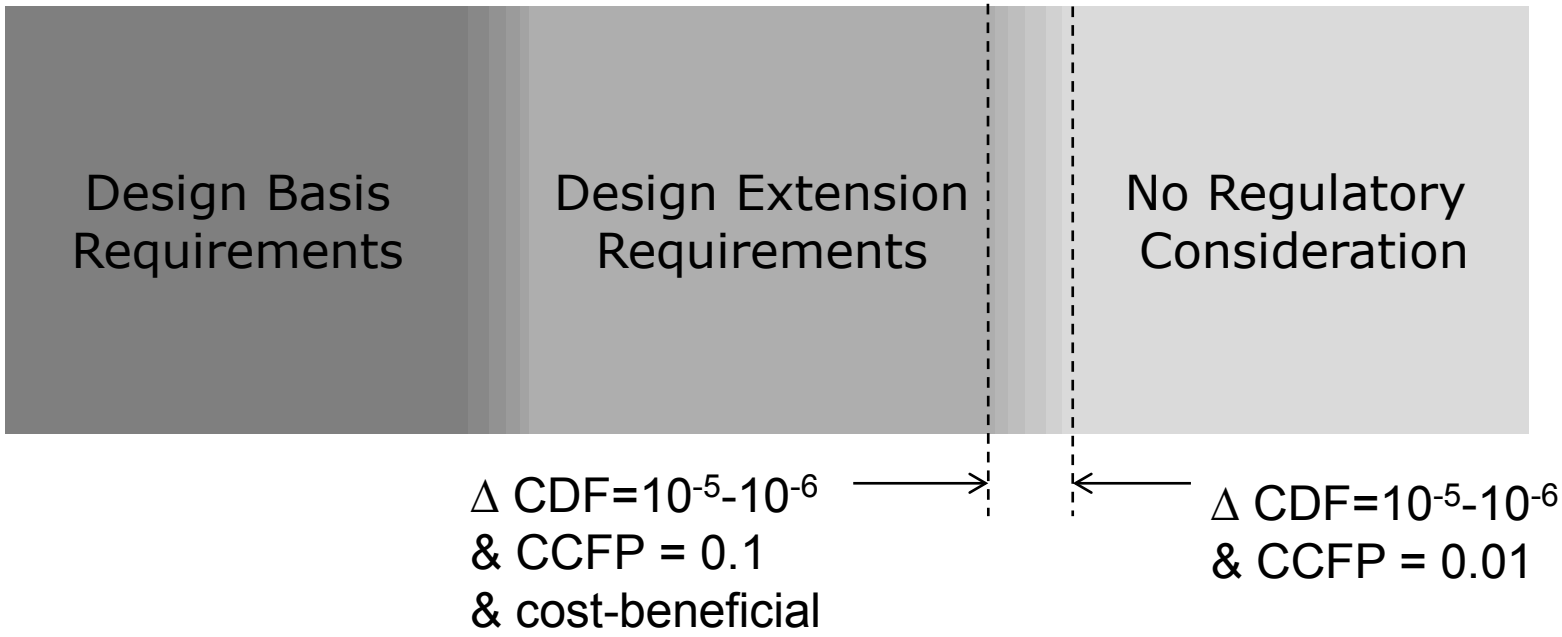
Existing Type 2 initiatives

- Low power/shutdown risk
- Severe Accident Management Guidelines
- Hydrogen igniter backup power for BWRs and ice condensers
- Industry Initiative on Underground Piping and Tanks Integrity
- Heavy load lifts
- Motor Operated valves
- Substandard Non-Safety-Related Molded Case Circuit Breakers
- Piping Erosion/Corrosion
- Station Blackout (Diesel Reliability portion)
- Oil Loss in Rosemount Transmitters
- Design Basis Programs
- Fraudulent Flanges
- Comprehensive Procurement Initiative
- Managing Regulatory Commitments
- Safety culture initiative

Recommended Criteria for Inclusion in Design Basis Extension Category

Continue using existing criteria:

1. Identify issues/concerns via current processes
   - Generic issues, ROP, operating experience program, etc.
2. Evaluate need for rulemaking
   - Adequate protection (determination not affected by this category)
   - Safety enhancement - Use existing criteria in Reg. Analysis guidelines (NUREG/BR-0058, Figure 3.2) (update as approved by Commission)



Categorization Approach Involves 2 Activities

1. **Define category**

2. **Identify requirements** (rules and orders) that go into the category

Working Group Recommendation

- Define a generic design basis extension category in internal staff guidance
- Populate the category – forward-fit only
  - New issues/information/rules

Activity 1 – Establish New Design Basis Extension Category

- NRC regulations already include a de-facto design extension category
  - e.g., SBO, ATWS, 50.44, 50.54(hh)
  - 50.46a, risk-informed GSI-191 rule, & Fukushima rules
- Rulemaking is not required to establish a new category of events (although recommended by NTTF and RMTF)

Contents of Staff Guidance

- Define "Design basis extension conditions (events and hazards)"
- Specify how to write future requirements (regulations and orders) to ensure they are consistent, coherent, and complete
  - Well-defined performance goals
    - Analysis methods & acceptance criteria
  - Treatment requirements
    - Design criteria, availability, testing requirements, QA/QC, training
    - Internal guidance would also provide general guidelines to assist staff in determining treatment requirements
  - Reporting requirements, including FSAR updating
  - Change process
    - Specify appropriate change processes (if § 50.59 not applicable) for licensee-initiated changes to SSCs utilized to comply with design extension requirements

Identify Design Basis Extension Requirements

- "Grandfather" SBO, ATWS, 50.44, 50.54(hh), etc. as design basis extension requirements
- Add ongoing/future design basis extension rules
  - 50.46a, risk-informed GSI-191 rule, Fukushima rules
- Working Group recommends not searching for additional events (NTTF Recommendation 1.4) because:
  - Ongoing rulemakings (mitigating strategies rule) and NTTF Recommendations 2 – 11 will address and investigate a wide range of safety concerns for needed safety improvements
  - NRC has processes that generically address new issues as they arise (generic issues program, ROP, petition for rulemaking process, etc.)
  - Existing plants have performed IPE and IPEEE studies
  - New reactors are required to have plant-specific PRAs
  - Current NRC resource limitations

Evaluation of Other Approaches for New Category

Improvement Activity 1:
Event Identification and Categorization Alternatives

Key Decision	Options
Generic or Plant-Specific?	• Generic • Plant-Specific • Both
Adequate protection?	• Adequate protection • Safety enhancement • Both • Also address deterministic design basis (safety-related)
Require Plant Specific PRA?	• Yes • No
Applicability? (licensed entities)	• Future licensees and applicants • Current and future licensees and applicants
Forward-fit or retrospective applicability	• Applies only to new/additional beyond design-basis events identified in future • Applies to beyond-design basis events identified in future ***and*** applies to currently licensed design such that it could potentially change (increase or decrease) requirements for currently regulated events and impose new requirements on currently non-regulated events identified for the new category

Evaluation of Approaches for New Category

- WG did a screening review and selected 3 categorization approaches to evaluate
  - Approach #1 - Plant-specific approach with required PRA
  - Approach #2 - Plant-specific approach without required PRA
  - Approach #3 - Generic approach without required PRA

Evaluation of Approaches for New Category

- Both NTTF and RMTF recommended establishing a design extension or design enhancement category of events/accidents
  - Look for new events
  - Re-categorize certain design-basis requirements
- WG identified three reasons why NTTF & RMTF recommended creating and populating a new category of events and accidents:
  - Increase **safety**
  - Increase **coherency** of how our regulations address safety issues
  - Reduce unnecessary licensee **burden**

Evaluation of Categorization Approach #1

- WG concluded that **Approach #1** (plant-specific with required PRA) would be the most systematic and well defined approach
  - Could increase **safety** – uncertainty as to level of increase
    - Could identify plant-specific risk outliers
    - Unlikely to result in major safety benefits
      - Would not identify unforeseen concerns not modeled in PRA
      - Ongoing Fukushima efforts will further reduce risk
  - Would increase **coherency** of plant-specific licensing basis with safety
    - Resulting plant-specific licensing basis based on PRA might decrease public confidence
  - Could reduce licensee **burden**
    - Burden reduction offset by increased burden to maintain PRA* and plant-specific licensing basis
    - NRC inspection burden would increase

* Note that staff did not attempt to quantify all types of cumulative benefits that could potentially result from having PRAs

Evaluation of Categorization Approach #1 (cont.)

- Consistent with current Commission policy to use plant-specific PRAs and to increase safety of new reactors by performing severe accident evaluations
- **WG does not recommend Approach #1** because costly for Part 50 licensees and has uncertain safety benefits
  - Cost* of required PRAs
    - PWROG estimated $200 to $380 million
    - NRC estimated $48 to $200 million

* Note that staff did not attempt to quantify all types of cumulative benefits that could potentially result from having PRAs

Evaluation of Categorization Approach #2

- WG evaluated **Approach #2** - plant-specific without required PRA (e.g., expert panels using risk insights to identify events):
  - Unsure whether approach would increase **safety**
    - Expert panels (not having the benefit of an updated PRA) might not be able to find plant-specific risk outliers
  - Could increase **coherency** of plant-specific licensing basis with safety
    - Resulting plant-specific licensing basis based expert panel judgment might decrease public confidence
  - WG is concerned that expert panel recommendations on how to reduce DBA requirements to eliminate **burden** might be subjective and inconsistent from plant to plant

Evaluation of Categorization Approach #2 (cont.)

- Approach #2 difficult for staff to implement
  - NRC must establish clear criteria/thresholds in regulations so that licensee panels can identify
    - which risk outliers to mitigate
    - which non risk significant DBAs can be re-categorized to allow reduced mitigation
  - WG is concerned that without PRA it would be difficult to establish criteria that would result in consistent level of safety among licensees
- **WG does not recommend Approach #2** because of concerns about its effectiveness and difficulty for staff to implement

Evaluation of Categorization Approach #3

- **Approach #3** – generic without required PRA
  - Unlikely it would directly increase **safety** by identifying new events/requirements because utilizes current processes
    - Industry FLEX/SBO/mitigation strategies rule will provide additional protection against unspecified beyond-DBA conditions
    - NRC has well-defined processes that generically address new issues as they arise (generic issues program, ROP, operating experience program, petition for rulemaking process)
    - Fukushima NTTF Recommendations 2 – 11 are investigating wide range of safety concerns for possible additional requirements
    - Existing plants have performed IPE and IPEEE studies
  - New reactors are required to have plant-specific PRA models
    - Identify and address plant-specific design and operational vulnerabilities
    - Analyze design features to prevent and mitigate severe accidents

Evaluation of Categorization Approach #3 (cont.)

- Would not reduce unnecessary **burden**
- Would increase **coherency**
- But **WG does not recommend Approach #3-** to use rulemaking to establish and populate a generic design extension category
  - Because there is a less costly way to increase **coherency** and quality of beyond design-basis regulations

Evaluation of Working Group's Recommended Approach

- Would not significantly increase **safety**
- Would not significantly affect licensee **burden**
  - Low resource usage by NRC
- Would increase **coherency,** thoroughness, and efficiency of future design extension category regulations
  - NRC, industry, and public