UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

***

10 CFR PART 70

***

PUBLIC MEETING

U.S. Nuclear Regulatory Commission

2 White Flint North, Rm. T10-A1

Rockville, MD

Wednesday, January 13, 1999

The above-entitled meeting commenced, pursuant to notice, at 9:00 a.m.

P R O C E E D I N G S

[9:00 a.m.]

MR. SHERR: Good morning, and welcome. My name is Ted Sherr. I'm Chief of the Regulatory and International Safeguards Branch in Fuel Cycle Safety and Safeguards.

The purpose of today's meeting is again to provide an opportunity to discuss the amendments of 10 CFR Part 70 in the interest of making the regulations -- or putting the regulations on a more risk-informed basis, and the specific focus of today's meeting is on the nuclear criticality safety aspects of the rule and also corresponding standard review plan chapters.

You should have all gotten the blue folder, and in that folder is the agenda of the meeting, three pieces of correspondence relating to comments that have been received on nuclear criticality safety issues, and finally, a discussion draft of rule changes that are under consideration that is staff's attempt to address the comments as we understand them at this point, and that will be further discussed under item 3(b) in the agenda.

Before we begin, it may be useful to just go around the room and let everybody introduce themselves and identify the organization that they're with.

MR. GEE: Frank Gee, Inspections.

MR. EDGAR: Jim Edgar, Siemens Power Corporation.

MR. VESCOVI: Peter Vescovi, GE Nuclear.

MR. MANNING: Calvin Manning, Siemens Power Corporation.

MR. WILLIAMS: Don Williams of the Oak Ridge National Laboratory.

MR. BADWAN: Faris Badwan, Los Alamos National Lab.

MR. MOTLEY: Frank Motley, Los Alamos.

MR. FELSHER: Harry Felsher, Licensing Branch.

MR. TROSKOSKI: Bill Troskoski, Operations Branch.

MR. PIERSON: Bob Pierson, Special Projects Branch.

MR. DAVIS: Jack Davis, Special Projects Branch.

MR. GOODWIN: Wilbur Goodwin, Westinghouse, Columbia.

MR. BIDINGER: George Bidinger, consultant.

MR. FREEMAN: Bob Freeman, ABB Nuclear.

MR. SANDERS: Charlie Sanders, Framatome.

MR. HOPPER: Calvin Hopper, Oak Ridge National Lab.

MR. LEWIS: I'm Rob Lewis. I'm in the Special Projects Branch.

MR. ROTHLEDER: Burt Rothleder, DOE.

MR. CASTLEMAN: Pat Castleman, technical assistant to Commissioner Diaz.

MS. WINSBERG: Kathryn Winsberg, NRC, General Counsel's office.

MR. DAMON: Dennis Damon, Fuel Cycle Licensing.

MR. SHARKEY: Bill Sharkey, ABB Combustion Engineering.

MR. SCHILTHELM: Steve Schilthelm, BWX Technology.

MR. VAUGHAN: Charlie Vaughan, GE Nuclear Energy.

MR. BRACH: Bill Brach, Division of Fuel Cycle Safety and Safeguards, NRC.

MR. PERSINKO: Persinko, NRC, Special Projects Branch.

MR. COMFORT: Gary Comfort, NRC Special Projects Branch.

MR. ELLIOTT: Mark Elliott, BWX Technologies.

MR. KENT: Norman Kent, Westinghouse.

MR. KILLAR: Felix Killar, NEI.

MR. SHERR: Before we begin, on the agenda, one of our thoughts was that perhaps we would try to get through this morning, before breaking, item 3(b), which is the NRC's presentation on the draft rule language that we put together.

At that time, I think the request is that we break for an hour-and-a-half, which would allow some internal discussions.

Then we would reconvene this afternoon, and depending on how the time goes, perhaps we would conclude the meeting today after item 4(a), which is the industry briefing on the comments on the SRP guidance and then we'd continue our discussions tomorrow and perhaps wrap up tomorrow morning or, if needed, we can go the whole day tomorrow.

That's kind of a tentative plan. We'll see how that works out in practice as we go along. We don't have to be fixed on that. Does that seem reasonable?

MR. KILLAR: We have one suggestion. In the morning session hereafter, when we start talking about the rule language after the NEI presentation, we would like to have some opportunity for the ANS to give a presentation on the letters and information that they submitted prior to the NRC providing their response.

MR. SHERR: That's fine.

MR. KILLAR: Just to have some background for it.

MR. SHERR: Okay. Good. Thanks.

I probably don't need to mention this, but the usual restrictions on -- no smoking or other terrible things like that.

The rest-rooms are -- the ladies' room is right over here,

and the men's room is -- I don't know if you can get through that way or not, but it's on the other side of the hallway, and unfortunately, we need to work out some kind of escort system, so we'll figure that out.

And Mark Mahoney is recording the meeting for us today, and to help him, anytime anybody's making a statement, if they can use the microphone, and the first time they make a statement, if they can mention their name so he can associate the right name with the right person.

At the last meeting, Drew Persinko apparently not only was the head of the task force but was a spokesman for the industry, as well.

If there aren't any other questions or comments at this point, we can proceed with the second item of the agenda, which is just a brief update of where we are and the status of things.

[First Slide] I think as you know, we had a public meeting on December 3rd and 4th, and at that meeting, we discussed the performance requirements, the chemical hazards, some discussion of criticality, ISA, standard review plan, and preliminary ISA.

We received a number of written comments, NEI letters on chemical hazards dated November 4th, the ISA criticality and SRP issues, and we're going to be focusing today on the December 17th criticality letter as well as the ANS and Los Alamos letters, and that we still expect to receive written comments on the balance of the rule, as well as the balance of SRP issues.

Next slide, please.

We've set up a web-site in response to the Commission direction to have public participation through the Internet, and this

was established and formally announced in the *Federal Register* on December 24th, and we have already placed on the web-site, in addition to transcripts of meetings and the original SECY paper on the staff-proposed rule-making, revised language that took into consideration the comments that were provided on the chemical hazards.

As far as schedule goes, as we indicated at the last meeting, we plan to be posting on the web draft rule changes in the December to February time frame, and we also expect to be receiving comments from NEI and others in the December to March time frame.

We have a meeting today and tomorrow on nuclear criticality safety that we -- to meet the schedule, we are setting a deadline for comments on the rule in the mid-February time-frame and on the SRP and the early March time-frame, and we'll discuss that later in the meeting, more details on that, and finally, the rule package is due to the Commission June 1, 1999.

That's just kind of an overview of the status. If there's no other comments before we get into the meat of the meeting, I guess, Felix, you can take over in terms of the rule language.

MR. KILLAR: Okay.

Just before we start that, I do want to mention that we have looked at what you put on the web-site and think that you're moving in the right direction. You know, nothing is always perfect, but it was pretty close, and so, we will have some additional comments on what you provided, but we certainly think that you've taken into account our comments and reflected very well in what you've done to date.

We are concerned with the timing, as we continue to indicate, that this is a rather short time period to get all this in,

and while we're focusing on the rule and we feel we should be able to get everything done by mid-February on the rule, we feel the SRP is going to be a major challenge, and we don't think there's any way we'll be able to make the mid-March for the SRP, and we do intend to continue working with you past mid-March on the SRP and providing what we can to try and get the SRP the best it can within the time constraints we have.

We did -- we would like to set up or talk about -- and I don't know if it's appropriate to do it now or maybe at the end of the meeting -- another meeting, public meeting, either the end of January or maybe the very first of February to talk about the next -- the iterations of the rule itself here, because right now, we've only seen 70.60 and 70.62. We've since gotten additional letters in, as you have mentioned, and we've got another one that we're in a final process of review this week, which we hope to get into sometime next week, dealing with the balance of our comments on the rule, and so, what we'd like to do is see about scheduling a meeting after you've had those letters, had some time to consider them and what impact they would have on the rule and how the rule would change.

So, I realize that we can't necessarily set something up at this point in time, but we would like to put that on the thoughts for the agenda in the future.

With that, I think we will move into the nuclear criticality section, and Norm Kent from Westinghouse is going to present an overview of the paper that -- the letter we've sent in. So, I'll turn it over to Norm.

MR. KENT: Thank you very much. I have one view-graph, and I apologize to Jack and everybody on that side. I will read it to you

word by word.

Again, I'm Norman Kent, and I am a nuclear criticality safety engineer with Westinghouse Electric Company in Columbia, South Carolina, and I am glad to be here today to be able to present an overview of our response to the proposed re-wording of 10 CFR 70.60 and 62, and I am going to address the December 17th letter that the industry submitted to the NRC, and I did not make copies for everyone, but the agenda that was given lists five separate sections that I intend to address one by one.

These are risk-informed regulation, double- contingency graded level of protection of items relied on for safety, nuclear criticality quality assurance, and historical nuclear criticality data.

So, my talk will be brief, I think, but as I go through it, I'll be reading both from my letter and referencing different parts of the proposed rewrite to the rule.

The first item in our letter on proposed changes to the draft language has to do with risk-informed regulation, and rather than read that entire first page, the essence, I believe, was that we saw that proposed revisions continue to address the consequences and likelihood of an accident sequence, whereas they should focus regulatory attention on the risk, and then I would like to jump to the bottom of the page, where we have three bullets listed where we would suggest that -- we had suggested that the NRC give consideration to these three items. So, I would like to deal with those one at a time.

The first item was evaluate the risk -- that is, the consequence and likelihood of potential nuclear criticality accidents, whether initiated by external events, process deviations, or internal

events.

In the proposed rule, part 70.60, paragraph (d), a nuclear criticality event is defined as a high-consequence event, and it is noted from a reading of the listing in that rule that the other four high-consequence events are really functions of radiation or chemical exposures to the worker or to the public, rather than just an event.

Now, from a purely technical standpoint -- i.e., the impact on health and safety -- an inadvertent criticality may not necessarily be a high-consequence event.

Now, clearly, criticality is undesirable, and it's the job of the nuclear criticality safety function of the different licensees to ensure that an inadvertent criticality remains highly unlikely, but it seems inconsistent to include an event -- that is, criticality -- in the listing with resulting consequences from other events that are not named.

What is obvious, as a footnote, is that a criticality would have resulting dose and exposure consequences which are included in items 2.2 through 4 of that list.

So, we request that the Commission consider deleting the term "nuclear criticality" from paragraph (d) as a high-consequence event, and I believe, Calvin, you will -- or someone will discuss the ANS letter which deals with that same topic.

Also, in the rule -- forgive me for thumbing through pages to find it -- we would request that the parenthetical note of the paragraph (d) which says "except for nuclear criticality" would also be deleted from that sentence.

The second bullet under risk-informed regulation that we

addressed was to establish appropriate risk base graded levels of protection to prevent nuclear criticality accidents.

The intent of this request was to communicate to the Commission that the levels of protection which are applied to different criticality accident sequences should be commensurate with the likelihood of occurrence of that accident sequence.

That follows from the first bullet that not all inadvertent criticalities are high-consequence or equally likely. So, we want to include the likelihood and the consequence of a criticality accident.

So, we would request that the Commission would consider acknowledging that the level of protection against a criticality accident sequence be commensurate with the likelihood of occurrence of that sequence.

I counted four areas in 10 CFR 70.60 and .62 where we are unsure of the intent of the meaning of these references to controls, and I'd like to point them out.

The first one is paragraph (d), part 70.60, paragraph (d), which says "Each engineered or administrative control necessary to comply with subsection (b) or (c) of this section shall be designated as an item relied on for safety."

Paragraph 62(a)(1), second sentence, "The safety program may be graded such that management measures applied are commensurate with the item's reduction of the risk. Requirements for the safety program, including process safety information, integrated safety analysis, management measures are described in sections (b) through (d) of this section." I believe that was the right sentence.

70.62, paragraph (d), "To ensure that each item relied on

for safety will perform its intended function when needed, integrated safety analysis shall be used by licensees to establish safety program management measures. The safety program management measures shall ensure that ...," and then, subparagraph (1), right below that, where it discusses engineered control, "Engineered controls that are identified as relied on for safety pursuant to section 70.60(d) of this part are designed, constructed, inspected, calibrated, tested, and maintained as necessary to ensure the ability to perform their intended functions when needed. Items subject to this requirement include but are not limited to principle structures of the plant, passive barriers relied on for safety -- for example, piping, glove boxes, containers, tanks, columns, vessels -- active systems, equipment, and components relied on for safety, sampling and measurement systems used to convey information about the safety of plant operations, instrumentation, control systems used to monitor and control the behavior of systems relied on for safety, and utility service systems relied on for safety."

We believe that these four references in other areas where levels of protection are addressed mean that an item relied on for safety can be graded commensurate with its ability to reduce the risk -- that is, the likelihood and consequence of the criticality.

Therefore, we request that the Commission would consider revising 70.62, paragraph (d), management measures, to state that the performance but not to include the prescription associated with performance of the controls, and we'll address that later on in this presentation.

The third bullet is to establish appropriate risk base -- that is, graded levels of assurance for items relied on for safety to

ensure their availability and reliability.

There seems to be some overlap, and yet, I could see a subtle difference between bullet number two and bullet number three, and I will try to explain that the intent of this item was to communicate to the Commission that, distinct from the levels of protection applied to a system be graded, that an item, a specific item relied on for safety also must have assurance of availability and reliability that's appropriate to the risk that is designed to prevent or mitigate.

Now, we believe the words of the proposed revision to part 70.60 and 62 provide the latitude, but again, looking at those four references that I read to you earlier, it does not seem clear from the reading that that, in fact, is the case.

So, we would request that the Commission would consider clarifying that point.

As a footnote, from the standard review plan -- and I recognize that we're talking about the rule -- paragraph 5.4.4.1.1 on page 9 states that the highest quality assurance level is provided for all criticality controls used to ensure double contingency.

I think that seems to conflict with the need to apply appropriate levels of assurance commensurate with the risk involved.

I'm ready to move on to paragraph (b) now, double contingencies. I assume presentation means there are no questions as I go through that, so I'll just continue until somebody stops me.

As the rule reads, we believe that it is acceptable with respect to double contingency. However, we do note or did note that double contingency is included in 10 CFR 70.64 -- I believe it's item number 9, which deals with baseline design criteria.

The licensees, the industry agrees with the provisions of ANSI 8.1 as they apply to design criteria, but we do not believe that baseline design criteria for any regulatory discipline should be in the rule, and while we find 70.60 and 70.62 acceptable, we do take issue with the application of the double contingency principle as it's found in the standard review plan.

Specifically, the attempt to apply probability criteria to double-contingency protection is totally inappropriate and not in keeping with ANSI 8.1.

Item number (c) or letter (c), graded level of protection: In reading through the introductory paragraph, we restated what was in the earlier version of paragraph 60, where it states that a nuclear criticality event is a high-consequence event, and so, I am proceeding with that pre-supposition, and this actually overlaps from the second bullet on the first page.

Therefore, if an event is high consequence, as earlier stated in the rule, then risk becomes solely a function of an accident's likelihood of occurrence, and again, we see that the choice of control should depend on the risk or the likelihood, and though individual controls may vary in their level of importance, the aggregate must make a criticality highly unlikely.

The second paragraph of the double contingency section of our letter notes that 70.60(c) requires the licensee to ensure that safety controls or items relied on for safety to prevent a nuclear criticality accident are continuously available and reliable.

In practice, specific safety controls will not be operational during periods of maintenance or calibration and testing and

will not be required to function, and they will not be required to function when SNM is not present.

Therefore, the wording of that paragraph should be modified to address the risk of a nuclear criticality accident and to ensure that items relied on for safety are available and reliable when required to perform their safety functions, and in looking at the re-write based on this letter, we see that those words were incorporated into your re-write of the rule, and we appreciate that.

The third paragraph in the section on graded level of protection says -- that same paragraph, 70.60(c), incorrectly identifies only the likelihood of external events as an element of risk from a nuclear criticality accident, thereby excluding the likelihood of process deviations or other internal events as an element of the risk evaluation.

In actuality, likelihood of a process deviation or other internal event initiating an accident sequence leading to a potential nuclear criticality is probably far greater than that posed by an external event, and we suggested that the language be changed to include provisions for an internal event, and that, too, was incorporated into your re-write, and I'm finished with letter (c), I'm moving on to (d) now, nuclear criticality quality assurance.

Your script never looked so good the day after you wrote it.

The industry -- we support the concept of employing management measures as introduced in Part 70.62(d), but we do find the prescriptive level of detail that's in the rule inappropriate for a rule and therefore unnecessary, and I'm referring specifically to items (1) through (8) of 70.62.

And out of mercy to everybody, I will not read all eight of those.

We would like to suggest, rather, that the rule concerning management measures read something like this, which is, in essence, a modification of the introductory paragraph that you have in subparagraph (d), management measures, and it reads something like this.

"Management should establish appropriate measures to ensure that all items relied on for safety perform their safety function when needed," period.

Again, the intent here, I believe, is that "management measures" is a better way of describing the type of assurance that the licensee needs to apply to the controls or the control systems to ensure that a criticality is highly unlikely.

The phrase "quality assurance" connotes an established 18-point QA program. In fact, NQA 1 is referenced in the SRP, and we would rather not see that become the standard QA program of choice.

We believe that licensees should be able to establish these management measures and document them, perhaps in the application but I think preferably in a lower-level document, and not necessarily be required to employ all 18 points every time against every item relied on for safety.

Part (e) of our letter, historical nuclear criticality data -- my note says to read the entire section. I think I'll not do that.

In essence, Part 70 license applications for operating facilities are required by section 70.65(c) to include a description of operational events within the last 10 years that had a significant impact on the safety of the facility.

Detailed incident reports of nuclear criticality deviations or violations, including corrective safety measure that were implemented, are submitted to the NRC at the time of the incident and are retained in the licensee's records.

These are, among others, bulletin 91-01 notification, 10 CFR 70.50 notifications, and 10 CFR 70 notifications.

Therefore, we would request still that the Commission would strike this clause from part (e) -- did I say (c) earlier? -- part (c) that reads that a description of operational events within the past 10 years that had a significant impact on the safety of the facility -- we request that that be stricken.

As a footnote, this type of information is not appropriate in a license application in that it does not represent safety performance commitments.

Conclusions: As I had said at the beginning -- and I do mean it -- I am pleased to be here this morning to discuss this with you on a technical matter, and it's clear to me from reading 70.60 and 70.62 before and reading it after that there seems to be convergence between the Commission and the industry on the rule, and so, I look forward to further discussion to resolve the matters that I mentioned today and hopefully clearly communicated.

MR. KILLAR: That completes the presentation of the overview of the letter we sent in, as well as some of the items we saw and have in the proposed re-write of the rule in these areas.

MR. HOPPER: With regard to the ANS letter that was submitted --

MR. SHERR: Give your name.

MR. HOPPER: All right. The name is Hopper, Calvin Hopper, and I am here to discuss the letter that was issued by the ANS chairman of the nuclear criticality safety division, Cecil Parks.

There's been a lot of discussion, I noticed -- I reviewed the interchange that occurred December 3 and 4, and it seems to me that there's been a lot of appropriate observations made at that time, and I think that the issues that were brought up -- I know the issues that were brought up have been considered and address in this revised rule change.

There are some minor things that are disturbing to people who have been in the business for some years, and that is this risk business, how risky is criticality and the consequences of it, and I would like to at least point some of this discussion in that direction.

As was brought up by Tom McLaughlin in his letter and by the letter from Cecil Parks, the consequences of criticality accidents can be fatal but are typically quite limited, and in that regard, it would seem inappropriate, as Norm has mentioned before, to consider it just arbitrarily a high-risk event without consideration -- or a high-consequence event without consideration of the actual mechanism of the criticality accident.

So far as the unlikeliness of it, this is an issue that has bothered the nuclear criticality safety community for ages.

As soon as concerns about 10 to the minus 6 or 10 to the minus 5 events per year saw the light of day in the criticality community, it's raised some substantial concerns, and if a person tries to get to the source of that number or those numbers of probability, it's sort of interesting, and if you continue to drive the question home

to people, where do these numbers and probabilities that are acceptable come from, which I've done, and I've pressed that back to the national reactor licensing board reviewers for licensing of reactors, and it turns out 10 to the minus 6 is where that number sort of saw the first light of day, and if you take a look at what that 10 to the minus 6 is applied to, it's applied to dumping a core into a parking lot, a reactor core, not a criticality accident.

Ten to the minus 6 is applied to dumping a reactor core -- I don't mean losing secondary containment, I mean losing all containment, whereas 10 to the minus 5 and other lesser frequencies, greater frequencies, are acceptable for things like secondary containment loss, secondary coolant loss.

So, I think that it would be real beneficial, and in fact, if you take a look at unlikely and you're talking 10 to the minus 5, at least people are thinking in terms of being a little more realistic about this frequency business, and that's another issue I did want to touch upon.

I think that the concerns that have been expressed by industry have been well-considered and well-articulated by everybody. I don't see that it's necessary to pursue that any further.

So far as the SRP goes, we concur that that is going to require substantial work. The issue of what people understand is a double contingency, how it was written in the ANSI 8.1 standard, that has been misinterpreted numerous -- for years.

The appendix is a good example. If you examine what 8.1 says you should apply double contingency where appropriate and then they give -- talk about controlling process parameters and then you look at

the example that's run in Appendix A, it gives you a good picture of what double contingency has meant.

So, if you read the standard, the body of the standard, which is the official portion of the standard, it doesn't give you a clear picture of what was intended by double contingency.

Observation of Appendix A and the example is clear, and so, a person needs to be very careful when they talk about double contingency, whether that means two controls on a single parameter or if it means independent parameters, and that's been misinterpreted for years by people, and when I say misinterpreted, I mean both ways, I mean properly interpreted as well as inappropriately interpreted.

Those are the three basic things I have particular concern about so far as the rule-making go.

As I said, I think people have articulated the concerns industry has very appropriately, and I have little more to say.

Does anyone have any questions?

MR. BIDINGER: I might just make two supporting observations.

One, at the last meeting I mentioned that one facility in this country used to use a 10 to the minus 2 number. They have abandoned that approach. That was Savannah River. They finally dug it out and faxed it to me this last week. But they have abandoned that approach.

The other one is double contingency -- there's very little background on it, but there is -- Hugh Paxon, who is one of the authors, did write in document LA3366, and in there, he says it's very important in applying the double contingency that expert judgement and experience

are the only two factors that can be used to properly apply the double contingency principle, that it's not a numerical concept at all.

MR. HOPPER: That's an interesting comment that you had, George, because in the first criticality safety short course that the University of New Mexico put on in Taos, New Mexico, in 1971, Bob Stevenson of the NRC staff had a very interesting discussion -- and that's available in the document, the proceedings of that short course -- Bob Stevenson of the NRC staff had a very interesting and enlightening and useful discussion on double contingency and its application in industry, and that would be a good source for people to consider. There was a substantial discussion on that issue.

Thank you.

MR. SHERR: Thank you.

Okay. Now we'll turn to Gary.

As I mentioned in the beginning, in your folder there is a document titled "Discussion Draft Text," which is the NRC staff attempt to be responsive to the comments or take into consideration, at least, the comments that were provided in the three letters, and Gary Comfort is going to give us an overview of that draft.

MR. COMFORT: Although everybody has it in front of them, I'm putting up on the view-graph the changes that we're considering to try to address some of these comments relating to the rule directly.

I noted from Mr. Kent's discussion that some of the suggestions were to remove nuclear criticality as a high-consequence event and also the parenthetical expression up in 70.60(b). We looked at your comments and decided that that would probably be appropriate,

also.

What the intent originally for that was is that NRC has a strategic goal, which I expect most of the licensees also have, zero inadvertent criticalities, and the best way that we thought that we could implement it at the time that we were writing this part of the rule was to make criticality a high-consequence event which would force the probability to be highly unlikely for such an event.

After looking at it and getting the comments that we got, you know, we also can agree based on fact that a criticality in itself doesn't necessarily have to be a high consequence event. As shown by history, you can have events.

Now, part of that, you know, is circumstance, part of it's protection that that has occurred. In general, I think an unmitigated criticality would still be considered a high-consequence event based on, you know, the 100-rem definition.

However, again, when you have mitigation or other protections, that may not be the case, and that's what we wanted to do, is keep it consistent with the other industrial accidents and pull it out -- the specific comments out of the definition of high consequence so that people could use it more in common with the way the rule is.

However, we still are looking for the idea that criticality should be prevented and not mitigated. We aren't aiming to, you know, allow even mitigated, you know, criticalities behind shield walls where there's not a chance because it's just the strategic goal, and there's also, you know, included perception unique to the nuclear business of a criticality and the concern about that.

You know, if you just state the terms of "a criticality

occurred," people get worried whether there was a consequence or not.

In order to take that into account, we included a new sub-paragraph that we inserted (d), which basically says you go ahead and look at -- you know, you implement 70.60(b) and (c) as you would with any other accident.

However, the intent of it is again to direct any reduction in risk primarily through the use of reducing the frequency of the accident, and basically, the last sentence of it, which is prevention of the reaction, shall be the primary means of protection against consequences of nuclear criticality accidents, is taken with one slight change in the word, you know, including the word "primary" from ANS guidance.

We're hoping that this change will be, you know, acceptable to the industry and will be addressing their comment on that, that again we're looking at them to evaluate the accident, and the result of the evaluation should put you in the categories above.

We also -- going along with the intent of the grading of the protection and assurances, also we hope that by making this change it will make it more clear that criticality is expected to again be addressed, similarly the other industrial accidents, and that there would be a graded approach addressed to it.

To go further on some of the more specific comments that we had, I think the intent of the comment (c) I heard, if I'm correct, was felt to be addressed appropriately in the last revision, which is basically similar to -- or the last revision posted on the web, which shouldn't have been changed much in this latest revision, in the terms of continuously versus when needed or continuously available versus

needed and then also the idea of only addressing external events, that it sounded to me, based on discussion, that that was considered to be reason -- you know, acceptable at least on the first look by industry to address that comment.

The idea of the graded quality assurance that was indicated, particularly the concern that was in 5.4.4.1.1 and the conflict in 5.4.4.1.5, which one basically stated that all criticality events should be considered -- or all controls should have the highest quality assurance, five basically addressed the idea of a graded approach.

We looked at that and we noted internally also that there was a conflict and the intent was really to go towards the graded approach.

So, that type of thing will be revised when we revise the SRP.

The other big issue, of course, was the implementation of double contingency, particularly in the SRP, the use of probability numbers.

We looked back at it and one of the problems that I think when the SRP was written was the idea the double contingency principle has the term "unlikely" in it, and that was used, I think, by the author to try to relate back to the definitions that were used for unlikely and highly unlikely in the rule.

I think the way it really needs to be looked at and I think NRC’s opinion is that those are two separate definitions for "unlikely."

I don’t expect right now that we would be implementing double contingency in any probabilistic way, that experience, you know, with some guidance will be the way that we will be looking at it.

The overall impact, though, of such a review and the implementation of those controls would be expected to meet the rule language, you know, if it fell under the high consequence event or of an intermediate consequence event.

However, at the same time, for criticality accidents, you would still be applying double contingency, and "unlikely" in double contingency would not -- you know, something that was defined as unlikely in double contingency may end up being highly unlikely by itself or may end up being less than unlikely in the rule, but there would be other controls that would have to be applied to put it in the appropriate aspect.

But the intent of it again is that they would be handled as two separate conditions that would be evaluated separately and not in a probabilistic way, particularly with a double contingency.

Again, that would be going through and trying to show that intent when we go through and revision the rule. What we're planning on doing in that revision is to remove the probabilistic content that we had in there and better define what we would expect our license reviewer or criticality reviewers to be doing in that section.

The final area that we had -- and this is the one where we probably had the most disagreement on with industry -- is the inclusion of the historical data that's required in 70.65(c).

We realize that most of the significant reports will be on file either here at NRC or at the licensee. The real intent is for that data to be looked at to be used in their development of the integrated safety analysis, and it was stated in the statement of considerations for the rule that was put out with the SECY paper that, under section

70.65 on page 27, that "Finally, the license application for an operating facility should include a description of operational events that have occurred during the past 10 years and had a significant impact on the safety of the facility. These events should be addressed in the applicant's ISA to ensure that the range of accident sequences considered in the ISA encompasses actual events that have occurred at the facility," and that's really what the rationale for having that included in, is to make sure that the licensee does go back when they're developing the idea of, you know, unlikely, highly unlikely, has it really occurred back in their facility, and by including that information in the application for the significant events, it would allow the license reviewer to go back and make sure that he agrees that it's been included, and by doing a past check of the other events that we have on site, we wouldn't have to do as detailed to pull out the information, because it would presumably be detailed enough but not very detailed to give us an idea of what the accident was, what was done, and what caused it.

We would do a spot-check to make sure we felt that all accidents that had been done in the past were covered in the ISA, that they hadn't been overlooked, and by providing it in the application, though, it would reduce the amount of review that we'd have to go back in trying to re-compile those accidents ourselves, and so, all the intent is really to do is show -- and it would be expected that that information should be readily available from the licensee, as stated, because it should have been reviewed in the ISA itself.

So, right now, our feeling is that we probably won't remove that requirement.

There were a couple of other comments that were made that gave more specifications on the language in the new rule that was posted on the web with some specific citations particularly related, you know, again to rating the levels of protection and clarifying the use of those terms that -- you know, that it looked like -- I believe the comment indicated that it looked like the information was there towards the way industry would like but they just wanted a little bit more clarification to just -- you know, written into the language that would make it more specific, and we haven't looked at the rule or had those comments before, so we'll basically re-look at those sections and, you know, post whatever appropriate revisions that we foresee on the web.

The web is hopefully going to be one of our primary means to communicate both back and forth in a very public forum.

On the list that we have over there, we've got a space for e-mail addresses, and our intent is, when we do post changes onto the web, that you will be e-mailed with such information that you can go look at the specific changes and then make comments.

I don't think it's been exactly determined how we're going to respond to those comments, if we'll go back immediately and put a resolution to that comment or an attempted resolution immediately to the comment or if we'll just gather that in, and if we make another posting based on those comments, you'll see that revision there. But by it being on the web, you'll know that we've made aware of the comment and that we're considering it.

Based on that, as I stated, we're planning on doing a complete revision, particularly of SRP Chapter 5. The current schedule for that is our hope is to get that completed sometime in probably -- no

later than mid-February, that it would be able to be posted on the web, again for further comment at that point.

That's one of the few SRP chapters that -- based on the time schedule, that we're trying to work actively on getting out for another look by industry, and again, it's just based on that we've had a lot more interaction on this subject, and we're hoping, you know, that based on that interaction, we'll be able to show that our intent is to follow up on your comments and try to address them as is appropriate.

Sometimes we'll agree with a comment, sometimes we won't, but you'll be able to see where we're slanted, you know, where we're aiming for on it, and then hopefully you'll get a comfortable feeling that, based on this process you're seeing here, that other comments that you're providing, even if we don't have time to post them before we go back to the Commission, that you'll feel that we're at least, you know, trying to address whatever those issues are.

Are there any questions?

MR. MANNING: Paragraph (b), last sentence, you used the word "practicable" as opposed to "practical."

MR. LEWIS: "Practicable" is the correct word, I believe, because that means when possible. "Practical" does not mean that.

MR. MANNING: So, that precludes any economic justification for not going with the design feature.

MR. LEWIS: No, I don't see that at all.

MR. ELLIOTT: Could we say that the engineered controls are preferred over administrative?

MR. LEWIS: Well, we had a lot of discussion about that. "Primary" has a stronger connotation than "preferred," of course, and it

may be a better term for a regulation.

MR. COMFORT: I think the comment was actually towards the latter part, which is "Engineered controls shall be used" rather than administrative controls. I think the comment is more towards engineered controls are preferred over administrative controls.

MR. LEWIS: Are you talking about "primary" and "preferred" or "used" and "preferred"?

MR. ELLIOTT: I was following onto the question about "practicable." It says, "where practicable," they shall be used. That could be a pretty strong interpretation, and I guess I was suggesting that it may say that engineered controls are preferred over administrative controls.

MR. LEWIS: The words "where practicable" are actually from the standard. "Where practicable, reliance should be placed on equipment design in which dimensions are limited rather than on administrative controls."

MR. BIDINGER: There’s a big difference when it says "should."

MR. LEWIS: I agree.

MR. COMFORT: You don’t quote the standard and than put a "shall" in there.

MR. DAMON: There’s no such thing as "should" in a regulation. There’s no point in putting anything that says "should" in a regulation.

MR. ROTHLEDER: It’s a highly subjective term, "practicable."

MR. LEWIS: "Practicable" -- I view it as allowing the flexibility that you’re seeking. So, "shall" combined with

"practicable," in my opinion, was acceptable. "Should" combined with "practicable" basically says the same thing. "Practicable" allows the flexibility.

MR. KENT: If it's practicable in whose judgement, though? I mean that's the subjective part of it, and that's where we get into huge debates during inspections, those kind of words.

MR. DAMON: I don't think any single word would ever capture all the subtleties of this concept. It has to be explained somewhere in consideration of length what's meant there.

MR. SHARKEY: I guess what we're trying to accomplish here is low risk, and if you're doing your evaluations right and you have the proper controls, the risk is going to be low.

If it's administrative and the risk is still low, then it shouldn't matter, but typically you don't give the same weight to an administrative control as a passive or active control.

So, it's really kind of redundant, the whole last sentence. We all prefer engineered controls.

MR. DAMON: My name is Dennis Damon, with the NRC.

We accepted the industry's idea that criticality should not be called out in a special sense as a high-consequence event, even though one normally, in an unprotected case, can't preclude that it would be, but the idea was we realize that one of the major reasons for not automatically categorizing an event -- criticality as a high consequence is that there are facilities, not at these licensees, but there are facilities -- shielded facilities exist where criticality could happen behind engineered shielding, and therefore, no one would get a dose exceeding any of those limits, and we recognize that that's

possible.

We also recognize that the Commission has specifically issued a strategic safety performance goal of not having inadvertent criticalities.

Therefore, we recognize that the rule language as it was originally structured had a regulatory gap, namely a shielded criticality that did not produce a dose exceeding any of the limits stated in the rule would be simply not addressed at all by the rule, it would have been -- there would have been no requirement, and we realize that that was not what the Commission intended.

The Commission intended that criticalities be prevented, perhaps not with the same degree of stringency if they were behind shielding than if they were not but that criticalities had to be addressed and covered no matter where the dose came out in the rule.

So, that's why this whole section is really in here, and I'm just saying that so that, when we get wrapped up in this language, that's really the objective here, is simply to have a statement in here that criticality should be addressed or prevented and rely on prevention, not simply -- shielding alone is not enough.

If you were going to have a criticality every week behind that shield, the Commission still would not like that, they would want you to prevent -- if you want to have a criticality every week, go see NRR for a reactor license, because that's what you're building, you know.

MR. SHARKEY: You're operating a reactor without a license.

MR. DAMON: Exactly. That's really all this is in here for. It's not really to have all the verbiage. It's simply to say, okay,

even if a criticality does not produce a dose, we still want you to prevent it adequately.

As long as I've got the microphone, I'd like to make a couple other remarks on two technical points, because they are things which -- we have a mixed audience here, and some people might understand this and others not.

There was a discussion by Calvin Hopper and George Bidinger about frequency of occurrence of events and 10 to the minus 6 per year and stuff like that.

You have to remember that the numbers that may have arisen in some other context with respect to reactors are usually a number applied to a single reactor. So, it's the likelihood of something happening at the reactor.

The numbers as they are stated and the terms "likely" and "unlikely" -- "highly unlikely" and "unlikely" in the rule are referring to individual accidents, not to the whole plant, and it's on a per-accident basis, and as has been mentioned many times before, the ISAs that are being submitted may have hundreds or thousands of these potential accidents.

So, unless you take a plant-level numerical goal and divide it by those hundreds or thousands of accidents, that's the number you have to get to. That's why the number would have to be a low number. It's because there's hundreds and thousands of -- it's applied at each individual level and you have to do it that way.

Second point on the consequences of criticality -- some people here are not really criticality engineers, and the area of consequences of criticalities is an area that I have worked in in the

past.

I wouldn't be considered the world's foremost expert, but there is a reason why -- there is a fundamental physical reason why it is that almost any criticality would produce a dose sufficient to exceed 100 rem to someone standing close to it.

The physical reason is because in order to turn that criticality around and shut it down, it has to be done by inherent feedback mechanisms.

In order to get most feedback mechanisms, you have to do something macroscopic to that material. Normally what you have to do is to heat it up or to radiolytically generate bubbles in it or something like this.

You cannot turn a criticality around with trivial feedback effects. You have to use substantial. And that's why you always get a number like 10 to the 17th fissions in a criticality event. It's because of having to put enough energy into the system to get the negative feedback sufficient to shut you down.

So, it is generally a true statement that it's very difficult to get a criticality to be small enough that it would not give you a 100-rem dose if you're standing right next to it.

MR. VAUGHAN: Charles Vaughan.

The question I have is, in 70.60(d), the next-to-the-last sentence, it has a statement that goes "and approved administrative safety margin." Could somebody kind of amplify that just a little bit about what that means and what's involved?

MR. LEWIS: The intent was to have that section of this code reflect the current practice, and I was just discussing with Dennis if

having an improved administrative safety margin is current margin, whether the margin is approved by NRC during licensing or by the facility on a process-specific basis.

MR. DAMON: I would say that the NRC practice has not been consistent in this area. It's an area where we should be consistent. There is a reason for having what I would call a minimum sub-critical margin.

The idea of having an arbitrary administrative margin -- the rationale there is a little bit less clear, but the idea is that, despite the fact that you believe you understand all the uncertainties in setting a margin, that you should still allow some additional margin for things that you have not been able to identify or for some factors which you have identified but haven't quantified is, I think, still valid.

So, the term "administrative margin" may be a bad choice of term. It's not really purely administrative. It's a real margin that you need for unknown uncertainties.

MS. TEN-EYCK: This is Liz Ten-Eyck. Let me try to explain it in non-technical terms from someone that doesn't know much about criticality.

We look at this as the difference that would be below a K-effective of 1, that would be negotiated with the licensee on the particular process or system or whatever and whether you're working for a K-effective of .95 or .97 or whatever, it's that goal that you work at for K-effective that would be less than 1.

Does that help you?

MR. VAUGHAN: So, the measure of the dimensions would be

K-effective.

MS. TEN-EYCK: Pardon?

MR. VAUGHAN: The measure or dimension of this particular safety margin would be expressed as K-effective?

MS. TEN-EYCK: Right. In other words, it's the K-effective that you all decide on that's appropriate for the thing. Say it's .95, and then you back off on that to have your biases and all the other things that go into it, and there's a little formula that I've seen that's kind of a sigma and whatever.

This is what you work out as your K-effective limit, and that would introduce this administrative margin that we're talking about.

MR. DAVIS: Jack Davis, NRC.

Because we stated that the normal and credible abnormal conditions that the process should be sub-critical, we wanted to clarify what we meant by sub-critical there. It just couldn't be .99, for instance, and the administrative safety margin, of course, would depend upon your K-effective sensitivity and how quickly you would approach a critical condition.

So, that's why it says there use as an approved administrative margin. It depends on the facility.

MR. DAMON: There was an extensive discussion of this topic among engineers here at the NRC a few years ago, and we drew the conclusion, as an example, that you could not pick any particular administrative margin, some absolute number that would be used by everybody, and an example that was given is someone could -- can design what amounts to a sub-critical facility where they have very tight

control over the reactivity of that system, and not only that, they could have run it up to critical to know exactly where critical is, then backed off.

So, they can design systems that go .99, whatever you want, provided it's tightly controlled, and they know -- see, they now know where critical is, because they've done it, see?

So, that's the extreme case, but you don't normally have that, and the next level below that is the case where someone has built an experiment that's exactly like what you intend to build, or very, very, very close.

In that case, the numbers I've normally seen is about 2 percent, you know, K-effective of .98 is about as close as you want to get.

MR. HOPPER: Not to be picky, but I would like to suggest that people use the language something like approved administrative margin of sub-criticality for safety.

People confuse safety and sub-criticality. You've got to have sub-criticality to achieve safety, but one does not mean the other, and that gets muddled. So, I'd like to suggest that you say approved administrative margin of sub-criticality for safety.

MR. BIDINGER: I'll go a step further. I think the phrase after the comma in that first sentence should be deleted from regulatory space.

MR. SHERR: Which comma?

MR. BIDINGER: "All nuclear processes are sub-critical," period.

When you put "including use of appropriate bias and

uncertainty adjustment," you're skipping over the fundamental approach to criticality which used critical mass data, which doesn't include appropriate bias and uncertainty adjustments.

This stems from Monte Carlo calculations. It's an appropriate subject in a standard review plan but not in a regulation. If you have to put it in there, I second Calvin's comments on the use of the margin of sub-criticality.

MR. VAUGHAN: I think Calvin's words will do what you were trying to do and actually better convey the message.

MR. SCHILTHELM: I would ask one question, non-technical. Is this current practice -- I heard that once -- in everybody's view here? I'm asking the NRC. You all know what our licenses say. Are our current licenses compliant with this, in your view?

MS. TEN-EYCK: I'm not sure we all know exactly what your licenses say.

MR. DAMON: I would say they are, with the exception, possibly, of the Westinghouse thing about K-effective of 1.0. In that case, it's not clear there is any additional margin.

MR. KENT: This is Norman Kent from Westinghouse.

[Laughter.]

MR. KENT: That's true, Dennis. In recent inspections, we have discussed that with the NRC. Wilbur's not looking at me right now, but I suspect that we will be introducing a margin that I also suspect is still under negotiation.

MR. BIDINGER: I'd like to go back to one other subject that Gary discussed, and that is that the NRC is going to continue to insist upon the re-submittal of the bulletin for reports.

I know, seven years ago, the NRC had the capability to do a literature search of all documents in a document file and bring up those kind of things, and I think that, in a sense that relieving industry of unnecessary regulatory practices, this seems to be one of the areas where re-submittal of information that's already in a document is an unnecessary issue.

MR. SCHILTHELM: I guess, before you answer that, let me add a little to that, because that was exactly what I was going to comment on.

It seems as though you're trying to -- you have a performance objective in mind, and that's that we use this information in doing the ISA, but simply providing the information as a historical summary doesn't directly accomplish that performance objective.

Is there some way that, if that's the objective, that that should be the language in the rule, rather than a seemingly arbitrary requirement to submit information in the license application?

MR. VAUGHAN: Can I add a little to that before you respond, because that was my next one, too.

I think the part about the performance that you're trying to get out of a licensee seems clear, and that is you want the licensee to use this information in their ISA work, in their corrective action work, their whole management system, as one of the elements that you need to make decisions, and I don't think we disagree with that, but the mechanics are very difficult, because it actually requires us to keep this information in a different form and do one additional task with it that we wouldn't normally do if we were working in-house.

If you think about it, though, the fact that the NRC -- and

we've asked this several times over the years -- the NRC gets all of these reports.

So, they have even a much larger database than the licensees do, but the NRC has not chosen to use that to publish back to industry information that could be really important to the whole industry in terms of improving our safety programs where there is a propensity for some particular situation to happen, and you can -- the more data you have, then the better your ability is to make those kinds of decisions.

So, one of the things is, I think, with the NRC receiving that much information, they need to think about routinely -- and I don't know what that frequency is but routinely making some evaluation and, you know, identifying some lessons learned out of the information that's been published.

The second thing is a similar kind of question of the licensee.

You want them to use it in their ISA, you want it kept up to date, you want it to have a positive impact on their safety program, and that's what you ought to focus on, because having them make up this list at the end of 10 years or a 10-year-long list and then suddenly getting to the 11th hour and decide that an ISA or two have been messed up because all of the information wasn't used or something like that has the horse out of the barn.

So, what we need to do is look at a way to implement this whole thing that requires it to be used currently and, as you move on, to minimize the fact that we make mistakes as we move through here and those aren't recognized for a period of time.

MS. TEN-EYCK: I just want to make one comment. We have

attempted to feed back lessons learned from these reports through information notices when there were a number of activities that were focused on some particular issue or problem, and we have tried to do that, but I think what you're proposing is that it be done across the board on some periodic basis, lessons learned on all the events that have happened during that timeframe? Is that correct?

MR. VAUGHAN: Right.

MS. TEN-EYCK: And you're proposing that that might be something that the NRC would do. I might like to suggest also that that might be something also that industry could do. We're now in this vein of getting industry to also do things that will help the industry.

So, I hear you and I think it's a good point, but I did want to note that we have been providing those as we see the things coming up through information notices in the past anyway.

Thank you.

MR. PERSINKO: I was just going to say you imply that there would be a fair amount of work to submit this information. It didn't appear to us that there would be if the information was used in the ISA. Could you explain the additional work that would be necessary?

MR. VAUGHAN: The thing that I see is that using it in the ISA, it's in one particular form, it's in one set of documentation, and is put together for internal consumption. I mean it communicates to us, but it might not necessarily communicate what's outside.

So, all of those particular items will have to be extracted and put on a list that we can supply in this application, and that's just extra work that, if there is a problem, identifies a problem long after the problem should have been known and addressed.

MR. SHERR: We hear what you're saying, Charlie, and just a matter of policy as well as the requirements of the Paperwork Reduction Act, you know, we don't want to be asking for something we don't need and, more importantly, something that we have already.

I think we need to re-look at the language, and I think the idea was that, in fact, past events would be considered and which past events were considered would be identified in some documentation and perhaps it might be just a matter of referring to code numbers or whatever it is, but we can figure that out.

But as a matter of policy, you know, we shouldn't be asking you to provide information that you've already provided. In this context, I think it was asking for information about that information that had been earlier provided, how it was considered.

MR. SCHILTHELM: I guess, to respond to you, Drew, my concern is not necessarily for the amount of work it would be to put it in the license application. It just appears to me that, if there's a performance criteria, it ought to be stated as such rather than simply listing events, because you haven't stated the performance criteria. If it's there, it should be stated.

MR. KILLAR: We recognize from the beginning paragraph which laid out the purpose that this was what the intent was, but from the reading the rule, it certainly did not come across that way, and I think it may be a matter of trying to revise maybe the summary ISA contents or something along that line to capture this concept in there rather than having a separate list of the events over the past 10 years, and I think that would be more meaningful, and it also, I think, will resolve the problem of just we're not just sending you another list. It shows you

how the information has actually been applied, and so, you have the benefit.

It may require that, as part of our summary ISA, we may have to have a table which identifies where each of these items have been -- I see Charlie cringing -- just so you know that they've all been captured or something along that line, but I would try to minimize that.

MR. VAUGHAN: You've got to step back and think about the most important thing, and it's really not a record or what it takes to generate, if that record is necessary and is needed for the safety of the plant.

Philosophically, the performance that is needed is that all of these events and the investigation of those events that produce information need to be used as they are available when ISA work is done. That's what needs to happen.

It doesn't need to be done 10 years later or get 10 years down the road and find out, because some information we had six or eight years ago said this, we've got a problem with what we're doing today. I mean that's really the bottom line.

MR. KENT: This is Norman Kent from Westinghouse, and I don't know if I'm going to belabor it or contribute, but from a crit safety specialist who's been at Westinghouse now for eight years, it seems to me that significant events at the plant -- and I'm thinking now of ones that I know of that happened in 1991 and 1992 and 1993 -- became either licensee-identified violations or violations by the NRC at subsequent inspections.

To me, that meant many hours doing root cause analyses and modifying systems that were involved in the accident to make sure that

controls were applied so that wouldn't happen again, revised drawings, etcetera.

Now, if I do the ISA on that system subsequently to that, those controls will have already been in place, those violations will already have been agreed and closed out by the NRC, and so, they are there, and I don't know that I would even consciously be looking to make sure I took care of that particular incident that happened nine-and-a-half years ago, because the configuration, in fact, was modified and it exists and it's been there for seven years.

MS. TEN-EYCK: Yes, but I think one of our interests is also that the lessons learned from what you -- what you experienced during that situation is applied to other systems as you do your ISA, so it isn't just specifically what you would do differently in that particular system but how you use the lessons learned, I think is what we're really more focused on.

MR. KENT: I think that's a good point, and that goes back to what Steve has said about having the rule read what the performance measure needs to be rather than a way that we might want to satisfy that performance or show that we did.

We need to be learning lessons from things that happen to us as well as those that happen to our colleagues.

MR. KILLAR: There is one other drawback. Some of these things, especially when you go back 10 years, if you look at the way the industry has changed and the process has changed, some of the events that we've had 10 years ago have no relevance to the way we're doing business today, particularly if you start looking at some of the wet processes that we've basically done away with.

MR. ROTHLEDER: I'd just like to go back to item (d). This is Burt Rothleder from DOE. I'd like to register agreement with what George Bidinger said, putting a period after "All nuclear processes are sub-critical."

I agree with George that I don't think it's appropriate in a rule to specify how you achieve sub-criticality. I just think it doesn't belong there. That was my only comment.

MR. LEWIS: I haven't really heard, other than that comment and also a comment regarding the flexibility of the last part of the second sentence, the general feeling for if (b) resolves the stated concerns that you've given us, and I'd like to get the industry's opinion on that and whether there's any highly objectionable language that we have inserted into (d) that is just a no-go as far as you're concerned.

MR. KILLAR: I think we need some time to sit down and caucus amongst ourselves rather than trying to give you an answer right now, after reading it for the first time this morning, even though we've given you some, you know, top-of-heads response.

I think those probably were sort of the no-go, particularly when we started getting concerns about engineered controls shall be used rather than administrative controls.

I think we need to sit down and just go through it ourselves and discuss it amongst ourselves.

I think you've got sort of the top-of-the-head immediate reaction, but I think we need to spend some time focusing in amongst ourselves before we can give you any more detailed answers than that, unless someone has something.

MR. SCHILTHELM: I'd just add one thing to that. Steve Schilthelm from B&W.

We keep slipping -- I think both the NRC and the industry keep slipping into the mode of putting how-to information into the rule rather than the performance requirement, and we seem to have a lot of discussion about the how-to information, not necessarily the performance requirement.

So, I think if we could step back and, where possible, eliminate that how-to information and just stick to the performance requirements in the rule, we might eliminate a lot of the disagreement over the seemingly trivial words.

MR. DAMON: Well, in that regard, with respect to item (b), I think the suggestion was made that the language following the comma be stricken, and the trouble with that is the language following the comma all deals with a margin of sub-criticality, and the danger of striking all that is that there is a performance requirement related to the term sub-critical, and that is you must be confidently sub-critical.

It has to do with whether -- with the state of knowledge, and there does need to be a performance requirement that there be sufficient margin that you have full confidence that the system will be sub-critical.

MR. KENT: This is Norman Kent from Westinghouse.

The first sentence of paragraph (d), assuring that under normal and credible abnormal conditions, does that mean that I have lost double-contingency protection? Does that mean that I have had a contingency or two, or does that mean that I've had one?

MR. DAMON: This is Dennis Damon again.

All I can tell you is my own understanding of those words is that, among the conditions referred to as abnormal, the standard or the practice is to consider the failure of any individual criticality control to be a credible abnormal event, so that, therefore, the system should be sub-critical given the failure of any one criticality control when you have a double contingency-type situation.

MR. KENT: By criticality control, you mean an item relied on for safety, as defined elsewhere in the rule? I'm trying to tie ANSI 8.1, where it says --

MR. BIDINGER: Well --

MR. HOPPER: Excuse me, George, but there's a section in 8.1, a paragraph entitled "Process Analysis." It's 8.2.1 or something like that, paragraph 8.2.1, I think it is, and anyhow, the statement is almost precisely this -- it's not precisely this, but what it does say is, essentially, no upset or normal -- no condition shall lead to criticality.

That is the "shall" in the standard. Double contingency business is "should." But thou "shall" have no criticality as the result of any single failure, and that's what the standard says, and I think that's the conveyance that was intended here.

Now -- maybe it wasn't, but --

MR. KENT: Okay. If that's true, then -- I didn't see the words "single failure," I see plural "conditions."

MR. BIDINGER: This is independent of the double -- this statement should be independent of the double -- any application or consideration of the double contingency. This is a blanket statement in 8.1. You can't allow any operation that will critical.

So, this is a good -- I mean going up to the -- as far as you go in (d) up to some critical period, that's a very good and necessary statement in regulatory space.

MR. DAVIS: I'd like to make a comment -- this is Jack Davis -- in relation to what Burt said earlier.

We're really not describing how to do it, because we say -- whatever methodology you're using. We're just saying that you need to know, reiterating what Dennis said earlier, what sub-critical is. It just can't be some arbitrary number, you know, because some people, in their minds, .999 is sub-critical, which might not be adequate for regulatory space.

MR. ROTHLEDER: So, in other words, that's a definition of what you mean by sub-critical. You're really defining it.

MR. DAVIS: In regulatory space, I guess I would say yes.

MR. ROTHLEDER: I don't know if that belongs in there or not. I'm not an expert in how one words regulations.

MR. DAVIS: I don't think I am an expert either.

MR. ROTHLEDER: At least we've got that statement. That's really a definition.

MR. KILLAR: Can I go back to Norm's point just for a second here on the use of the term "credible abnormal conditions," with the "S"? That can be read two ways.

One way is that you're talking about multiple breakdowns of barriers, so you have multiple abnormal conditions because you have multiple barriers to break down, so you've lost your single, your double, and maybe even triple contingency if you read it that way. I don't think it was intended that way, and I think that's where the

question came from.

MR. LEWIS: I'm not so sure that I agree. If it's a credible event -- for example, if you have a combination of two credible events that could fail, the combination of those two could fail every 50 years. That seems credible, and it should be sub-critical under that situation.

If you have a diesel that is important to safety, that's needed if you lose power, and the diesel is out for maintenance one month a year or inoperable for six months a year, it's credible that you will lose power while that diesel is not operable.

MR. SHERR: I think, in terms of the agenda, if it still fits, we've actually creeped into 3(c) and (d), and based on what Felix said earlier, what we might want to do is come back to this agenda item later to further discuss this, after you've had a chance to discuss aspects among yourselves.

Is that the sense, Felix?

So, what we could do -- it's now 10:30. Maybe it would be most useful to go on to the SRP thing, and if we could go on to 4(a), where the industry would provide comments on the SRP guidance, and then perhaps break after that time period, at which time caucus among ourselves, among our particular groups, and maybe even have time to get something to eat and then get back, and we can see what time that is.

In the meantime, it's 10:30. Does anybody have an urgent need to take a break at this point? I see some heads nodding. So, why don't we take a break now and come back at 10 till 11, and then we'll see how far we get.

[Recess.]

MR. SHERR: We'll continue on with our agenda item 4(a), with

the idea that, once we complete that, we'll break for lunch, and at that point, we'll decide when we'll reconvene.

Felix?

MR. KILLAR: Mark Elliott from BWXT is going to coordinate this presentation, with the help from a lot of the members.

Mark?

MR. ELLIOTT: Mark Elliott, BWXT. I'm going to talk about the standard review plan for the criticality safety. I'm not a criticality engineer. I'm just a manager there. The only reason I'm giving this presentation is because I said heads and it was tails.

[Laughter.]

[Slide 1] MR. ELLIOTT: We identified some issues that we wanted to talk about, and I'm sure whoever wrote this thing did a wonderful job with the guidance they were given. I don't want for them to be throwing tomatoes at me when we starting talking on some of these things.

The first one -- well, four general issues, some philosophical, fundamental-type issues we want to talk about.

Then we give some examples of the level of prescription that's in it that we think is inappropriate, some redundancies that are there that we think that that may be able to restructure some things and to make it a smaller, less voluminous SRP, and then some definitions, locations, and maybe some inconsistencies in those.

On the first slide, on the philosophical issues, these philosophical issues are things that could really impact the way we operate the facility and are kind of really big changes in direction from the way we've been doing business over the years.

[Slide 2] First of all is the criticality controls don't need the

highest level of quality assurance in all cases, and I think we've talked about that a little this morning, and I think that you've agreed that that needs to be looked again.

And as you notice, the section of the SRP we put to the left of this item up here, where we've identified this concern.

We don't think that there's a real need for a performance-based training program.

We think that the assurances, especially around administrative controls that involve people and things, should determine what needs to be done to assure that those controls are reliable, so that establishing some big administrative program such as performance-based training, we thought, was unnecessary.

[Slide 3] On the next slide, if you read in that section 5.4.5.1.5, it talks about -- it's talking about how you can change your facilities without getting a license amendment, and that paragraph talks about, you know, if you don't decrease the effectiveness of your safety, then you can go ahead and change it.

Well, if you look at that section -- and I've read that part of the section in a previous meeting -- it gets down into the details of no new accident scenarios, no new types of procedural failures, and things that really gets down to the finite detail, and the way that's written now would result in just numerous amendments to the license application that are really -- most of which are all unnecessary, and we talked about that in the meeting, I guess, with the Commissioners that got us in those large numbers we cited in that meeting.

So, that needs to be looked at in regard to not trying to -- we're not trying to increase the number of license amendments from the

ones we have today.

In the next one, the K-effective formulation, we just don't see where that's necessary to be in a standard review plan, and I guess there -- it's got a lot of details to it.

It's one way to do it. I think there are several other ways to do it, and I think that we should leave that up to the industry experts to talk about things such as how to derive K-effective and how it's applied and things like that, and we don't think it's necessary to be in the standard review plan.

MR. DAMON: This is Dennis Damon. Could I ask a question about that? I'm not sure which section you're referring to there when you say K-effective.

MR. ELLIOTT: It's in 5.4.5.2.5.

On the next slide, we looked at -- there are some technical inaccuracies, we feel, that are in the standard review plan, and this just identifies one of them, 5.4.5.3. I think it's having to do with reflection and some spacing, required spacing to achieve certain reflection criteria that our experts, our criticality safety people indicated was maybe inaccurate.

The second one, of course, we've talked a lot about is the use of probabilistic techniques in determining double contingency, what's unlikely and what's highly unlikely and things like that, and we don't think that any of those are appropriate.

In reading through the SRP, just in general, there are a lot of determinations that are required of the license reviewer in the SRP that we don't think can be made from reviewing a license application. We would think that you would have to -- from a criticality perspective

anyway, you would probably have to look at the criticality safety evaluations at the facility and the processes at the facility to make such determinations as they're worded in the standard review plan. [slide 5] Going on from the philosophical issues to the prescriptiveness, we notice that there are audit frequencies listed in the standard review plan that a license reviewer would be asking the applicant why they're not committing to quarterly audits and weekly inspections and things like that, and again, we think that the integrated safety analysis results, the assurances that are applied to the controls would determine the appropriate surveillance frequencies, maintenance frequencies, things like that, and that frequencies shouldn't be spelled out just arbitrarily in the review plan.

The standard review plan expands on the K-effective calculation requirements. I'll try to give an example of that.

MR. KENT: This is Norman Kent from Westinghouse.

This is 5.4.5.2 again, the NCS limits, where the K-effective calculations were spelled out, and it's an indication that that was the only means, the only method.

MR. ELLIOTT: Again, we would defer to the industry experts in the nuclear criticality safety division and the ANSI standards to give guidance on such things like that, and to have one method in the standard review plan we thought inappropriate.

There's also some language in the standard review plan that talks about how to adhere to the double contingency principle and what are acceptable exceptions to the double contingency principle and how to make those exceptions, and I think that should be process-specific and left up to the criticality evaluators at the facility.

[Slide 6] On the next slide, redundancies, throughout Chapter 5 and, I guess, throughout most of the safety program chapters, there are training requirements and organizational requirements and management controls specific to criticality, safety, or fire, chemical, whatever, and we thought it would be more concise to have the training requirements in 11.4, where it talked about training, put the organizational requirements in 2.0, which is the chapter on organization, and put management controls in 11, which talks about management controls, and just, if necessary, in Chapter 5 or 4 or whatever, refer to 11 or 2, refer the reviewer to those sections for guidance on those topics.

[Slide 7] On definitions, we've got -- we see that some definitions -- and this may be just different people writing different sections but inconsistent definitions in the standard review plan from what's cited in the rule, and one of them was items relied on for safety, is worded differently in those two documents.

There's another definition in there that talks about double contingency and then double contingency principle, and it's quite confusing to read those two.

MR. DAMON: You understand that there is a difference.

MR. ELLIOTT: It was not easily understood in the SRP.

MR. DAMON: Basically, double contingency principle as it's stated in the ANSI standard says you should have double contingency, but that's different from what double contingency is.

MR. KENT: This is one page 6 of the standard review plan, where double contingency is followed by double contingency principle, and the principle -- well, the words in the SRP are not the words in

8.1, and then, for double contingency above, when I read that, I saw that as being a definition for double contingency protection of a system, so that the protection exists if those criteria are met, and that's where the confusion comes in.

[Slide 8] MR. ELLIOTT: We saw some words in the standard review plan that weren't defined, and then we saw some definitions that we never found where they were used. One was criticality control system is defined, but we never see where it's used in 5. Then we also -- and we've talked about it a little bit this morning, about safety margin is used, but it's not defined.

There are several other things, prescriptive things, definition things. These were just an example of some of the things that we saw in the review plan when we were reading through it.

MS. TEN-EYCK: Are you going to identify specific examples or areas where this occurs?

MR. ELLIOTT: We've got a partial list.

MS. TEN-EYCK: I'd like you to, where you can, point out exactly where you feel there are problems, rather than this overview type of a thing, because it's very difficult, when you look at a document the size of the standard review plan, to have some general comments and then expect us to go through and find all of the ones that you're identifying.

MR. VAUGHAN: The biggest single problem that you'll find with virtually every chapter in the SRP is this idea of repeating subjects chapter after chapter after chapter -- for example, training, and training is a subject and the requirements for training need to be integrated and they need to be in in one place where the licensee and

everybody else can understand what the requirements are for training for them to comply with their license, and there's other subjects that are much the same.

They're cross-cutting subjects that basically go across every element in the license, and they need to be -- I mean you've got a good start, because you've got all of the things written down, now you've just got to synthesize what needs to go in the right place, and we've pointed out a few of those, but let me say, we did not get through all of the SRP or even all of that particular chapter.

We spent most of the time working on the rule and not so much time on the SRP, but -- and I apologize, because our charts were supposed to have the precise references on them, just like the earlier one, but somewhere between our draft and what we had today, they don't have them, and we should be able to give those to you, I mean right quick, because we actually had them very specifically piece by piece.

Let me just say it seems to us, with some of the examples that we've given, that it may be easier for you to work with it at this stage, as opposed to us try to go through everything and feed you more words. I mean, once you get into it, the concept was not too bad.

MS. TEN-EYCK: I guess my concern was just you have these comments, and then the question is, if you have identified where -- at least one example where it is we can focus on exactly what it means, rather than just a general comment, can you talk about just -- I mean audit frequency, things like that, there could be multiple places, and maybe you just meant a concern on one or something. So, that was my concern.

MR. VAUGHAN: Yes. We probably didn't do an exhaustive

review. We were trying to get examples, and we were trying to find out how to get examples together that would give us some indication of what we felt the root problem was, not trying to be all exhaustive in terms of finding every example.

MR. ELLIOTT: Most of these comments that we've given today are from Chapter 5, not the entire plan.

MR. GOODWIN: This is Wilbur Goodwin with Westinghouse. You mentioned audits, audit frequencies. That specific example was under 5.4.4.3, under the heading "Operational Inspections, Audits, Assessments, and Investigations."

If you look at item 2 and 3, it talks about quarterly audits and weekly NCS inspections, and to us, that seems somewhat arbitrary, because it depends on the -- you know, the risk of the system, the type of system, the complexity.

You know, some things need frequent audits, other things need less frequent. But that's just an example that we're trying to make. I think there may be others in here. I think those are the only two references we made yesterday.

But just to add, this whole 5.4.4.3, operational inspections, audits, assessments, investigations, I believe that could be moved to one of the SRP chapters or subsections in Chapter 11, audits, inspections, self-assessments, or whatever, same thing as training, management organization, management controls, what have you, get all of that into one chapter so it doesn't continue to repeat.

It confuses and maybe frustrates us a little bit as we go through and review this, and I can imagine it might be the same for the license reviewer, as well, just have it all in one place.

MS. TEN-EYCK: Let me ask you, in your application, would you discuss all of your audits in one section, or if you were talking about your criticality program, would you include information regarding your audits?

We're trying to prepare the reviewer to be able to address the different types of things as they would be presented in your application.

So, I agree with you. I think that we could easily put all of that back in a section that deals just with training or whatever, but is that the way that you would normally propose it to us in your application?

MR. GOODWIN: I can speak for Westinghouse. I think that's the way we would do it.

We would have the core program, if you will, training that applies, you know, to a large group of people, and if there's something specific to radiation safety or crit safety or something else, then we would add special, you know, requirements, or requirements over and above the core program, you know, for that, but still have it all under one training section.

MS. TEN-EYCK: A lot of this is in the SRP is kind of to jog the licensing reviewer's memory or thought of looking at it, and I think there may be times when there's advantages to having some redundancy versus not having it there, and then, by the time they get back to look at your training and they look at all that, they forget, gosh, did we look at the crit training.

So, I think it's a good point, and we'll certainly look at it.

MR. VAUGHAN: What happens, I think, in the general world is what Wilbur was saying, is we look at training.

I mean we don't necessarily have separate looks at criticality or radiation. We look at training, and yes, there are some different elements of the program for different things, but we look at training, we look at reporting, we look at, you know, some fundamental elements, and so, if the guidance has the reviewer to expect to see it in criticality safety, then it's going to come up automatically with probably the way that he's going to see it, or if we write the license application in accordance with this, it's in a disconnect between the way the work really needs to happen at the facility, and that's not good either.

So, we'd like to get the licensing to follow a flow which is as close as possible to the way we do our work or look at our work and also is clear to the reviewer then so the reviewer doesn't get surprised when they get the information submitted in that form.

So, I think that's where we got to get.

MR. SCHILTHELM: One of the things that we're looking at is the table of contents to this standard review plan is, in a sense, the standard format and content guide for a future license application, since we've sort of combined the two now.

Our license in some way -- our current licenses in some ways mirror that table of contents, but in a lot of ways, that's probably better and more concise that our current license applications are, because like you said, training is scattered about a bit, and if we could clean that up, even in our current licenses, I think it would be to our advantage, from B&W's standpoint, anyway.

MR. GOODWIN: It might be a relatively easy way of reducing the volume of this document, you know, fairly simple.

MS. TEN-EYCK: I totally agree. If we can get a format that we all agree is a good way to go and you all present your applications in that format, we review them in that format, I think that that will help everybody and streamline the process.

MR. VAUGHAN: Felix, can we recover the references?

MR. ELLIOTT: I've got them. If you want to talk about the prescriptiveness, we can go to those chapters, if you want to look at the now.

MR. KILLAR: Can I just make one comment?

One of the things, too, I feel, from a perspective of a licensee, although it's been many years since I've been a licensee, it's better to have all the training requirements in one area, because when you make commitments, usually you have one individual that's responsible for those commitments, and if you make a commitment on training that's over the criticality section, whoever is responsible for training may think, well, that's criticality and I'll take care of it, but they forget about it or what have you.

So, it's much better to have all the commitments in your license on an issue, whether it's training or quality assurance or criticality or radiation protection, in that section, rather than have those commitments scattered throughout various sections, and that way, you don't have the possibility of a commitment falling through the cracks somewhere, and so, for that logic, I think it makes more sense to have them in the various sections, specific sections, rather than spread out.

MR. DAMON: This is Dennis Damon. One thing occurs to me. The SRP does different things. One thing is acceptance criteria. Another one is instructions to the reviewer as to how to proceed.

One suggestion that occurred to me is, in the -- you go to crit chapter, in the section where it tells the reviewer what he's supposed to do, it could just tell him, go to the chapter on training and review the following things that are in there regarding training, and the acceptance criteria would all be in the training chapter, something like that.

MR. KENT: Cross-referencing, in other words.

MS. TEN-EYCK: If you've got something to give us that cites the specific areas, that's no problem.

At least from my perspective, you addressed it so generally that my thought was, well, how are we going to know specifically what the concern was. So, I think that, if you can give us some references, I think that will surely suffice.

MR. SCHILTHELM: We agonized, Liz. We didn't feel it was productive to come in here with a list of 200 specifics and just throw it all out on the table. We, on the other hand, didn't know how productive this would be either in generalizing.

MS. TEN-EYCK: Well, we'll look at it, and we may have some questions we can come back to you on to make sure that we certainly understand the issues, but I think most of them are -- I think we should be able to understand.

MR. GOODWIN: We were trying to find enough substantive examples to give you a flavor of what we see and a pattern here, if you will, and then, obviously, we can give you more.

I will say, with regard to training and probably some of the other chapters within Westinghouse, we're not totally clean. We still have some fragmentation.

In fact, I think we have some licensing action going on now to try to get some of the training and maybe some other things into the appropriate chapter, but that is our objective, is to -- you know, to compartmentalize these various disciplines.

MS. TEN-EYCK: And I think that's a good objective.

I think what we're looking at is that we've gotten all kinds of formats and applications and everything that aren't always consistent, and so, we need to try to put together something that will address all those contingencies.

I think that if we could come up with a standard review plan that the table of contents would be used by industry as a standard format and content guide, then I think that we're making giant steps forward on streamlining and making this process a lot more consistent across the industry, so I don't have any problem with that.

MR. VAUGHAN: It could sure cut down the pages, too. Some guy over here at the NRC said it was too many pages.

MS. TEN-EYCK: What was too many pages?

MR. VAUGHAN: The SRP.

MS. TEN-EYCK: Oh.

MR. VAUGHAN: I mean you would take out a lot of pages by just eliminating that redundancy.

MS. TEN-EYCK: Well, we certainly would like to streamline it, too. When you put all these pieces together, sometimes you end up with a bigger pile than you would normally like to have, that's for

sure.

I have one other question, though, regarding the standard review plan. Did you all have other comments on this, or is this your presentation on the standard review plan?

MR. ELLIOTT: Yes.

MS. TEN-EYCK: Okay.

Going back to our previous meeting, you talked about the standard review plan, you know, in generalities, and that's why we were trying to get some more specifics, but one of the things was we went back to you and said, well, can you give us a straw man on how you would re-write the standard review plan, so -- but I didn't hear anything about how you would propose to rewrite it.

Are you saying now that you've had a chance to really study and look at it that these are the areas that you felt that you would want us to address and that you're not going to come with some type of a -- I mean I was kind of left feeling that we're going to come with this whole new approach about how they would want to see the standard review plan written that kind of left me with a degree of uncertainty of what it was going to be and what would the impact be on us of trying to totally restructure an SRP.

I guess I'm looking for some feedback. Am I correct that these are the areas you want us to focus on and not the fact that it's going to have to be -- your approach would be to totally reformat it or whatever? I mean there's a lot of work involved in this document, we're working on a very short time-frame, and I'd like to kind of get a good feel on what are the areas that we need to focus on to get a final product in place in time to meet the schedules that are imposed upon us,

which have a very short time-frame involved.

MR. SCHILTHELM: I'll say something from our perspective. We talked a long time about this yesterday.

The philosophical issues on Chapter 5, I think we're pretty concerned about, the things about PRA versus deterministic methods in criticality and safety. I think those are major concerns, and I think we've talked about all those quite a bit.

Drew said earlier you were rewriting SRP Chapter 5 and were on a schedule to do that by mid-February?

MR. PERSINKO: Gary said that.

MR. SCHILTHELM: I'm sorry. That's probably something we ought to discuss, because it doesn't seem productive for us both to go off on a rewrite and then come back and it likely won't look the same. So, we probably ought to spend some time talking about that, you know, how is it productive to go forward?

MR. VAUGHAN: Yes, I think that's something that we really need to discuss. We've talked about a number of options, but it's not clear to us what's the best option.

Let me repeat again, though, what we just shared with you was not a complete review of Chapter 5. We started at the beginning and, relatively quickly, given the scope of the information, went part of the way through it. I can't remember where we stopped off.

MR. GOODWIN: At the technical practices, basically.

MR. VAUGHAN: We stopped before we went through technical practice, and there are, as Steve said, several philosophical things that really don't have anything to do with how you write the SRP, they're just kind of philosophical issues that need to be resolved.

The second set of the presentation, with the reference numbers, points to a number of things that deal with how the standard is written, and the most key one of those, probably, is this degree of redundancy that goes through there, which is counter to the way that it's done in the facilities and counter to the way that the information is collected and we know is going to cause a problem, and it also creates a situation because different sections are written by different people, and even though each one of them writes about training, their words about training are different in different places, and we need to get some consistency and some integration and consolidation. That's the biggest point.

But I think, from our references, you'll be able to see a lot of that, and then, of course, the other level of comments that are in there that we looked at is there's a number of places in there where it seems like that there's too much prescriptive information, too much how-to that is very specific, and in fact, as a result of that, there's some places that there are probably technical errors in there because of the attempted degree of specificness that is tried to put in the -- you know, the how-to kind of instruction, and it may overlook or not include a number of things that you all would want included.

So, it's move a number of the requirements and consolidate them in the license and really go after some of this prescriptiveness. I mean I know there's a certain amount of detail you've got to do, but it should be able to be presented a little bit more broadly so you can encompass more of the things that you may run across than what it currently does.

MR. GOODWIN: The focus, I think, should be more on

performance criteria as opposed to methodology, specification of the how-to's and methodology, and I think that's where it deviates at different places in there, it gets into the how-to, rather than providing performance criteria, you know, what are you really trying to achieve? You know, tell us what you want us to do but not how to do it, in essence, if it's not necessary.

MR. PERSINKO: The same comment you made on the rule earlier, you said make the rule performance-based and take the how-to's somewhere else. I think Steve said that, and now we're hearing the same comment about the SRP, make it performance-based, too.

So, essentially, you're saying take the how-to's out.

MR. GOODWIN: To a large extent, yes.

MR. SHERR: Going back to what Liz was saying, at the meeting on December 4th, concerns were expressed about the prescriptiveness of the SRP, and we discussed, well, okay, I mean the purpose of the SRP is to help the reviewer work from the more general aspects that are in the regulations and all those things, so some degree of prescriptiveness is appropriate, and we were trying to get a better handle in terms of what that level meant to you, and one of the suggestions there was perhaps you could provide a revised chapter.

It wasn't necessarily criticality. In fact, I think the example was training that we identified at the meeting, and there wasn't any commitment to do it, it was just that, you know, you might be able to do that.

But I think that's the -- I mean we'll give our best shot in terms of revising the criticality chapter, and any specific comments that you have would help us in doing that.

But there's still this concern about this prescriptiveness, and it doesn't seem to us a basic sin that the SRP would be prescriptive. I mean if that was a criticism of the rule, then we would understand that.

So, we're trying to get a better understanding of what degree of detail that we're talking about that seems to be appropriate.

MR. GOODWIN: I think it's the level that we're concerned with. We realize that there has to be some, and you can certainly give examples of, you know, how to do things, but I think it's just the level of prescriptiveness that we've got a problem with.

MR. DAMON: This is Dennis Damon again.

The crit specialists here in the agency have met and read the NEI comments that were submitted, and I just thought I should share with you -- and any other crit specialist should speak up if I misstate this, but my impression is that we feel we understand what you're saying, which things are too prescriptive and which things are not.

So, I think that whoever undertakes this task probably, if he solicits the opinions of his fellow crit specialists here, will not be too far off from what you're seeking. I don't see this as being that -- as difficult as is being presented here.

MR. DAMON: Do you agree, Harry?

MR. FELSHER: Yes, I agree.

MR. KENT: Was that a commitment on your part to proceed with the standard review plan and not expecting industry to provide you with a straw man?

MR. SHERR: I think what Dennis is trying to say is that, yes, we will proceed with the revised standard review plan chapter on

criticality, and the request for the possibility of industry providing an example for a revised chapter just to get a feeling for what degree of prescriptiveness is considered appropriate was kind of a separate request from the criticality.

At the same time, I think we're suggesting that any other specific comments that can be provided relating to the criticality SRP chapter would be helpful in our revisions to that.

MR. SCHILTHELM: I think I understood earlier this is going to go on the web, as well, in the same manner, so that we could get somewhat interactive with the criticality people?

MR. COMFORT: Yes.

MR. SCHILTHELM: I guess, then, if you've got the lead, it's incumbent on us to participate and get on there and work with you to try to get to the end point on this.

MS. TEN-EYCK: Definitely. We have a very short time-frame. We're going to be moving to be responsive to your comments the best we can, and we put it on the web, and we're going to be looking for your input in a timely manner.

When we get to the point -- at certain cut-off points, we're going to have to move with what we have, and then we can, you know, address it through the public comment forum that we will have when the proposed rule goes out, but we're looking for your input, we're going to put it on the web, we're going to try to address your comments the best we can, and we need your feedback on whether we missed the mark or we've addressed your concerns.

So, it's a very interactive process at this point, and timeliness, I can't stress it enough.

MR. GOODWIN: In terms of this public rule-making, the eventual public rule-making, what will be the comment period duration? Will that be a 90-day comment period, or do you know at this point? I'm just curious.

MS. TEN-EYCK: We would go out with what we would normally consider an adequate public comment period, particularly since the interaction that we've had on this rule -- it isn't like we're dropping something on you that you've never seen before.

I think that we're going to be going forward, and there may be some issues that we still haven't resolved, and we will try to identify those in the commission paper that goes up, and the commission can make the decision on whether they want to publish it or they want to send it back to us to resolve, but I would think that a 90-day public comment period would be adequate based on the fact that we have had so much interaction on this activity over a period of -- I hate to think of it -- five years or more, and so, I would think that 90 days would be adequate, but as I say, that would be something that would go up and we would look at it through our -- how we would address it through our normal process.

If you feel that 90 days is not adequate, then I would like to know that, so at least we consider that in our determination of what would be an adequate comment period.

MR. GOODWIN: I think our main concern is being able to do as much as we can before it is noticed or published for rule-making, but I know -- at least I don't think we'll be able to get through the entire SRP.

So, hopefully, we'll have adequate time, then, to complete

the effort, you know, during the public comment period.

MR. SHERR: I think, if I recall correctly, the standard comment period is 75 days, and I think that's what we had in our draft proposed rule, and I can check that, but also, whatever we go out with in terms of the comment period, there's always -- a press can always be made for extensions.

MR. GOODWIN: Right.

MR. KILLAR: Liz, if I could go back briefly to a discussion of the overall philosophy of the SRPs, I think that we've captured quite a bit already in some of our general concerns -- that being the redundancy, the consistency of definitions.

One of the things that we'd recommend is that you have a final editor, so to speak, someone who reads it from front to back for consistencies and things.

I know -- or it appears to us that the chapters have been written by different individuals and so you have a different tone sometimes in different chapters and different verbiage and what have you, and so, while it may not be intended, but you sometimes read the same thing in different chapters and it comes out with two different intentions, and so, I think one of the things that we're concerned about is consistency throughout the standard review plan.

The other item that I mentioned at the December workshop that I'd like to reiterate here -- and that is reflected in Chapter 5 -- is that the integrated safety assessment drives a program, and so, when you get into criticality safety, it's criticality safety as identified from the ISA.

When you read the section reflecting to the ISA summary in

here, it's along the lines of looking at what -- does the ISA capture this, capture that, or capture this, and it should not -- from our perspective, not be that way.

It should be the ISA has identified this, this, and this, how is that reflected in the safety programs, and so, that's the nuance, I think, that we need to really capture somewhere, and that was part of what we were trying to say back in December, is that all the various programs, whether it's radiation protection, quality assurance, training, human factors, what have you, is dependent upon the ISA and how the ISA determines the need for those various programs, and so, the need for the program, the depth of the program is generated by the ISA, and I'm not sure that's being captured in the individual chapters.

MS. TEN-EYCK: We've had that comment before, and that's certainly something we're going to take into consideration as we rewrite these chapters, yes.

MR. ROTHLEDER: Burt Rothleder from DOE.

I'd like to make a suggestion that, where you have parts of the SRP -- many parts, probably -- that read prescrptively and need to be prescriptive, you can use diffusing language to point out that there are other ways of doing this and perhaps give some examples or references. If you do this, you can make it less onerous and less apparently prescriptive. This has to be done, of course, carefully, but I think this would help.

MR. DAMON: This is Dennis Damon again.

I'd like to make a comment about your -- Felix's remarks about consistencies of definitions, because I've sometimes detected a misunderstanding of what the SRP is trying to do in some cases.

I totally agree, obviously, that definitions should be consistent. It's also true that a strong attempt has been made to be completely consistent with the language in the ANSI standards.

However, you have to understand that what an SRP is doing is giving guidance to a license reviewer on how to apply those definitions to a particular case, and what we have found in the past is that things like the double contingency definition and even a term like items relied on for safety, if you hand that to a license reviewer -- two different license reviewers and apply it to the same system, you may get very different results because of some things about the definition that are not clear.

For example, the double contingency definition is only about a sentence long, and there are many situations that require interpretation.

So, the goal of this standard review plan, in my view, should be to make interpretations of definitions.

Now, anytime you make an interpretation of a definition, someone will disagree with you and say no, that's not what it meant and you are redefining the term. I do not regard it as redefining the term. I regard it as this is an interpretation of that definition.

So, any definition is a broad idea, because it uses a small number of words, and then, when you interpret it, yes, it becomes more specific, and some people might say that you've redefined it, but that's not what we're doing. We're interpreting it in the process of applying it, and in fact, you are forced to do that. That's what a license reviewer does.

If someone says he's got double contingency and he's

reviewing it, he's making the judgement, does he or does he not have double contingency, and in order to do that, he has to apply certain interpretations of certain things, in particularly how unlikely is good enough, and what we would like to see happen is that each license reviewer that does this does it in the same way, and we have found in the past that license reviewers, because they did not have an SRP, were doing completely different things without any justification, and so, we do need to clarify definitions, and there will be clarifications and interpretations of definitions in the standard review plan.

MR. SHERR: Anymore comments at this point?

[No response.]

MR. SHERR: Well, this may be a good breaking point, and what we talked about earlier is that, when we reconvene, we can go back to agenda item, I guess, 3(c) and 3(d), and any further comments that there are on the discussion draft rule language we can discuss at that time, as well as, on reflection, any further discussion, or if there are anymore specific comments you want to provide on the SRP, the criticality chapter in the SRP at that time. Does that make sense?

Okay. It's now 20 to 12. I think the suggestion was that we break for about an hour-and-a-half. So, maybe if we reconvene at 1:15?

My suggestion is, since a lot of people need escorts to get up here, that maybe about 1:10, somebody would meet the group downstairs and bring everybody up at one time, if that's okay.

Thank you.

[Whereupon, at 11:50 a.m., the meeting was recessed, to reconvene at 1:15 p.m., this same day.]

A F T E R N O O N S E S S I O N

[1:20 p.m.]

MR. SHERR: If we can reconvene, I think we should probably have just one person talking at a time so -- Mark was able to get it all down. He probably is trying to record everybody talking at one time here but -- okay.

I think what we said before lunch is that we would go back to agenda item 3(c) and (d), which is essentially any comments on the discussion draft rule language, whether there's any additional comments on that at this point or whether we have exhausted our discussion of that.

MR. KILLAR: From the industry's perspective we think we have fairly well covered that. I wouldn't think that we need to spend any more time on that unless you had some questions based on any of the discussion we have had since that earlier this morning.

MR. SHERR: I guess one question I have is there seemed to be some -- there was one suggestion for a change of language and another suggestion for putting a period and deleting the rest.

Was there a unified view with regard to either of those alternatives or is that something --

MR. KILLAR: The unified view is that we would like to see what the NRC's consensus is --

[Laughter.]

MR. SHERR: Okay. Okay, so we will consider both those alternatives.

MR. BIDINGER: Ted, I think that second sentence, in that same sentence, that word "practicable" is a much bigger issue than

running a tutorial in the first sentence.

MR. SHERR: Okay. Well, if that is -- we have basically exhausted that one.

MR. LEWIS: There is something -- when Mr. Kent was speaking he mentioned there's four areas in the rule --

MR. KENT: Can you speak up?

MR. LEWIS: Yes. When Mr. Kent was speaking, he mentioned there was four areas in the rule where the industry was unsure of how we were allowing graded levels of protection to be applied and I didn't really understand that explanation, so I thought that at least one of them everybody has a copy of. It's now this (e) here that was one of theirs you mentioned.

MR. KENT: Let me find my copy of the rule.

MR. LEWIS: Okay. I guess I wrote down that you thought it was more an issue of clarity than content.

MR. GOODWIN: I think that's right. I think it was the SRP that appeared -- the graded level of protection possibly but we interpreted those four sections as allowing that, yet it looked like it was subject to misinterpretation, okay? Just needed further clarification in those four areas that Norm mentioned.

MR. LEWIS: Okay. With that clarification, it doesn't necessarily need to be a change to the rule language -- it's a change to the accompanying language and the statements of consideration are to the SRP.

MR. GOODWIN: Well, particularly the SRP. Maybe I'll let Norm speak to that, since he was the one that addressed that.

MR. KENT: I will speak but others are welcome to help.

Graded levels of protection for the controls, for the items relied upon for safety, the first reference I made was 70.60, paragraph (d) and the sentence in the rule says that each engineered or administrative control necessary shall be designated as an item relied on for safety, and from a practicing standpoint we use controls the aggregate of which we say together may form an item of safety or an item relied upon for safety but each separate one may be of a lower level.

If you look at your definition of criticality control system, it seems to me you introduce the opportunity to do that where you say you can clump several controls together to have the same overall function as an item relied on for safety but yet this sentence seems to say that each control I use which to support (b) and (c) shall be an item relied on for safety.

MR. LEWIS: It says each engineered or administrative control necessary to comply with (b) or (c) or (d) shall be designated as item relied on for safety.

I guess I don't see a problem with that statement. If it is necessary -- it has to be important to safety.

MR. EDGAR: Norm, would it work to say each engineered or administrative control or family of controls? Would that get us where we want to be?

MR. LEWIS: Or set of controls or control system.

MR. KENT: Yes, I think that I may want to use some controls which of themselves may not be safety significant as we call them or items relied upon for safety in that the failure of that single control is not going to cause (b) or (c) to happen and so I don't know that I am going to designate that particular control as an item relied on for

safety, but I may have a few of those family would be. Is that still unclear?

MR. LEWIS: A little bit. Maybe if there is an example.

I think I see what you are saying but to me either it is required to meet (b) and (c) or it is not. If it isn't, it is not important to safety and it is outside the scope of the rule but if it is then we are not preventing yo from putting other things under the management measures or safety program but we are specifying that these that are necessary for (b) and (c) do have to be under the safety program.

MR. DAMON: This is Dennis Damon. I think what the source of the difficulty here is is the fact that in an individual plant very often a safety system, a safety program or whatever is set up using terminology to identify certain pieces of hardware, and the terminology used might be safety related equipment or something or other, some kind of term like that, and certain pieces of equipment have that label put on them and the plant, once the label is put on that piece of equipment, then a bunch of specific things are done by the plant to handle that particular thing.

My own personal understanding of the intent of the rule language is that it is not trying to describe such a system. It is simply saying -- it is describing that same idea at the higher level of generality, which is if something is something you rely on for safety, you need to do whatever you need to do to make that thing work.

It's really a very benign statement. It's a very harmless statement in one sense. It simply says it is not good enough that you installed the thing originally. You have to maintain it and it has to

continue to be operational and so on, but it is not trying to describe that you need to label everything "item relied on for safety" and put a sticker on there and then everything that has that sticker has to have exactly the same thing done to it. That would be a separate system.

That would be one part of the management systems that are applied to achieve this more generic concept, which is you have to do something to make sure things work, so that is my perception of it, but I think many people don't have that perception. I think people have a perception we are trying to map the rule language -- the rule language is trying to create an arbitrary management system like that and then you have got to map your system and your plant onto that scheme, and I think that is absolutely impossible because each plant has their own scheme. They identify things and they apply different criteria to what hardware goes in their particular categorization scheme, and any map we created here would not fit everybody. It would be lucky if it fit anybody.

MR. GOODWIN: I think where Norm is coming from is we may have a barrier, if you will, which is a set of controls that can preclude or should preclude criticality and maybe one or two of those controls may not be what we designate as safety significant but in the aggregate, you know, they all or would be defined by us as an item relied on for safety but an individual control might not be.

I don't know if I explained it very well. We may have to think about it.

MR. DAMON: All I am saying is even if you have got something like a nut or bolt in a thing, you know, and you are relying on that to hold the thing together -- if the nut falls out the thing

doesn't work -- even at that level you have got to use a good enough nut. That is what the rule is saying. You have got to use a good enough one. If they are breaking every week and they don't work, they're always falling out, you have got to get better ones.

So it is not trying to create this map and say every nut and bolt has to be an especially identified item. It is not -- that's my view -- that it should not try to do that because we cannot succeed in creating a scheme like that and saying you have got to replicate this scheme in your plant and make you completely reorganize the way you do this function at your plants, and I don't think -- that is just my personal view -- I don't think that is practicable to make all the licensee follow some NRC generated, prescriptive system like that.

I think over in NRR where the systems they work with are more similar, they can kind of do that, but I don't think it works here.

MR. KILLAR: Yes. I guess maybe an example -- this is purely hypothetical -- is that you have a density gauge which have two probes on it feeding into one meter. You put the high concentration of quality assurance on the meter because that is your reliance, but you don't put as much a reliance on the probes because they have two different probes providing the impact and so the concern is that as you read this in a literal interpretation you have got to put as much quality control or management on each of those individual probes as you with the meter because that's part of the same system, and so I think that is kind of, you know, a nuance here is a difference of interpretation.

MR. DAMON: Yes, I think the thing that is more germane to this thing, that actually needs to be listed or clarified in the SRP is

what gets submitted that constitutes a list of safety controls. In other words, the degree of specificity in that, because in that list nobody wants to see a list of every nut and bolt in the plant.

In other words, you could take everything in the plant that is a hardware item that is part of a safety system, break it down into every single component and list it. That is not what is intended.

It was intended to be listed at the system level. There would be one or two line items for each process in the plant, you know. That is the level of specificity there. It comes out of the ISA. You do the ISA, identify the accidents. Each accident will have like a couple items on it relied on for safety and that it failed -- you list those. They are in the description of event there. That is what is wanted in the way of being a list but in this other sense, see, that's why I say the language can be very confusing.

In the sense of the rule, each nut and bolt in there is an item relied on for safety -- you know what I mean? It's something relied on -- literally it meets the words of what the rule says. It is something you are relying on for safety.

MR. MENDELS0HN: If I could add one thing to that. This is Barry Mendelsohn.

If you go back to when we first started to identify, a number of years ago, one of the things that we were trying to do in the industry was supportive of this was to find some way to say what parts of the plant the NRC was not interest in, and you could do whatever you wanted to there, that it was not something that would concern us. I remember there was something special about the fire protection systems and the fact that we only had interest in certain -- fire protection

over certain parts of the plant, not the whole plant, and I think that is what we are trying to do here when we say items relied on for safety. Those are the things that we are going to be interested in.

Now the level of interest -- I mean there's some things that may be part of the safety system that, as Dennis was saying, may be a fairly insignificant piece, but it is still part of the safety system. So, you know, I am not talking at what level quality assurance we need. That is not my issue. I am just saying that there are certain things that we say yes, these are safety -- part of the safety system therefore NRC has some interest in it. The other stuff we are not interested in.

MR. SCHILTHELM: Let me try to put this in -- I don't know -- in perspective and ask the NRC when we do an ISA we are going through systematically and identifying all the items relied on for safety, okay? They may be nuts and bolts or they may be very elaborate engineered controls in my monitoring systems, but we are identifying all of them essentially and some of the other licensees might not agree with me, but this is what we are doing at B&W.

Now when we go into the risk part of this equation and the graded approach, we have to somehow identify the importance of each of those items and the words in the rule and in fact the example of the ISA that is in the Standard Review Plan has a classification scheme -- Class A, B and C, okay?

I think what we are struggling with is we want to hear clearly from the NRC that all these items relied on for safety because they relate to criticality safety don't fall into a Class A, that you acknowledge that there is a whole spectrum of items relied on for safety as they relate to protection, criticality protection of a given system.

If you apply double contingency properly, we don't think there's probably a Class A criticality control. There are probably a lot of Bs and there may be some Cs. Now whether it is A, B, C, 1, 2, 3, whether it is A, B, C and D, that whole issue is pretty confusing and I don't think any two of us would agree on it, but that is the concept I think that we are concerned about, because this whole graded scheme lends itself to a classification scheme that we are going to have to develop and implement.

I guess I would like to hear the NRC's view on that, or if I have misspoken for the licensees, some of their views, because there's a lot of confusion in that point for us.

MR. LEWIS: I can't say what NRC's view is but I agree with everything you said. As a matter of fact, I was just leafing through the next section that you referenced and we included language in the rule, SOP aside for the moment, because it hasn't been updated yet, but in the update that we put on the Web for the rule we had a phrase in 70.62(a) that said the safety program may be graded such that management measures applied are commensurate with the items for reduction in risk -- "item" meaning each item relied on for safety.

The reason I asked the initial question was I couldn't see why that was inconsistent with what --

MR. KENT: With what I said.

MR. LEWIS: -- what industry's initial problems were.

MR. SCHILTHELM: I think what Norm said this morning was, when he read those four points, we think that's what those four points say but we are nervous about it and we are just trying to make absolutely certain that that is what we are reading I guess was the

point.

MR. GOODWIN: I was just saying you may want to go back and look at the words to see that they are as clear as possible to eliminate any possible misinterpretation. At least that's the way we interpret it. We hope the inspectors and license reviewers will interpret them the same way.

MR. FREEMAN: I think the suggestion -- the confusion that we talked about was that that paragraph that Rob just read under 70.62(a)(1), the only mention of graded approach is there. It is not in 70.60(d). It is not in 70.60(2)(d) where you thoroughly get into item relied upon for safety.

It's somewhat disconnected with the mention of item relied upon for safety, which would lend itself to confusion -- is that accurate?

MR. KENT: Yes.

MR. FREEMAN: We felt it's all there. We felt we needed to interpret and wanted to make sure we interpret it correctly and the clarification request is just that.

MR. SHERR: 70.60(e) cross-references to 70.62.

MR. FREEMAN: Correct.

MR. SHERR: Is that correct?

MR. FREEMAN: It is there, yes.

MR. SHERR: I guess the question, going back to Rob's additional question, was in light of the words that's in 70.62, is there still concern with the opening phrase in paragraph (e) where it says "each engineered or administrative control" -- does something need to be added to that or not?

MR. FREEMAN: I would suggest the addition would go on 70.62(d) under management measures -- repetition of what is in 70.62(1) -- some link to the graded approach -- maybe it is redundant.

MR. LEWIS: I think I understand.

MR. SHERR: Okay. Any other questions, comments? George?

MR. BIDINGER: Just one word of caution. In 70.60 every time you use the word "control" it's clear. In the nuclear fuel cycle where there is only one control, where the double contingency doesn't apply. I think you need to be very careful in editing this document to make it clear that it is one or more engineered controls. When you just say controls that means more than one, and that will put your five-inch cylinder out of business in a hurry -- I mean your 30-inch cylinder out of business in a hurry. Controls are more than one.

MR. LEWIS: Controls will be defined in the SRP.

MR. BIDINGER: I was talking about the rule though.

MR. LEWIS: Right. I understand your comment.

MR. GOODWIN: I couple of minor questions or comments regarding the rule itself.

In the purpose, and maybe I just need clarification, you have included uranium enrichment and enriched uranium hexafloride conversion and I thought of course the GDPs are licensed under Part 76. Why were they included in that section?

MR. BIDINGER: LES would have been under Part 70.

MR. GOODWIN: Okay. I should have remembered that.

The other one -- in the critical mass of SAM under 70.4, it would basically reference the critical mass numbers at the 4 weight percent and I think every one is licensed at up to 5 or 5.1. Is there

any reason to stick with the 4 weight percent as opposed to, say, a 5 weight percentage, may be more representative or better representative?

MR. VAUGHAN: I think there's been some new data generated that helps fill in the gap at 6 percent actually up to around 10.

MR. GOODWIN: I think you're right.

MR. LEWIS: I might be wrong but I think the origin of those numbers was Part 150, which is our Agreement State regulation where it says if you possess less than that material, that amount of material, then you are not subject to NRC licensing in an Agreement State.

MR. SHERR: One of the subobjectives of the rule, when we tried to parse it this way, was trying to not impact the Agreement States -- trying to make sure the rule didn't affect them.

MR. LEWIS: No, I think you are correct. I think that is where it does come from. Why the 4 percent is called out -- the only reason I can think of is that there was analysis available to permit them to determine that number and it gave additional flexibility to people who were trying to determine whether they complied or not, but I really don't know why that was called out specifically.

MR. GOODWIN: Just curious.

MR. SHERR: Okay. So I guess then we can shift back to Agenda Item 4 and I guess -- are there any other comments industry wanted to make on the Standard Review Plan or specific references or did we accomplish that already?

MR. KILLAR: I think we gave you all the references -- we passed that information on as far as the references from the slides.

MR. ELLIOTT: Yes, we did.

MR. SHERR: I assume the question is whether there is any

clarifications we want -- one reaction that I took from your comments this morning were of two varieties, some that were specific to the Chapter 5, but then some of them were ones that would apply to other chapters as well, like the notion of cross-referencing and that type of thing.

MR. KILLAR: I might point out that at this point in time what we have decided is it's apparent that we are going to wrap up today. We won't need tomorrow and so what the industry is going to do is we are going to get together back at our offices tomorrow and go through Chapter 5 in detail, and annotate the Chapter 5 SRP, and provide you the annotated Chapter 5 with all our comments in detail.

We anticipate we can probably get that in to you hopefully early next week to try to help you as you are developing the rewrite of Chapter 5.

MR. SHERR: Okay, good. That would be helpful for us to consider those changes.

Okay -- well, maybe we are at the closing part of the meeting.

MR. PERSINKO: Let me ask one question on historical events of significance that we talked about earlier.

What would be your thoughts if -- part of the problem as I understand it are, you know, trying to make it -- it will take effort to reformat it and put it in a form that would be able to be sent in. What would you think of saying "The following events were considered significant and were factored into our ISA and they are as follows" and just list the reference numbers to ones you looked at, and then you say "The following events were not reportable but we factored them in anyway

since internally we think they are of significance for another reason."

You just give references. You don't have to report them.

MR. VAUGHAN: It doesn't do a thing for safety.

MR. PERSINKO: No, but it lets us know that you have sorted out which ones you think are significant and which ones you have looked at in your ISA.

MR. ELLIOTT: Drew, the AICHE Handbook requires you to go back and look at all that.

MR. PERSINKO: Yes.

MR. ELLIOTT: So we look at internal events, those that are reported to you, and those that are not. We also look at industry-wide events, probably through the DOE weekly summaries and things like that, so it's very difficult to go back and -- I mean I can ask you for a list of all my 9101s and 7050s and then hand it back to you.

MR. PERSINKO: Yes, but not all of them are viewed as significant by you. Maybe only a subset are. I don't know.

MR. BIDINGER: But the process should be that they look at them -- look at all of them for significance and incorporate lessons learned from their looking.

MR. PERSINKO: Right and I am saying we looked at them and we consider the following ones to be significant and we have factored those into our ISA.

It would eliminate the work of reformatting or rewriting --

MR. VAUGHAN: Why don't we just commit to include those in the conduct of the ISA.

I mean I don't know what everybody else is doing, but our ISAs that are done on operating processes, as opposed to something new

generally list all of the unusual incidents that have gone on in the near term, at least probably within the last five years that deal with a particular process that is being studied, and that is where it needs to be incorporated and that is where it needs to be factored in and it really doesn't need to be factored in whether it is significant or not. It needs to be factored in and the ISA needs to consider that information.

It is going to be very hard to write for example a definition of what the significant ones are, and on the other hand, that information ought to be available to the team that is doing the ISA. That is where it is valuable in terms of making the improvement or potentially making the improvement into the safety, and the list is way after the fact and the list is a list, and 10 years is a long time to go back and recompile a list.

But at least in our case the ISAs for operating process generally list all of the unusual incidents that were considered by the team and what impact that might have on the safety of the process.

MR. SHARKEY: I also think that it needs to be taken in context with the ISA. The team spends a lot of time talking about them and not everything they discuss is captured in the written portion of the ISA and they may get down to a little detail where turning a nut or a bolt causes people to scrape the skin off their knuckles and suggestions in those areas.

I think you have got to take it in context with the ISA and it is part of the ISA for most of us anyway.

MR. GOODWIN: Well, it's like Mark said, the standard practice I think with the AICHE as a process is to consider all the

events, process upsets, unusual, whatever, and the other thing is 10 years old -- the circumstances may be different enough, you know, with changes to your process, some things that happened 10 years ago, even five years ago may not even be relevant anymore.

So I think it is probably best just to follow the standard process and really try to take that in zero base and consider everything that can happen that is unique to that particular process.

I think what we are saying is we just don't really see any value added to that step and it does --

MR. ELLIOTT: If the goal is to ensure that we look at it, we can commit to look at them. We can also tell you that we have looked at all of them, but it doesn't seem logistically prudent to send you a list of significant issues as your stated goal was to make sure that we have looked at them.

MR. DAMON: See, I'd like to confirm what Charlie Vaughan said. He said something that may have slipped by people, which is that in doing the PHA you do consider all events that have happened in that system and it is not just the significant ones. I mean significant in the sense that, boy, that was close -- it was very close to a criticality.

You consider failures of relatively minor things that would be anything that would contribute to anything you would want to prevent and so you don't want that list and the other list will be only the really big ticket items and so I kind of tend to agree with the industry that the thing that really gets them to the safety is to make sure that in the process of doing the ISA that they actually have the operations staff there and the engineer for that system there, the guys that have

been in the plant for the last five years.

That is where I think you get the knowledge from is requiring the team to be made up of people who actually have been there before who would actually have this knowledge.

MR. VAUGHAN: Right, and the performance -- a clear performance requirement that that information and knowledge will be used in the ISA. A list just doesn't get it.

MR. DAMON: I mean as an example you could require -- we only require that the operations staff -- that there be a representative operations staff on the ISA team and it occurs to me in this context that that is not quite good enough, is it, if that guy has only been at the plant for one year?

There's something sort of related to this that Norm Kent said that I want to make a comment on. I was looking back over my notes here and he made a comment about taking credit for various things in assessing the likelihood of failures that would get you to accidents, and mentioned taking credit for external events and the low likelihood of that, and you mentioned taking credit for process deviations and the fact that those deviations might be unlikely.

I just want to say that's a trick area because that way we would view that, it's perfectly acceptable to do that, but by doing so, by saying the reason this sequence of events is unlikely is partly because the process upset that initiated it is an unlikely condition -- the minute you do that, that means that process upset -- whatever it is that makes that process upset unlikely is an item relied on for safety and it should be in the list of things, and the reason I say that is because unless you do that, the next step that should happen is it's in

the list.

The next step that should happen is it gets put into some part of your safety management system -- say it's either listed in an NCSA or it's put in a configuration management system, probably in an NCSA as something. This process should have this certain upset be a rare event and the reason it has to be done that way is if you don't do that the next time somebody does a change to that process, they can change that process in such a way that that process upset is no longer an unlikely event, and the reason I am sensitive to this is that is the kind of thing -- it's really quite common that there are processes that have quite frequent process upsets like solvent extraction processes.

Some of them, the way the controllers work, they have process upsets relatively frequently, and so if you are actually relying on that low likelihood of that, you have got to declare it and then write it down somewhere so that some guy doesn't come in and change the controller valve and put in something that now that process upset is a much more frequent event.

MR. FELSHER: Harry Felsher, NRC.

I would also like to point out another reason why the historical information is very important not just to the NRC but to the licensees is exactly the same reasons said before. New people come in. They need to know what is going on in that system and they may have arrived after the ISA was completed and yet they are going to be running the operation or overseeing the operation and still would need to go back and know what are the historical events related to that operation, and then for the license reviewer to know perhaps they have only been on the job a short period of time and had not been involved with that

licensee -- they may not know what has been going on for the last five years.

So I think there's two reasons for the historical information. One is to develop the ISA and the other is ongoing training of personnel associated with the facility, both the NRC and the licensee.

MR. MANNING: Harry, this is Cal Manning. I'd comment on that that generally the people in the plant are going to be trained to internal documents in the ISA itself. Very rarely will the process operator or a new manager be referring to the NRC license with that information.

MR. VAUGHAN: In fact, the ISA drives training in a lot of respects and if you get to a point that the ISA has to be redone, then you are going to pull out the old one, which as we have said automatically includes the events that have been related to those particular processes, where you are dealing with operational events, and so the people, new, old or indifferent, that are involved in the update or review of the ISA are going to have that information plus any information that has been generated since then to consider.

MR. BIDINGER: Harry, there is nothing sacred about 10 years. You were in our short course a year or two ago and we were talking about accidents that happened 40 years, 50 years ago -- there is nothing sacred in terms of training in the last 10 years. The training -- if you have a good ISA it wraps up all of the lessons learned from ancient history into the document and there is nothing sacred about 10 years in terms of training.

MR. FELSHER: I think, perhaps it's a mistake, but I thought

the 10 year was because we are currently going to 10 year license renewals, and that was just to capture what has gone on --

MR. BIDINGER: In terms of training and information being in the ISA, it's real old. I mean there is nothing sacred about 10 years.

MR. SHERR: George, we'll assume that you are suggesting we change the rule language from 10 years to 40 years?

[Laughter.]

MR. BIDINGER: No.

MR. SHERR: I am just teasing.

MR. BIDINGER: A good ISA incorporates lessons learned. This could mean going back and if you have an event you go back and do a portion of the ISA all over. You don't wait 10 years to do it.

MR. SCHILTHELM: We are not suggesting that the staff doesn't need a list, whether it is a 10 year list or a 40 year list, doesn't need a comprehensive list to understand their business. What we are suggesting is the license application is not the place for that list. We are almost maybe bridging over into this discussion about where the ISA summary sits, but it is not the license application.

Our view of the license application is those safety commitments we make that we can't change or deviate from without a license amendment.

A simple list of those things that have occurred over the last 10 years doesn't fit that mold.

MR. SHARKEY: You have got the list already, Harry, in your docket file.

MR. ELLIOTT: I guess it appears to us that I am going to give you a list of events that you already have and that in no way is

going to assure you that I have put it into my ISA, that action.

If we tell you and commit in our license application that part of the ISA process includes these types of things, I think that gets you there and you can look at the PHA documentation and find it, but for a licensee to give you a list of significant events that have occurred in the facility in the past 10 years, a list which you can get right off of your computer doesn't seem to do anything to anybody but cause a little extra burden and put a little superfluous information in a license application.

MR. FELSHER: Well, let me ask you, at your site would you have that type of document?

MR. SCHILTHELM: If you can't find it, we'll send it to you. It just doesn't belong in the license application.

MR. FELSHER: There's two questions here. One is do you have that information? And I think I am gathering here that you do have that information at the site and it is relatively kept up to date?

MR. SHARKEY: When you say up to date, I mean you don't go back and update whole event reports. I don't understand.

MR. FELSHER: No, no, not the event report, call it a summary of the significant events in the last "x" number of years.

MR. SHARKEY: No, I don't have a summary of it, nor do I have a file with all events. I have no record-keeping requirements for things that happened 20 years ago or 10 years ago. There's no record-keeping requirement for those events.

MR. PERSINKO: So how would you factor it then into your ISA?

MR. SHARKEY: A lot of it is -- it may not go back that far.

It relies on people's institutional memory.

I would say going forward from a couple of years ago, yes, there's a pretty good document trail.

MR. PERSINKO: Well, what happens if the person retires? I mean you are talking institutional memory now.

MR. SHARKEY: To go back in history it's what we got.

MR. VAUGHAN: The problem I suspect all of us have, if you go back far enough in history the expectation and need was not as well appreciated as it is today, so if you go far enough back into history of these plants we didn't understand the importance and we didn't have systems to go some of the things we do today.

In the last five or six years, you'll find the quality of information that we have, and even though there may not even be long-term retention requirements that we pretty much have available all of the time, that is of the quality that we are talking about of being a benefit.

Actually, if you took our plant right now and asked us for a list of events 10 years back, significant events, we might not have the wherewithal to go quite that far back and be accurate at it because of the lack of records and the lack of systems that were in place, but as move toward this integrated safety business, and industry has been to a certain degree moving in that direction before all of the i's are dotted and t's are crossed, we have recognized a number of pieces of information that are important to that process and important to the safety at our facilities and while our systems may not be perfect yet, I think most everybody is moving in that direction, so that is one that is hard to talk about.

We have to remember that this industry has evolved over a number of years and what we say about today and what we want today is maybe significantly different than the way it was 10 or 15 years ago.

MR. FELSHER: Well, let me ask you, do they have -- does your plant -- more recently, can you go back for two or three years now and pull out the most recent reports --

MR. VAUGHAN: Yes.

MR. FELSHER: -- and factor those in?

MR. VAUGHAN: Yes.

MR. FELSHER: So you have put that into effect for more recent events, okay. You can't go back 10 years but you can go back whatever -- three, five maybe, something like that.

MR. SHARKEY: Yes.

MR. GOODWIN: I'd say since the introduction of the Bulletin 9101 -- I could certainly speak for Westinghouse. Our records are pretty darn good and we keep active files.

MR. SHARKEY: There's also things that occur that may not cross the threshold of 9101 reporting that I would consider significant and do in an ISA and accident reports is one of those. We fill out a lot of accident reports during the course of a year. They may be very minor issues. Those are reviewed during the ISA process.

MR. PERSINKO: Yes.

MR. SHARKEY: In the context of the ISA.

MR. SCHILTHELM: It seems to me we are almost offering more by suggesting that if there is a performance requirement that we be reviewing historical information and maybe 70.62(c), as you have written it, needs something to say that we do that as part of the ISA, that

seems to offer more meat to the regulatory and safety performance than having a requirement to put a list in a license application.

I am a little confused why we are arguing -- because it seems like we are offering more substance than we are asking to take out of the license application.

MR. FELSHER: Speaking as a licensing reviewer, if I were unsure that you had taken that into account -- let's say you make that commitment that you will do it in the ISA, but how can I be sure if you are doing that without knowing what those events are? Would I have to go to your site to take a look at this handbook of previous accidents to determine that yes, you did, take those into account?

MR. VAUGHAN: We'd verify that you need to come look at the ISA and see how it was constructed and see what information was used and then go back to the unusual event logs and --

MR. SCHILTHELM: How do you know that we have had the right team members do the ISA? I am not giving you a list of those team members and there is an inspection process --

MR. FELSHER: Right.

MR. SCHILTHELM: Trust and verify is the name of the game.

MR. FELSHER: Trust possibly --

MR. SCHILTHELM: You can't possibly verify every single thing.

MR. FELSHER: I am trying to understand, it seems to me that you have some kind of document at the site. How long it goes back to or not, it is site-specific. What you are talking about here is you don't want to put it in the license application and I thought that you not only send the license application but you also send other documents to

supplement the license application during the license renewal.

MR. GOODWIN: Harry, I think we are not necessarily talking about a document. We are talking about a set of files that we have, okay? It's not like a single document -- just to make sure that you understand that -- but we do have a set of files that we maintain for, for the most part, not only the 91.01 reportables but there may be others that are of somewhat lesser significance that may be near-misses, precursors, things like that, that we choose to set up a file for. That is the way we do it.

MR. KENT: This is Norman Kent from Westinghouse.

I agree with what Wilbur says. Though I can't show you a piece of paper that shows what lessons I have learned from these incidents and how I applied it to the different areas in the plant because a particular significant accident in the uranium processing part may have application elsewhere and I need to make sure those lessons learned get applied, I think we should be able to show you how we applied those lessons learned, not during the license application review but during subsequent inspections.

MR. KILLAR: If I could just kind of sum up here, I don't think that we have a problem with what you are looking for as far as the end-product is that you want to make sure that we have incorporated lessons learned in our Integrated Safety Assessment.

What we have a problem with is the way you are asking for that information we don't feel is going to be very helpful to you or us and so we don't feel it is a very productive process, the way you are asking for that information.

What I suggest you do is maybe go back and look at the ISA

section of the rule and try and capture this concept of the ISA section of the rule, and so you can get what you are looking for and we can provide it to where it is more meaningful and more productive for both parties.

MR. LEWIS: And I agree with you. We do owe you a posting of 70.65, isn't it? -- yes. We are in the process of trying to revise that, although I wouldn't characterize that as the ISA portion of the rule, because that's the contents of application.

I kind of took what you just said to mean the stuff we have already posted but I don't think we wanted to include the history in that portion. Not clear?

MR. KILLAR: Let me -- what you are looking for is to be comfortable that when someone has done their ISA they have taken the lessons they have learned from past events, upset, abnormal conditions, thinks along that line, and factored that in so that they would potentially not have that occur in the future. What you are looking for is a list of those events so you can compare that list against something, possibly -- or I would think the ISA -- to see that they were factored in there, and what I am saying is just giving you a list doesn't necessarily help you because you still have to compare it against the ISA.

So my thinking is that if you look at how you can incorporate that requirement into the ISA portion, you get what you want and we are doing it already, so we get to the same end but with less paperwork and generation of less lists.

MR. BIDINGER: I think for every required report from the licensee there is a regulatory process for closing out, seeing that

corrective action has been taken, and that is proper. For the things that are not reported, whether they are closed out or not is not the NRC's business. If it were the NRC's business, it would be a reportable item, so I think that the emphasis here on these little items at this point in time is not a proper matter for discussion, but since you have, the regulatory staff itself has a closeout mechanism for the reports that do come in, this concern that they have been looked at every 10 years is not a realistic issue. I think it should be dealt with accordingly.

MR. PERSINKO: Let me ask a question. When you do your ISA would the team go through each of the reports? Do they go through those files one by one to see how it is incorporated or would the ISA be done based on the memory of the team members?

MR. GOODWIN: I'll defer to Norm because he is our ISA team member for the criticality program.

MR. ELLIOTT: Let me speak to that for a minute.

[Laughter.]

MR. ELLIOTT: When we do the ISA process you've got a list of events that have occurred on that process and you have got a list of events that have occurred throughout the facility and industry that may have generic applications to the process you are looking at.

You are not going to go into that PHA and say, well, incident da-da-da was looked at here in this accident sequence. You are going to have an accident sequence that was similar maybe to that incident.

It may give you -- it is going to require you to look at it in that process and it is going to also give you some better idea of

likelihood of the failures of those things that you are looking at in that process then you would have had had you not had that information, but I don't think, and I am just speaking for our paperwork, that you are not going to be able to go back there and say, well, the incident that was in weekly summary, DOE, and so on, was covered under the accident scenario, and so on -- it's not there.

MR. PERSINKO: Would the team members review each of the reports as a team to say, okay, this is a significant one or not?

MR. ELLIOTT: Yes.

MR. PERSINKO: I mean you want to see if they are doing it systematically or is it just done based on the memory of team members.

MR. ELLIOTT: We print out a list on the database and I print out a list for the PHA -- we are looking at this system, here are all the events that occurred in that system and here are all the events that the different disciplines think that have generic applicability to that type of process from industry standards and we give them to the team members.

MR. VAUGHAN: We do the same thing. It comes out of our configuration management system.

Now the second piece of that question is do the team members accept those at face value or do they go back and dig into lower, you know, additional levels of detail, and the answer to that is they do both.

I mean you can't write a formula that works for every single solitary thing because it depends on the team members. It depends on the nature of the event -- a lot of things -- and so we look at those lists and when you look at some teams you may have people there that

were intimately involved in this particular thing that went on and they don't have to go back and read the history.

On the other hand, if you have a newer person that wasn't there, then as part of their work with the team, they are going to have to look at the event and the summary and closeout of that, and come up to speed in terms of what does that mean for the overall process, so there is not a single equation but that information has to be factored into the ISA by the team. What that means is you have to take whatever action is necessary to make that happen.

MR. PERSINKO: Is that the way everybody has been doing it?

MR. KENT: This is Norman Kent from Westinghouse.

When the Commission asks the industry one question, you will probably get seven answers, so this is my turn.

Being a member of the ISA team, and we were doing CSEs before the acronym changed, we at Westinghouse pride ourselves on having as many filing systems for tracking things as you have rules for allowing us to report things, so I look at datapacks where we record significant items and close them out with a root cause analysis. I look at the PHA reports. I look at our computerized tracking systems. I look at all the red book items which are a low level -- these things happen in the plant.

Now I don't have a piece of paper that says today I looked at these six, but I read through them. I read the NRC inspection reports because if I am doing an ISA on a system that has a nonfavorable geometry, I think, oh, yes, in 1995 in a different area of the plant we had a problem with duct tape and NFGs -- well, I am going to go look at that.

So the answer is yes, those things have to get looked at in order for me to do my job and have it independent reviewed by someone who will say yes, I agree with the evaluation you did, but I didn't keep a list.

MR. SCHILTHELM: I think we have made the transition a little bit on criticality safety with this list, but we are starting to talk about contents of a license application, and as an industry we have a fairly clear picture in our mind of what the contents, of what we believe the contents of a license application should be in that scenario where we have had some differences, so maybe those differences are starting to show up here in that in our mind the contents of the license application are those safety commitments that we are making that we plan to live by and that is why we see this information as out of line with the license application.

On the other hand, you maybe haven't quite bought into that concept yet, so that might be the problem here, that we are kind of jumping into another ballfield.

MR. SHERR: Well, I think we understand the views. I think the notion of --

MR. LEWIS: If I could just get one last clarification.

There seem to be two issues here. One is whether anything at all is submitted to NRC in terms of the previous events, and the second issue is whether the backward look should go back 10 years, so there are two things. The 10 years is an issue. Am I correct?

MR. GOODWIN: I am not sure 10 years is the issue.

MR. VAUGHAN: Well, if you go back 10 years, you are not going to get good information, but I wouldn't say that 10 years versus

five years is significant. What is significant is the problem that this 10 year list or a five year list is kind of an after-the-fact look at safety and what the NRC needs to be driving if they want safety at the plants is safety while the plant is operating.

You don't want to try to drive safety after the horse has gotten out of the barn. Make sure you keep things healthy as you go and that is a combination of commitments in the license that the licensee has to live with and an inspection program that periodically looks at that.

MR. LEWIS: Well, I guess my point was if we just put in the rule that the applicant in performing the ISA should look at previous events at the plant that are significant then that begs the question of how long you have to go back and it begs the question of what significant is and something in the application is going to have to show that that was done.

MR. SHARKEY: You are getting back into the prescription again and how you perform an ISA and the detail and there's a good guidance document, the AICHE book, the SRP will have more guidance. I don't think it is really something that needs to be in the rule.

I think it is something we pretty much do already. It's part of doing a proper ISA so to speak.

MR. SCHILTHELM: One of the chapters is not currently in any of our licenses at least in the commitments portion is a chapter on how we do ISA and we are all going to have to write that chapter and put it in our license.

MR. VAUGHAN: One or two of us have it in our license --

MR. SCHILTHELM: And we have it in Part 2 of our license,

but clearly that is the area in the license application where we will be making commitments as to the quality and the performance of the ISA. There is a standard review chapter on what goes in that license application.

Also it would seem like those ISA commitments and that commitment to review historical data, whether it is in the regulation or ends up in the license application, is going to be a commitment that we are going to have to make.

MR. BIDINGER: You want to be careful about that commitment for historical data. You don't want to make it overly retroactive --

MR. SCHILTHELM: Well, you can only review what you have. I can't recreate history. We can review what we have so, you know, if you specify 10 years and I have only got 8 years' worth --

MR. BIDINGER: But it's only when the rule becomes effective that you start looking.

MR. SCHILTHELM: Yes. You make your best effort given the information you have.

MR. SHERR: Okay. Well, I think we can digest all that.

If there are no other comments, the question is where we go from here. We talked a little bit about that.

One thing is this meeting is being recorded and a transcript of the meeting will be put on the website. I have asked Felix to give us an electronic version of the viewgraphs so that they can be conveniently included with the transcript.

We understand -- I am just not sure whether it is on Friday or early next week we will be receiving the comments on the balance of issues -- the reporting requirements, baseline criteria, and change

process, so we look forward to those comments.

Also we indicated you all will be working hard tomorrow and giving us annotated comments on Chapter 5 and that will be helpful in our considerations of the changes, and I am sure Harry will appreciate that.

As mentioned earlier of course, we have already put one version of 70.60 and 70.62, the basic performance requirements of the rule, on the Web in response to the KIM safety comments. We will be posting a revision of those sections considering the comments we have discussed today and then the criticality comments in the letters as well as comments that we have received on the earlier posting, and we are shooting to have that posted on the web in one to two weeks from now.

As far as the Chapter 5, our target is to get a revised Chapter 5 and to post that on the Web and with a target of somewhere in two to four weeks, depending on how many issues we have to resolve.

As Rob mentioned earlier, we are currently reviewing the so-called ISA comments, which gets into some basic issues in terms of what is in the license application and all that, and we are hoping to post something on the Web, proposed draft rule language on that, in the next couple, two to three weeks.

In that same timeframe, hopefully we get the balance of rule comments early enough to the point that we can post rule changes in relationship to those, in a two to three timeframe too. Of course, we haven’t seen any yet so we don’t know how complicated that is.

We are in the finishing touches of revising the decommissioning SAP chapter, which has been revised. Quite expansive too, I think, the comments that have been received on that, and we will

be posting that chapter within the next couple of weeks.

So those are the postings that we are anticipating. When we post those, we will be asking for comments, if possible, within a couple weeks, to keep the process moving, and those timeframes are kind of consistent with allowing another round of reactions to what is posted within the timeframes we have set up for in terms of mid-February and early March for the rule and SRP comments.

Felix had mentioned in his opening comments about future public meetings. I think in this context it is best to see how this plays out. In other words, when we post these things, I think if it becomes evident that there is a need to discuss some issues, that we have missed some serious points or something like that, and it would useful to go over that, probably in the early February to mid-February timeframe would be the time to do that, but at this point I would say let's just kind of see how it goes and we can always arrange that meeting on a week's notice or something.

At the last meeting we understood that we would be receiving some additional comments on the Standard Review Plan in late January to mid-February timeframe. I think, Felix, in your opening comments you were suggesting that that may be delayed? So we will see. We can only consider what we get.

MR. KILLAR: Well, at lunch we talked some about the morning session and what we heard, and you all probably need to confirm, but what we heard is you are going to rewrite the SRP and that the things that might be more helpful for you at this stage is like we talked about doing with Chapter 5, where we go through and not rewrite the chapter for you but just annotate certain things that we have pointed out.

Now, you know, if that is not helpful, then maybe we ought to do something else but it seemed like that would be the most helpful thing to do.

MR. SHERR: Any comments we receive will be helpful. I mean if the most convenient way to do it is in terms of the annotated comments, then that is fine.

I mean the SRP -- it is easy to talk about putting the rule out and we are putting out two SRP chapters in terms of revision. We don't intend to do the whole SRP in this way. It just isn't possible.

There are two other things we talked about at the December 4th meeting is -- they weren't commitments, they were just possibilities.

One had to do with the matter that Liz raised earlier was an example chapter that would identify the level of prescriptiveness that the industry considered appropriate and that was just identified as a possibility, not a commitment. I don't know if we have grown stronger or weaker at this point or whether it is still just viewed as a possibility.

MR. KILLAR: I think it is safe to view it as a possibility but as the process goes on, it is an iterative process, and I think we are capturing some of the generic type issues that we have identified and we have talked about Chapter 5 today, and I think as we go through tomorrow we may be able to pull up on that some more, so it's still a possibility. It's just a function of timing and resources to work on it.

MR. SHERR: Okay. The other thing that we talked about in December was feedback on -- if you have attachment -- was the example of

the ISA summary that was in the rule package, to give us an idea of if we are looking for things in there that are more detailed than considered appropriate, what are those things in your mind.

That would be helpful. One thing that I want to mention -- if there is anybody here who is not currently receiving E-mails telling that something has been put on the website who wants to receive such E-mails, probably the best thing to do is to send an E-mail to Barry Mendelsohn, which is BTM1#NRC.gov and just let him know that you want to be added to the list.

Again, I would like to thank the industry for your helpful participation and the written comments that were provided. All this helps us in terms of advancing our development of the rulemaking package, and we also look forward to receiving the annotated chapter and I think that will help a lot too.

She is not here, but again I want to thank Carrie Brown for all the work she did to make the arrangements for this meeting, including a lot of twisting a lot of arms so we got a decent-sized room, even though we didn't make use of the whole room, but these things are important.

Finally, I would like to thank Mark Mahoney, who is the recorder for the meeting, and the transcript is very important to all of us, and we thank you for your efforts -- and thank you --

MR. KILLAR: Wait a minute. There's a few things that we want to discuss.

MR. SHERR: Okay.

[Laughter.]

MR. KILLAR: While we've got you. On the information that

you have been putting up on the web, we find it very helpful, but one of the things that would be even more helpful, if you would put the entire rule up on the web and then identify those sections that are changed.

One of the concerns we have with reading the first iteration, it says this changes this section but it doesn't mean because this isn't here it's not included, so it left a question of, well, wait a minute, they didn't have this here. Does that mean it's not included or does that mean that will be included but they just didn't put it up here?

So it would be helpful if you put the entire rule up on the web, and so when you do make the changes we know what changes have specifically occurred and what sections you specifically have not changed, so that it is clear to us what has changed and what hasn't changed.

MR. SHERR: Okay. I think one problem is that the fact that we haven't changed something doesn't mean that we don't intend to change it. We are looking at different sections --

MR. KILLAR: Well, that's fine as long as -- you know, our concern is that when you are changing one section that may have reference into another section, and we want to know how that section is changed.

Now if you don't change it, then we are going to assume that it's still the same way it has been, rather than assuming that section is going to change until we see that change.

The concern is that we want to make sure that when we look at this we are looking at it in its entirety and so we understand how maybe one section impacts another section of the rule and when its left

with just the specific thing that's changed, it is not clear to us what impact it is having on the other sections, so we would like to have the whole thing up there and as sections change to the rule you make those changes in any other associated sections that change accordingly, so it is clear to us what has changed and what hasn't changed, understanding that maybe it hasn't changed today but maybe next week or two weeks from now as you go through another iteration, you may change that.

MR. FREEMAN: But then you put it up there.

MR. GOODWIN: We had to work out of two or three copies of the rule -- at least two copies, the last version of 70.60 and .62, but we had a prior version and then we ended up getting the whole rule, and it is kind of hard going back and forth, and I think it would be much easier if you could put the whole rule and then, you know, use the vertical margins or line-outs, or annotations, whatever you might do, to indicate what has changes, but that way at least we can review it within the total context.

MR. SHERR: The changes would be from the original rulemaking package?

MR. GOODWIN: Right.

MR. SCHILTHELM: How many more subchanges do you have to make, are you planning to make before you get to Version 2?

MR. PERSINKO: Of the entire rule?

MR. SCHILTHELM: I mean Version 1 was presented to the Commission and we saw 1-A on the web. We saw 1-B. We saw a portion of 1-A on the web. We saw 1-B handed out today. There is a 1-C up that -- do you have D and E coming, or do you have D through H coming?

MR. PERSINKO: Well, we know some of the changes based on

some comments we are working on, but we also don't know how many more comments we are going to receive.

MR. SHERR: I think one of the things I wanted to clarify is the fact that we are not going to -- every time we receive an individual comment, we are not going to go back and respond to it. We are doing it kind of in a batch process. What I was suggesting earlier was that we do plan on what I consider the basic performance requirements of the rule, 70.60 and 70.62, we are going to come out with another version of that in light of the comments in the letters and the comments of this meeting as well as the comments on the earlier posting of that, so that is kind of one thing that we plan to do.

Then we plan to address the license application type issues -- the ISA comments type thing in another posting and in the balance of the rule comments, so when we do the balance of the rule presumable we have covered the entire rule at that point.

MR. SCHILTHELM: At some point we have got to clear our heads and get the whole thing in front of us.

MR. SHERR: Yes.

MR. SCHILTHELM: Maybe it is not the next time, but --

MR. SHERR: Yes. If we meet our schedules, in three weeks' timeframe we will have all that out there, and I guess I think -- I mean my feeling is that the first thing we had before, where we are dealing with the performance requirements of the rule and focusing on that to have that by itself seemed reasonable to me, but okay -- maybe because I see what is going on -- but of course I think as we move on these things, maybe we include these things in the context of the overall rule, as we roll these things over kind of thing.

MR. SCHILTHELM: At some point though --

MR. SHERR: But these are the chunks that we are focusing on.

MR. KILLAR: You see, to give you an example, when you posted the 70.60 and 70.62 you included in here the related definitions to 70.4 and you did away with the acute exposure guideline level -- the EGL. You say annotation -- this term is not used in the rule anymore, which implies you are going to delete all those tables and things along that line, yet you didn't bother putting that on the website to let us know that, yes, that in fact is what you are doing, where if you had the full rule up there and then you had annotated it at this section -- "This appendix is deleted" -- we know in fact that is what the intent is.

MR. SHERR: YEs.

MR. KILLAR: That is the point we are trying to make.

MR. SHERR: Okay.

MR. KILLAR: And then as the other sections get updated, those sections will be revised accordingly.

MR. SHERR: Yes. I think, especially as we continue on now and where we are changing other sections and there's interdependencies with the earlier sections, it is useful to have it all in context anyway, I agree.

Okay. That's the first one?

MR. KILLAR: Constructive criticism. I am just trying to make it an easier process for all parties concerned.

The other thing I wanted to spend a little time on, we had sent in our letter December the 22nd dealing with the ISA process. You

have indicated you have started work on that and are looking at some changes to the proposed rule accordingly.

Can you possibly give us some insights and maybe any questions you may have on anything we supplied?

MR. PERSINKO: Right now we are waiting for your balance of that. You have a section on 70.72 that you were going to submit, so that ties to the ISA and we are kind of waiting to see that letter.

MR. KILLAR: Our December 22nd letter is clear? You don't have any problems or questions or anything?

MR. PERSINKO: No.

MR. KILLAR: You agree with everything we said?

[Laughter.]

MR. PERSINKO: It's under consideration.

MR. SHERR: We agree with everything they agree with.

[Laughter.]

MR. KILLAR: The other thing, I guess maybe the last thing, is we right now do have a good group together. We have some time. Is there any other issue that you have some concern with that we raised previously that you may want to discuss -- like 70.72, the change process, you know? We are concerned with that and we want to make sure that comes out correctly, and I think there are some mixed emotions from the industry.

Some people feel that, gee, that's no big deal, and other people think that may be a big deal, so if you can give us some of the insights as to how you view it, it may help.

Similarly with the ISA summary, there was some concern when reading at 70.60 and 70.62 that you have put on the website here,

talking about the ISA summary I believe submitted with the application gave us the impression that it may be more than on the docket, and so we want to once again clarify that the ISA summary is only on the docket and not part of the license itself, so if you have got anything along that line that you want to share with us, we would be glad to hear it.

MR. PERSINKO: As far as the ISA summary goes, we are seeing that as not in the license but on the docket.

We're real interested in 70.72. I mean we haven't changed anything really from our previous views at the December 3rd meeting yet, where we gave up ideas about 70.72, so that really hasn't changed, that part, although we have been working on it. We have some internal things we are doing, trying to just get a better handle on possibilities on how we could change -- some possibilities on addressing changes in 70.72 but we are still waiting for your letter.

MR. KILLAR: I think then in that case I think that's pretty well wrapped up. Anything from anybody else? Any questions any members of the industry have for the NRC?

MR. DAMON: I have been thinking about -- I am Dennis Damon again.

There's a group of us here who have been looking at the pieces of ISA summary or ISA submittals that have been coming in, and I feel I should share some feedback on this. I mean there have been enough of us look at them that one thing that is clear is that it is very -- it is possible to do a good description of what the safety control scheme is for a process and it is possible to do a poor job and that is really the key to the ISA summary.

It doesn't do any good if all the ISA summary is is

basically a set of notes to the guy who did it and it's only meaningful to him. It is an attempt to communicate to us here on the Staff, and what we find is some of the things that are submitted we can't figure out what in heck this is, you know? We can't understand what the nature of the event was or the safety control or whatever it is, so I am just trying to feed that back to you, that that is where the rubber meets the road. All this other stuff is about what is committed to and it is very important to the legal structure of what goes on, but in terms of what the staff was going to actually do, it is the quality of the writing and the communication that is going to be the actual important thing.

MR. SHERR: True -- based on discussion earlier, we were saying there are some good examples.

MR. DAMON: Yes, there are some good ones that have been submitted and B&W -- the combination of what B&W submitted and what GE submitted would be the ideal thing.

[Laughter.]

MR. SCHILTHELM: You don't have to do it here, but if you guys could get back with us specifically and talk through some of the things you view aren't adequate, that sure would help, because the wheel is cranking at home as we speak and we are making more of them so --

MR. GOODWIN: Yes, we are too. On the schedule the '98 versions are about ready to come.

MR. DAMON: Well, let me describe what it is about what B&W did and what GE did that's good.

To a certain extent the tables in the back of the ISA chapter of the SRP tried to reach in this direction, but I mean there is so much other stuff in there it may have gotten lost and it's hard, it's

very difficult -- what I discovered from that is that it is very difficult for me to, or anyone else I think, to generate an example of something. The reason is you have to have a real physical system that you thoroughly understand yourself because you are talking -- you start to generate an example and pretty soon you are making up stuff that you don't know that it's physically realistic or not even, so you really have to have a real system, and someone who understands it, to generate a good example, so it is much easier for us to look at things that you have done as good examples.

The thing about what B&W did that was good is it's a structured table. It's in the chapter on the SRP chapter on ISA. There's a table with headings and it tells you what the control parameter is, what the control limits you are trying to control it to, what you are using to control it, and what you are doing to those controls to make sure they are reliable.

The good thing about GE's is that it was an attempt, a narrative attempt, to describe how the control scheme works for a whole process -- you know, just narrate it, try to explain it to somebody, so that whoever was doing that had very clearly in his mind an attempt to communicate and so he succeeded. He succeeded in communicating because he was trying to do that, and by narrative I mean it was maybe four sentences about the safety control scheme for a process.

Now the thing that Westinghouse -- I should give Westinghouse a pat on the back here -- Westinghouse submits fault trees for doubly contingent situations like criticality. That is ideal for communicating how the different things are supporting one another in terms of redundancy and we have seen other attempts to do that, and it

is very -- we took one example which we thought was a nice redundant system and then we tried to replicate and draw the fault tree, and then we called the licensee and they said, no, you're wrong, completely wrong -- it isn't anything like that, you know --

[Laughter.]

MR. DAMON: So that is what I am saying is fault trees are an unambiguous statement of how you see the thing as being redundant, and just talking about a qualitative fault tree, you know, and so that was the -- we learned that lesson from that is that if we review, if we don't have a fault tree -- if it is a redundant thing like that with multiple different ways that you get the redundancy and you try to describe it verbally, we are likely to screw it up in understanding it. We just won't get it.

MR. KILLAR: So in the future if all of our facilities sound like GE and they are mapped out like B&W with fault trees like Westinghouse --

[Laughter.]

MR. BIDINGER: That fault tree process works wonders for reporting as well -- just laying out the logic of your control system. I have been exposed to it, worked under it, and I recommend it to everybody -- except the regulators. It is not a rule.

[Laughter.]

MR. GOODWIN: Just a final comment in regard to some earlier comments or remarks that Dennis made regarding the nuclear criticality when we were discussing the removal of that from the list of high consequence events.

I kind of got the feeling that maybe there was some

reluctance in moving that, maybe because it might detract from the importance or the priority that was given by the licensees, but given that we all understand that if we had an accidental criticality we most likely would have or certainly would have potential health and safety effects, it would certainly be a political disaster to have a criticality at one of our sites and not to mention the fact that it would, if it didn't destroy it, it would really set back the industry, but for the record I just wanted to let you know and to affirm and to assure you -- and if I am not speaking on behalf on the industry, someone speak up -- but it is our strategic initiative as well not to have a nuclear criticality, accidental that is, at our sites, and that is first and foremost, so Dennis mentioned that a couple of times and I thought I just had to respond to that -- always -- it may be unwritten but it is there.

MR. SHERR: We never doubted that.

MR. GOODWIN: Just wanted to make sure.

MR. SHERR: Thank you very much. Thank you.

[Whereupon, at 2:52 p.m., the meeting was concluded.]

10 CFR PART 70

***

PUBLIC MEETING

January 13, 1999

***

BRIEFING CHARTS AND OTHER MATERIAL

NRC / Industry Interactions

- Public meeting December 3-4, 1998
- Discussed performance requirements, chemical hazards, criticality, ISA, Standard Review Plan, preliminary ISA
- Received NEI letters on chemical hazards (Nov 4), ISA (Dec 22), criticality (Dec 17), SRP issues (Nov 25)
- Expect NEI letters containing balance of comments on rule, SRP

Part 70 Website

- Website established for NRC to share Part 70 revisions and receive timely industry/public views
- Fed Reg Notice on availability and use of Part 70 website for Part 70 issued 12-24-98
- Chemical hazards and performance rule language revised/posted (70.60 and 70.62)

Schedule

- Dec - Feb: Posting to web draft rule language/SRP
- Dec - Mar: Receipt of comments from NEI/others
- Jan 13-14: Nuclear criticality safety public meeting
- Mid-Feb: Deadline for rule public comments
- Early-March: Deadline for SRP public comments
- June 1, 1999: Rule package to Commission

NUCLEAR CRITICALITY SAFETY

[link to NEI letter]

●a **Risk-Informed Regulation**

- evaluate the risk
- establish appropriate risk-based levels of protection
- establish appropriate risk-based levels of assurance for items relied on for safety

●b **Double Contingency**

- proposed §70.60(b)(2) is acceptable
- concur with application of ANSI/ANS-8.1 for NCS but disagree with inclusion in §70.64 'Baseline Design Criteria'
- incorrect application of Double Contingency in SRP

●c **Graded Level of Protection**

- choice of controls dependent on risk or likelihood

●d **Quality Assurance**

- management measures concept (§70.62(d)) supported & preferable to 'Quality Assurance' term
- unnecessary level of prescriptiveness (items (1) through (8))
- recommend re-wording of management measures to read: *"Management should establish appropriate measures to ensure that all items relied on for safety perform their safety functions when needed"*

●e **Historical Nuclear Criticality Data (§70.65(c))**

- information already available to NRC from Bulletin 91-09 filings and 10 CFR 70.50 and 10 CFR 70 notifications
- not appropriate in a license application in that it is not representative of performance commitments

70.60 Performance Requirements for Certain Licensees Authorized to Possess Special Nuclear Material in Quantities Sufficient to Form a Critical Mass.

(a) Each applicant or licensee required to establish and maintain a safety program pursuant to §70.62 of this part shall demonstrate, in the integrated safety analysis, compliance with the performance requirements in paragraphs (b), ~~and~~ (c), and (d) of this section.

(b) The risk of each credible high-consequence event must be limited, unless the event is highly unlikely, through the application of engineered controls, administrative controls, or both, that reduce the likelihood of occurrence of the event or ~~(except for nuclear criticality)~~ its consequence. Application of further controls is not required for those high-consequence events demonstrated to be highly unlikely. High-consequence events are those internally or externally initiated events that result in:

~~(1) a nuclear criticality;~~
~~(2)~~(1) an acute worker dose of 1 Sv (100 rem) or greater total effective dose equivalent;
~~(3)~~(2) an acute dose outside the controlled site boundary of 0.25 Sv (25 rem) or greater total effective dose equivalent;
~~(4)~~(3) an intake outside the controlled site boundary of 30 mg or greater of uranium in soluble form; or
~~(5)~~(4) an acute chemical exposure to an individual from licensed material or hazardous chemicals produced from licensed material that: (i) could endanger the life of a worker, or (ii) outside the controlled site boundary, could lead to irreversible or other serious, long-lasting health effects. If an applicant possesses or plans to possess quantities of material capable of such chemical exposures, then the applicant shall propose appropriate quantitative standards for these health effects, as part of the application information submitted pursuant to Section §70.65 of this Part.

(c) The risk of each credible intermediate-consequence event must be limited, unless the event is unlikely, through the application of engineered controls, administrative controls, or both, that reduce the likelihood of occurrence of the event or its consequence. Application of further controls is not required for those intermediate-consequence events demonstrated to be unlikely. Intermediate-consequence events are those internally or externally initiated events, that are not high-consequence events, that result in:

(1) an acute worker dose of 0.25 Sv (25 rem) or greater total effective dose equivalent;
(2) an acute dose outside the controlled site boundary of 0.05 Sv (5 rem) or greater total effective dose equivalent;
(3) a 24-hour averaged release of radioactive material outside the restricted area in concentrations exceeding 5000 times the values in Table 2 of Appendix B to 10 CFR Part 20; or
(4) an acute chemical exposure to an individual from licensed material or hazardous chemicals produced from licensed material that: (i) could lead to irreversible or other serious, long-lasting health effects to a worker, or (ii) outside the controlled site boundary, could cause mild transient health effects. If an applicant possesses or plans to possess quantities of material capable of such chemical exposures, then the applicant shall propose appropriate quantitative standards for these health effects, as part of the application information submitted pursuant to Section §70.65 of this Part.

(d) In addition to complying with paragraphs (b) and (c) of this section, the risk of nuclear criticality accidents must be limited by assuring that under normal and credible abnormal conditions, all nuclear processes are subcritical, including use of an appropriate bias and uncertainty adjustment for the

methodology used and an approved administrative safety margin. Prevention of the reaction shall be the primary means of protection against the consequences of nuclear criticality accidents; and where practicable, engineered controls shall be used rather than administrative controls.

~~(d)~~(e) Each engineered or administrative control necessary to comply with subsection (b), ~~or~~ (c), or (d) of this section shall be designated as an item relied on for safety. The safety program, established and maintained pursuant to §70.62 of this part, shall ensure that each item relied on for safety will perform its intended function when needed and in the context of the performance requirements of this section.

Slide 1

SRP ISSUES

1. PHILOSOPHICAL
2. LEVEL OF PRESCRIPTION
3. REDUNDANCIES
4. DEFINITIONS

Slide 2

PHILOSOPHICAL ISSUES

- 5.4.4.1.1 CRITICALITY CONTROLS DON'T NEED HIGHEST LEVEL OF QA

- 5.4.4.2.4 NO NEED FOR PERFORMANCE BASED TRAINING

Slide 3

PHILOSOPHICAL ISSUES

- 5.4.5.1.5 "NO DECREASE IN EFFECTIVENESS" RESULTS IN INCREASED LICENSE AMENDMENTS
- 5.4.5.2.5 K_{EFF} FORMULATION TOO DETAILED AND NOT NECESSARY

NEI

PHILOSOPHICAL ISSUES

Slide 4

- 5.4.5.3 TECHNICAL INACCURACIES EXIST
- 5.4.6 USE OF PROBABILISTIC TECHNIQUES INAPPROPRIATE DETERMINATIONS CAN'T BE MADE FROM APPLICATION

Slide 5

LEVEL OF PRESCRIPTION

- AUDIT FREQUENCIES
- EXPANDED KEFF CALCULATION REQUIREMENTS
- ADHERENCE/ EXCEPTIONS TO DOUBLE CONTINGENCY

NEI

Slide 6

REDUNDANCIES

- TRAINING REQUIREMENTS (11.4)
- ORGANIZATIONAL REQUIREMENTS (2.0)
- MANAGEMENT CONTROLS (11.0)

Slide 7

DEFINITIONS

- INCONSISTENTLY REPEATED FROM RULE (ITEMS RELIED ON FOR SAFETY)
- CONFUSION (DOUBLE CONTINGENCY/DOUBLE CONTINGENCY PRINCIPLE)

Slide 8

DEFINITIONS (CONT.)

- DEFINED BUT NOT USED (CRITICALITY CONTROL SYSTEM)

- USED BUT NOT DEFINED (SAFETY MARGIN)

NEI