UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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PUBLIC MEETING WITH NUCLEAR ENERGY INSTITUTE

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U.S. Nuclear Regulatory Commission
Two White Flint North, Auditorium
11545 Rockville Pike
Rockville, MD

Thursday, December 3, 1998

The above entitled meeting commenced,pursuant to notice, at 9:01 a.m.

PARTICIPANTS:

CARL PAPERIELLO, NMSS
LIZ TEN EYCK, NRC/FCSS
BILL BRACH, NRC/FCSS
DREW PERSINKO, NRC
GARY COMFORT, NRC/NMSS
HEATHER ASTWOOD, NRC/FCSS
ROB LEWIS, NRC
KATHRYN WINSBERG, NRC

P R O C E E D I N G S

[9:01 a.m.]

MR. SHERR: Good morning. I'd like to welcome you all to our meeting today on the Part 70 developments. My name is Ted Sherr. I'm chief of the Regulatory and International Safeguards Branch in the Division of Fuel Cycle Safety and Safeguards.

There's a lot of familiar faces here, and I think we all know why we're here. But just in case there's somebody here who hasn't been here before, the purpose of this meeting is to provide an opportunity to further discuss the amendments to 10 CFR Part 70 to place the regulations on a more risk-informed basis.

It might be useful to quickly review some of the background. Staff efforts on the revision of 10 CFR Part 70 commenced in 1993, and so we've almost been working on this for six years. So it started in '93. At the request of the Commission in 1995 staff's preliminary draft rulemaking package was provided for public review, and at that time the industry indicated they did not support the proposed approach and the rule at that time.

Subsequently the Nuclear Energy Institute at a Commission meeting in 1996 proposed an approach for rulemaking, and at the encouragement of the Commission, NEI submitted in September of '96 a petition for rulemaking on Part 70.

In June '97 the staff proposed to the Commission a resolution of the petition for rulemaking, and identified -- they recommended a number of features for the proposed rule. This was contained in a Commission paper, SECY-97-137. The staff recommendations included some elements of the petition for rule that had other elements as well.

In August of '97 the Commission approved staff's proposal and requested that a rulemaking package be provided to the Commission

for its consideration by July 1998, which is now nearly five months ago, I guess. And the staff did provide such a package to the Commission in July. This was in the form of SECY-98-185, and it was a draft proposed rule for its consideration.

A month later there was a Commission meeting on August 25, 1998, where NRC staff briefed the Commission on the rulemaking package, and also NEI provided a briefing to the Commission and indicated in there preliminary views on a number of the issues raised in the rule.

On that same day there was another public meeting with the executive director for operations, and at that meeting it was decided that another public meeting would be useful to further discuss issues relating to the proposed rulemaking. And subsequently, approximately a month later, September 29, we had a meeting in this room, I think -- no, it wasn't -- where various matters were discussed, and there were presentations by NRC staff on the proposed rule and the standard review plan, and presentations by NEI and the industry on a number of related issues.

At that time both NRC and the industry representatives identified a number of issues that required further discussion, and we agreed there was a need for an additional meeting. And today's meeting is in response to that need.

And finally in the sequence of events, just this week, on December 1, the Commission issued a staff requirements memorandum on the Part 70 rulemaking, and this will be discussed under the first agenda item.

The agenda for today's meeting has been distributed, and it's included in your packet. Arrangements have been made to allow two days for discussion of the issues covered by the agenda.

The Nuclear Energy Institute has submitted written comments in relation to the second agenda item, that is, chemical safety, and a

third agenda item, standard review plan issues. Copies of this correspondence is included in the packet of information.

In addition, NRC staff have identified some questions relating to the NEI comments, and these have been provided to NEI, and these are included in the packet as well.

We had anticipated receiving written comments on issues relating to nuclear criticality. We understand that these comments are still forthcoming, and will involve a number of detailed technical issues. An additional meeting is being scheduled tentatively at this point in mid-January to discuss the detailed technical comments concerning nuclear criticality issues. We will still discuss nuclear criticality today, but in terms more general issues.

Before we begin I would like to make some introductions: Carl Paperiello, Director of NMSS; Liz Ten Eyck, Director of Fuel Cycle Safety and Safeguards; Bill Brock, Deputy Director of Fuel Cycle Safety and Safeguards. And then there's what we call the Part 70 task force. This task force has been established to provide a dedicated effort to work on the various Part 70 issues and to develop the rulemaking package for the Commission within the prescribed schedule. And the leader of the task force is Drew Persinko. And the members are Gary Comfort, Heather Astwood, Rob Lewis, and our legal adviser is Kathryn Winsberg.

So before we begin, a few administrative announcements. The agenda doesn't include times for agenda items, basically because we really don't have a very good idea how long and how much time we're going to take on each agenda item. But I think we have enough time, 2 days, to cover it, and we're not too concerned. We anticipate we'll cover at least the first four agenda items today.

On each agenda item there's opportunities for questions and discussion, and I'd like to remind all speakers to be sure to use the microphones when they make any statements, to assist our recorder of the

meeting make sure he has a complete record.

We plan on a short break around 10:15 or whenever it seems to fit in with the agenda, and break for lunch at 12 or thereabouts, and then we reconvene an hour later and continue until 4:00 o'clock, possibly with a break in the afternoon as well.

We are scheduled to begin tomorrow at 9:00 o'clock. There's the usual restrictions for no smoking, eating, or drinking in this room, and the rest rooms are right outside the doorway there. As I mentioned before, this meeting is being recorded.

We can begin, unless there are any questions. Oh, I'm sorry. We did the introductions. Felix, if you would please do the industry introductions.

MR. KILLAR: I think I'll let each individual introduce themselves. That way I won't mispronounce their last names. So I know them as Brian and Charlie and Wilbur and what have you. But I'm Felix Killar. I'm the director of materials licensees for Nuclear Energy Institute.

MR. SILVERMAN: I'm Don Silverman. I'm with Morgan, Lewis & Bockius.

MR. VAUGHAN: Charlie Vaughan, GE Nuclear Energy.

MR. GOODWIN: Wilbur Goodwin, Westinghouse, Columbia, South Carolina.

MR. ELLIOTT: Mark Elliott, BWX Technologies in Lynchburg, Virginia.

MR. SHARKEY: Bill Sharkey, ABB Combustion Engineering, Hematite, Missouri.

MR. KIDD: Brian Kidd, BWX Technology.

MR. EDGAR: Jim Edgar, Siemens Power Corporation, Richland, Washington.

MR. SHERR: Thank you. We'll proceed to the first agenda

item, which is the next steps in the development of the revised 10 CFR Part 70.

As I mentioned in the introductory comments, the Commission issued this week the staff requirements memorandum in relation to the proposed rule package that was provided to the Commission last July, and a copy of that SRM is included in the packet of information that you have. The SRM indicates that the Commission disapproved publication of the proposed rulemaking and requested that staff continue to discuss all relevant documents with stakeholders in the public forum including the use of Internet, and submit a revised proposed rulemaking to the Commission for approval in six months. That's six months from the date of the issuance of the SRM.

The Commission indicated that staff should consider the insights from the public discussions as well as a number of issues that they identified in the SRM in developing their revised proposal.

In terms of the process for public comments, as indicated, the Commission indicated that we should use a public forum, including the Internet. As I mentioned earlier, we have scheduled another meeting to deal with nuclear criticality safety issues in mid-January. We plan as the primary mechanism for providing related rulemaking information and posting a rule on SRP options under consideration to use the website or Internet for this purpose and as a means for soliciting public comments on these posted information.

The website has already been established. The public announcement for this meeting had identified that. It presently includes the transcripts of past meetings, the proposed rulemaking, that is, SECY-98-185, the Nuclear Energy Institute comments on chem safety and the standard review plan, and staff questions concerning these comments and in fact the agenda for this meeting.

In the future we will post the transcript of this meeting as

well as any other future meetings as well the rule on SRP options which will include selected draft text for public comment.

When we post the information on the website in the future, we plan to provide notifications to all individuals who have identified an e-mail address on the signup sheet when they came into this room, and to any other individuals who express such interest. So if you neglected to sign in or provide an e-mail address and you're interested in being notified when we put things on the website, please do so.

In your packet there's more information concerning the contents of the website and directions how to access it. Barry Mendelsohn, who is sitting in the third row here, he's managing the input to the website for us, and if you have any questions, please contact him. If you want to do it by e-mail, his e-mail address is BTM1#nrc.gov.

As I mentioned in the third item here, the SRM identifies a deadline of six months to provide the Commission a proposed rule package. We have worked out a schedule of activities needed to satisfy this thing, and it means that at some point or other we have to freeze comments that we can consider in order to get the package put together and through the concurrence process within NRC. And based on our current schedule we see a deadline for comments on the rule in the mid-February time frame, and on the SRP in the early March time frame.

And we plan to be posting the rule options on the website through the end of January, so there would be about a two-week time period to react to those, and the SRP options through mid-February, again allowing two to three weeks to comment on those.

MR. KILLAR: Ted, if I can ask a question here. Is there anything you can do to improve upon that schedule? Looking at mid-February for the rule and mid-March for the SRP, question whether we have adequate time. I know your suspense date in the SRM is May 19, and

if you back off a month from that, that's say April 19, you've got to cut off at mid-March, which is basically a whole month. Not that I'm trying to make you guys overwork or anything, but it seems like you've got too much room in your schedule here. Can we cut some of that down so we have more time for interactions and to get this thing right?

MR. SHERR: Well, we'll take a look. I mean, we're -- actually my problem is I think this is more optimistic than -- we'll look at it, and we haven't done all the detailed scheduling aspects, which could throw it one way or the other actually, but it's our interest to extend it as long as possible, and we will try to do that. And I think there's also the possibility that comments we receive after a date -- we may be able to reflect them depending on to what degree they deal with that, and to the degree that we can't deal with them in a rulemaking we might just deal with it in the Commission paper itself saying subsequent to the deadline for comments, which could be factored into this thing, we received these things on this issue.

But as a general matter we would hope that we could in fact be responsive to all comments received in the actual proposed rule to the Commission and will try to extend it as possible, but I would also at the same time encourage you to try to get your comments in as early as possible.

MR. KILLAR: A related question. You say you're going to put on the website options for either I guess parts of the rule or the directions rules could go as well as options in the SRP. Is there going to be any clear indication as to which is your preferred alternative, because we may look at option A and say hey, that's exactly the way we feel it should go, while you guys are sitting there and looking at option B and saying yes, that's exactly the way we're going to go, but we'll throw A out there.

MR. SHERR: I think in general that we would expect that.

We would indicate what our preferred alternative is but what other ones could be considered. In looking for comments on that where in fact we're looking at the comments to help us decide what the preferred alternative is, we may not indicate that.

DR. PAPERIELLO: I'd like to comment on that. I would say where we believe we have a preferred option, either because the staff prefers it or we've had interaction with the Commission and the Commission is the scene of the SRM, we're going to have very close liaison with the Commission as we develop the rule, as this thing evolves. So if we have issues that come up, we can get a quick readout from the Commission where they stand, and where there is a preference and whose preference it is we will indicate. There may be cases where there is no preference, and we'll indicate that also. I think that would be the best way to be fair to everybody and also know, you know, just be the most efficient way to do it.

MS. EYCK: I'd just like to make one comment regarding the schedule, and I think it's important that people realize how these packages are put together.

First off, we need to focus on finalizing the rule, and until we finalize the rule language, it's very difficult for us to finalize the standard review plan. So one builds on the other. And then we have a regulatory analysis to complete that has to be built on the final rule and standard review plans, so that is something that I think is important to recognize. And then we have the entire statement of considerations to put together to explain the whole entire rule packet. So it isn't something that we have an end date and then all of a sudden we can put all this stuff together. One builds on the other, and that I think is what we've tried to take into consideration in looking at the schedule and how long it's going to take to do those different steps that build on various foundations.

So that's I think the reason that we talked about and backing out through a time chart that that was the dates that we would need to do to be able to complete all the additional tasks that go with the rulemaking package by the due date established by the Commission.

MR. SHERR: Any other questions?

Okay. Then we can proceed on to agenda item 2, which is chemical safety, and NEI and the industry will be providing their presentation on that question.

MR. KILLAR: Bill Sharkey will be providing the presentation.

MR. SHARKEY: Good morning. I'm Bill Sharkey, from ABB Combustion Engineering. This morning I'm going to give a brief presentation on chemical safety. This is one of the areas where I think we're pretty close to some kind of agreement, and hopefully by then this workshop will have this behind us and we can go forward into the other areas.

I'm going to cover a little bit on the proposed rule, the major changes, the existing standards that we are all covered under currently, our industry proposal, and a conclusion.

The proposed rule, 10 CFR 7060, has some -- hang on one second -- covers chemical hazards resulting from the processing of licensed radioactive material, adds some Appendices A and B that add two new terms new to us and some more acronyms, AEGLs, ERPGs -- AEGL, acute exposure guideline limits promulgated by EPA and the National Academy of Science, and then ERPGs, emergency response planning guidelines, promulgated by the American Industrial Hygiene Association. Also add a new definition regarding chemical safety for significant damage to property.

There's numerous existing standards for chemical safety. EPA has promulgated a rule in Part 40. One of the biggest aspects

that's just starting to take effect for the fuel industries is the risk-management plan. In the risk-management plan there's typically a threshold value above which you need to go into the risk-management planning phase, and for most of the fuel facilities, we have one or two systems currently that are subject to risk-management planning, typically ammonia and for some facilities hydrogen.

OSHA, of course, is primarily responsible for chemical safety, numerous standards on chemical safety covering most aspects of chemical safety. And again they have a similar rule to the risk-management plan that was promulgated several years ago, and that's a process safety management standard. And again typically the same chemicals are covered for our facilities under the PSM rule as for the risk-management plan, and those typically are ammonia, hydrogen. The process safety management rule, when you do your hazards evaluations, the process is very similar to ISA, and most of us have gone through --

DR. PAPERIELLO: Stole if from.

MR. SHARKEY: Exactly. Copied. So a lot of us have experience already in the methodologies of ISA by doing the hazards evaluations under OSHA rules.

In 1988 OSHA, NRC signed a joint memorandum of understanding, and this MOU highlighted four areas of regulatory jurisdiction I guess may be the right word. The first three are within the NRC domain: radiation risk produced by radioactive material -- obviously that one was a no-brainer; chemical risk produced by radioactive material; plant conditions which affect the safety of radioactive material, for instance, a fire, explosion, could interfere or spread contamination, potentially cause criticality. Those are the kind of things that were considered under that MOU.

I think we've kind of expanded that a little bit lately in our thinking, that if you had a chemical release and it interfered with

an operator who was relied upon for safety, that would be under the NRC's regulatory jurisdiction. And then purely chemical risks covered entirely by OSHA in the rules that are currently promulgated.

November 4 NEI sent a letter to the NRC with some proposed changes to the chemical safety rule as written in the SRP, and the changes were not real substantial, but included some minor definition changes. We've redefined hazardous chemicals to hazardous chemicals produced from radioactive materials, removed the phrase cause significant damage to property, and don't really think it's appropriate to have the AEGL and ERPG tables in the rule itself. The guideline values listed in those tables are subject to change by those regulatory agencies. The vast majority of these chemicals are things that we're totally unfamiliar with in the fuel facility, have never used, probably will never use, and it doesn't seem appropriate really to have these Appendices A and B in the rule itself.

DR. PAPERIELLO: So you effectively would just have us reference some -- those things.

MR. SHARKEY: Yes.

DR. PAPERIELLO: Gotcha.

MR. SHARKEY: In the language there, there was some reference to issuing direct rulemaking if they changed, but it seems more appropriate that you do direct rulemaking if there's exceptions, if the standards change and we don't want them, then we do some kind of rulemaking.

Not included in our November 4 letter, we had some discussion yesterday about the timing of how you apply these ERPGs and AEGLs. The table itself says it's for a one-hour time period. These are the periods of time that if you were exposed at this concentration for one hour, the average person would not be expected to suffer any consequences, irreversible consequences or death.

The way -- if you take the tables out without that footer on the top of it, it's not really clear. The analogy I would use would be a radiation exposure rate. We don't regulate radiation exposure rates. We regulate a dose. In this case we had some concern with the concentration values. We could foresee a situation where somebody walks into a room, smells real bad, turns around, their exposure duration was seconds, you go back later in respiratory protection, take a sample of the air. You find out that the concentration was above AEGL or ERPG values, and it puts you into violation space. So there needs to be some consideration for kind of the time-weighting average philosophy that OSHA uses, though that's probably not totally appropriate for this situation either, because there's probably concentrations over, you know, a minute or so at levels greater than ERPG could cause irreversible consequences.

So essentially what we believe is the OSHA-NRC MOU provides appropriate foundation for the rule, the four items there.

In our November 4th letter, we applied the principles to the rule and the SRP.

At this point I will take any questions on chemical safety or I can go back there and we can answer them as a collective group, but that concludes my presentation on chem safety.

DR. PAPERIELLO: I have a question and I just asked to see where in the rule we had the question of property damage with chemicals.

Is there anybody who can tell me where you would have property damage and not threaten human health or life from a chemical?

MR. SHARKEY: You could have a storage area where maybe the purely chemical's present in the storage area where if you had corrosion it could cause a leak, property damage, to a vessel, footings, and not expose an individual to hazards.

DR. PAPERIELLO: I guess I distinguish between two things.

I distinguish between your property and public property -- something off your site and there's two aspects.

The other thing has been pointed out to me. There is a provision in the Atomic Energy Act that part of our job is to protect not only life but we used to protect property but I know there is a tension, there's been a tension historically as to whether or not we should be concerned about whether or not licensees protect their own property and I don't want to get in the middle of that argument, but I am really thinking right now of offsite -- beyond your property, your boundaries, the issue and question of whether we need the particular phrase in the rule because of that aspect of the whole thing.

That is why I am trying to raise the question is it offsite? -- if I deal with just offsite property right now, is there any case where I can affect offsite property and not affect health or life, because it might be moot issue.

It's something I am going to pursue outside of this.

MR. PERSINKO: We provided questions meant to have a discussion on the various issues prior to the meeting. It is included in the handout.

In the chemical area we see the question as being most clarifications.

I wonder if we could get your responses to questions so far.

MR. SHARKEY: Could you read the question back? There were two questions?

MR. PERSINKO: There were five questions.

MR. SHARKEY: Five?

MR. SHARKEY: Yesterday was the first time we took a look at the questions.

In the area of chemical safety is it not real easy to draw some of the distinctions we are trying to draw here.

The first question, NEI proposes removing reference to accidents causing property damage -- and Carl, that was your question there -- is property damage, I guess from chemical safety events, covered by the Atomic Energy Act?

I am not sure -- we just pulled up the reference yesterday. I don't think it is clear in our minds whether it is or not.

Question (B) -- In every instance in the NEI letter and its attachments where NEI uses the term "radioactive material," doesn't NEI actually mean licensed material?

Licensed material probably is a better term than radioactive material. We agree with that.

Question (C) -- NEI comments identified those chemicals added to, used in, and recycled from radioactive materials as beyond NRC's purview. Use of these phrases could be confusing, e.g., chemicals used in radioactive material are within NRC purview, while mixed similarly, oil required to lubricate an item relied on for safety seems to be within NRC's purview and let's stop there with that question.

I guess the oil itself they would use for an item relied on for safety, the chemical hazards of that are not what we would consider subject to the NRC's purview.

The safety function of the oil if we relied on a certain type of oil to fulfill its safety function, an item relied on for safety, and we used something else and it wasn't adequate, then I think that would be in the NRC space, but not the chemical hazards or anything associated with that oil.

DR. PAPERIELLO: I guess I have got a question from my staff.

Would we consider oil used as a lubricant in a safety application, its chemical risks, to be within our purview?

MR. LEWIS: I don't think that is the question. I think the

question is that the wording was confusing by using the term "added to, used in, and recycled from" oil might be a bad example, but I think it should only be thought of as an example. I don't think we are trying to say we would regulate the chemical hazards of the oil, just that it would be within our purview.

MR. SHARKEY: I guess maybe if I tried to clarify what we meant by "added to, used in, and recycled from" with some real examples it may be able to clarify that.

A chemical that would be added to nitric acid for instance to dissolve uranium before it goes into the process has no radiological significance. That chemical would not be regulated by the NRC.

The nitric acid used in the process, not regulated.

"Recycled from" could be ion exchange eluants. A lot of us capture hydrogen fluoride now and sell it as a commercial product. We have release criteria for that hydrofluoric acid. When we capture that hydrofluoric acid, as long as we are within the release limits, that is not subject to NRC purview.

Those are the kind of examples we were thinking of for those terms.

MR. SHERR: My reading of your comments -- I think you were suggesting that when the chemical is mixed with the NRC licensed material, then it is within the NRC purview. Is that correct?

MR. SHARKEY: I think that is probably correct, but then there's some uncertainty in that term. We will take the nitric acid example again.

If you take nitric acid and mix it with uranium, you get uranyl nitrate. Uranyl nitrate is corrosive. Would the NRC if somebody got a burn on their skin, are they worried about the chemical safety consequences of the uranyl nitrate?

Now if the uranyl nitrate could cause a consequence of

concern, a large release of uranium or criticality because of its chemical form, I guess we would consider that within the NRC's purview, but I am not so sure about just the chemical hazards of uranyl nitrate.

Would the NRC be inspecting us to the material safety datasheets? If the material safety datasheets were inadequate or if you were missing one, and we all know that that never happens in our facility, but if it did would that be subject to regulation? Those are some of the questions I have on my mind for your regulation in that area, so I don't think the "mixed with" is totally clear but I think as a general rule of thumb, yes, when the chemical is mixed with licensed material that it is regulated by the NRC.

MR. SMITH: Hi, Bill. Can I ask a question?

MR. SHARKEY: Sure, Garrett.

MR. SMITH: Part C or Section C in the MOU clearly states if a chemical could affect the safe handling, i.e., a fire or explosion. The oil example would be a good example where potentially it could cause a fire. Your anhydrous HF or ammonia tanks at CE could potential go back to safe handling especially with material, nitric acid added.

Wouldn't these fall under the MOU?

MR. SHARKEY: If their leak or spill could lead to a consequence of concern, yes. If it doesn't cross those thresholds, then, no. The chemical itself, the concentrations, no.

MR. KILLAR: If I could add to that a little bit, certainly when you are doing your integrated safety assessment, you are going to look at the storage tanks, whether it is ammonia or it is hydrogen or what have you, and look at what could possibly -- what kind of adverse events could possibly happen at those, whether it be a fire, explosion, leaks, what have you, and then see how that impacts operations and the safety of the facility as far as nuclear material.

If that hydrogen tank is located far enough from the

facility that if it blew up and blew away, but none of the shrapnel penetrating the buildings or any of the radioactive material, then it would have no NRC jurisdiction.

It would certainly fall under the jurisdiction of OSHA and things on that line but not the NRC.

On the other hand is if that tank is sitting next to a building and you can somehow envision an eruption of that tank that would penetrate that building and then impact the operations within that building, then it would have an impact and it would fall under NRC jurisdiction, so, yes, it has to be taken into consideration but the events and the sequences have to be taken into consideration to determine whether there is truly an NRC jurisdiction or not. Bill?

MR. BRACH: I believe you comment, Felix, is on the right path. I think you really can't answer the question which chemicals are in or are not included without going through the ISA to look at the consequences.

I think if you look at the item C or the third item in the NRC-OSHA MOU and, Bill, you mentioned this in your overview, it does talk about the impact of chemicals in the process area or at the facility, the consequences of which could -- or potential consequences of which could impact the ability of operators to carry out their nuclear operations or the ability of the licensee to maintain their safe nuclear operations -- to maintain safe operations.

I believe what you need to do is go through your ISA and through that you will identify which chemicals are of concern, the consequences of which could impact the ability to maintain safe nuclear operations and those that are -- the answer to that is yes -- would fall under Item C of the OSHA MOU and then would fall under the purview of the regulatory scheme that we are discussing today.

Those that fall out, and I think Felix's example, the

allusion to a Back 40 type of activity, if there is no impact of those chemicals at the facility on the ability to maintain safe nuclear operations, they would fall under the fourth item, which on your overhead was identified as OSHA area of responsibility.

I don't believe you can answer that question a priori and say these chemicals are in or these are out without having gone through the ISA analysis to see what the potential impact or consequences is of those chemicals at the facility.

MR. SHARKEY: I think we agree with that.

MR. VAUGHAN: Just a couple of thoughts that may be just a little redundant, but I think if you look at the MOU a little different way and you look at what our discussions have been, it's pointing the direction of the NRC to focus on the nuclear aspects of the facility and it recognizes that as a part of doing that the relationship that chemicals have with that process and the safety of that process have to be considered.

In fact, in the ISA concept we have clearly identified the fact that chemicals and their effect on safety have to be evaluated, and if they have a detrimental effect on the nuclear or the safety of the process then they come in this purview but we are not saying that a little nitric acid burn or stain on somebody is not a nuclear -- is not in the nuclear arena, so that is the distinction that we are trying to get worked out in words, and you are right, Bill, the whole secret to this thing is to go through the ISA and determine what the chemical sensitivities are for each piece of the process, and then you have got the answer.

MR. SHERR: Can I seek a clarification?

It's clear I think what Bill was addressing, but where a chemical accident or chemical release, a potentially initiating event that potentially causes a radioactive exposure, and it's clear --

I think the real issue is in the area where the chemical toxicity exposure -- okay, sorry.

The real issue is where the performance requirements deal with the chemical toxicity effects. I think there is pretty much agreement that the chemical toxicity associated with NRC licensure like soluble uranium or the chemical toxicity associated with the reaction, chemical reaction, of NRC licensed material is something else, like the HF problem is clearly or is within the NRC bailiwick, and in fact it was the second issue that led to the MOU being developed.

I think the point that I would like to get some clarification here is to the degree to which there is any other chemical toxicity exposure that you feel is within NRC jurisdiction and I asked the question earlier about when the chemicals are mixed with the NRC licensed material are we then concerned about the chemical toxicity potential effects of those chemicals that happen to be commingled with the NRC licensed material or do you view that as an OSHA responsibility?

MR. VAUGHAN: I think we pretty well believe that that is in NRC space.

MR. SHERR: Okay.

MR. SHARKEY: Going on to (D) I guess, NEI proposed changing the 70.60 chemical consequence limit for the public in addition to the worker, which would not be protected by OSHA but presumably by EPA under 40 CFR Part 68.

NEI's basis for all the suggested changes appear to be the NRC-OSHA relationship as defined in the MOU. What is the basis for the changes to the public consequence limits?

MR. SILVERMAN: I thought I would take a crack at that one.

The NRC is correct in pointing out the distinction between OSHA coverage of worker safety and public safety. The OSHA MOU really just implements the statutory authority of the agency and it is a way of

describing in a little bit more detail the statutory authority of the agency and we continue to think that even with respect to public exposures the agency doesn't have the statutory authority to be regulating purely chemical hazards.

So what we talk about, the OSHA-MOU, a lot as sort of a shorthand phrase, we are really going back to the statute, so we think it is the same rules and principles would apply to public exposures as to worker exposures.

MR. SHARKEY: Okay, then, moving on to (E), how exactly does NEI's proposal address the NRC-OSHA MOU Item (C), i.e., plant conditions which affect the safety of radioactive materials and thus present an increased radiation risk to workers?

I think we covered that already and agree that those increased radiation risks, chemicals that would increase radiation risks, would be subject to the NRC.

MR. MENDELSOHN: Can I go back to (C) for a second, just want to get some clarification.

Again talking about the uranyl nitrate, as I understand -- correct me if I am wrong, but I understand that if a worker was burned by the nitric acid before it goes into the process, it's clearly not NRC jurisdiction, but if they're burned by the uranyl nitrate, that it is NRC's?

MR. SHARKEY: That part isn't clear to me either.

MR. ELLIOTT: I think you would also have to look at whether that consequence to that individual incapacitated that worker and affected the safety of the operation.

MR. SHARKEY: I think --

MR. KILLAR: Irrespective of that, the injury to the worker is not something that we regulate.

I may be talking a little bit out of school but I think it's

a clear case and if radioactive material is involved, if it is in the form of UNH, the NRC has jurisdiction.

If a worker gets burned with UNH, uranyl nitrate, what happens is the first thing you have to worry about is the burn, but if you have to send that individual off to a hospital, you have to worry about contamination as well, in which case there is no question the NRC has responsibilities.

I think in my perspective the answer to your question, Barry, is if he's burned with nitric acid before there is radioactive material involve, it's strictly an OSHA issue, but if he is burned with that UNH afterwards, then it is an NRC issue.

MR. VAUGHAN: Let me just comment on what happens in the real world now, and that is in those cases -- let's use the uranyl nitrate case -- if we have an employee that suffers a chemical burn from handling that uranyl nitrate, solution, it first is a chemical concern under the OSHA regulations, and there is a complete system for all of the recording and reporting of that information to OSHA.

Because there is nuclear material there, there is also a potential for that, and there are internal procedures in NRC space for how to deal with the radiological aspects of that particular injury in terms of the person, his surroundings, and any transport and additional handling that has to take place, so the real world, right this minute, is a little bit fuzzy.

It seems to work but it's -- if you get to a point like that, it's not always clear-cut even with the words in the MOU.

MS. EYCK: May I ask a question? If that individual was identified as providing an administrative control, say, for criticality or whatever, and the impact, the chemical impact on him and affecting his ability to do his job in performing that function as part of that control, what would your position be in that case?

MR. SHARKEY: I think if he is relied on for safety, then that is subject to the NRC's review -- purview.

MR. VAUGHAN: Yes, and I mean I guess you could get in a position where a single individual performing a single function was associated with a key criticality or radiological control, but that scenario is very unlikely. There's aren't very many of those positions around.

MR. COMFORT: I have got a question on (C) also, which basically is if you determine a chemical could impact an NRC licensed material through let's say an explosion, does that mean that NRC or do you believe that NRC would be responsible for regulating the whole, all aspects of that chemical or let's say that the chemical could also cause some kind of occupational exposure which wouldn't impact, and so would they not be regulating towards those occupational? -- just the safety impact from the explosion.

MR. SHARKEY: You would not be regulating the chemical aspects of the exposure, but if an explosion or fire could cause a consequence of concern, then, yes, that would be within the NRC's purview.

MR. COMFORT: Not the exposure?

MR. SHARKEY: Not the exposure itself, unless the individual exposed was relied on for safety and prevented him from his performing his safety function and, as Charlie said, those kind of controls for the most part don't exist -- a single operator being totally relied on for safety.

MS. GALLOWAY: Bill, I have a question.

Theoretically this definition -- I guess I am wondering though how these various events could be viewed by NRC in a precursor sense?

If we have one event that, as our definitions discussed here

today are clearly within OSHA space, wouldn't that though perhaps have some implications for NRC further down the line as far as an indication of an increased incident that might be in NRC space?

As a corollary to that, how -- well, answer that first, if you will.

MR. SHARKEY: I'm not sure that I really understood what your --

MR. KILLAR: Maybe I can give a quick answer.

First, one event would not be an indication of anything until you did the root cause analysis to determine what was the reason for that event, and then if that event was a potential -- could occur again, you would go and take whatever protective steps you need to take to make sure that doesn't occur in the future.

But lightening striking a tank and causing a tank to rupture is not necessarily a precursor to other future events.

MS. GALLOWAY: Okay, but suppose you have the example where there are perhaps programmatic issues such as training or procedure deficiencies which he could have a relationship with the OSHA-specific event and the NRC-specific event?

MR. SHARKEY: I guess the approach we would take -- let me describe the way we envision, the way we are going it now is that while you are doing your ISA you look at these initiating events and if one of these initiating events could cause a consequence of concern you would take some action to reduce the risk and by that risk reduction you would be looking at your systems to ensure that you have -- if training is part of it, then you would identify that training as important to safety and provide adequate training, but we are not proposing that we generate programmatic chemical safety requirements.

I think we envision that the ISA will determine what is important to safety and that we'll address it according to the results

of the ISA.

Now if a program were important and that is the way we decided we were going to handle it, then that would be the item relied on for safety, I guess.

MS. EYCK: And that sounds fine, but it would seem to me that it's not as clear-cut differentiating.

I would like to say here that there may be given an event a need for NRC to take a look at it to determine whether or not there are generic implications that we are concerned about.

MR. VAUGHAN: If I can make a comment on this subject, the events that we were just discussing are clearly precursor events. There's no question about that, but the simple event doesn't tell you enough to understand what the significance is and the significance of it can only be developed in the context of the operating plant and therefore the licensee needs a management system that captures all of these precursor events whether they are nuclear or not, but related events, and those get evaluated, investigated, root cause determined, periodically reviewed for significance and corrective action, but that needs to happen at the facility in the context of the operation with the information that puts it into the proper format to be used.

Obviously I think the NRC would probably he interested in the licensee's program to do that, but in terms of just reporting those kinds of events and labeling them in some way precursor I am afraid creates a false impression about the usefulness of that information.

MR. PERSINKO: Let me ask you, what is the practice right now with your facilities when you investigate and do a root cause analysis of a chemical accident incident?

Do your procedures have a specific clause in there to look for programmatic, larger, bigger picture issues, or just -- such as nuclear?

MR. VAUGHAN: I can comment on our procedures, but I can't comment on others.

Our management system requires the recording and reporting of all unusual events and the operations people initiate those forms and they prescribe or identify what actions they think are appropriate.

It is also reviewed independently by the environmental health safety group, and they may call for additional actions to be taken. Some of the simple ones are just an operations-led review, and they define their corrective actions and do it, right up to a full-blown independent root cause -- you know, tap root, root cause analysis.

All of the corrective actions go into a management tracking system and are tracked through and our safety council or safety committee. As one of the things that that committee does is periodically look at the sequence of unusual events and incidents we have had over the last period and look at those primarily to see if root cause work has been effective and corrective action has been effective or is there indication of a more widespread problem that really hadn't been addressed by looking at the individual incident. That is what we do.

MR. PERSINKO: Is that common among all the facilities?

MR. VAUGHAN: Yes.

MR. GOODWIN: That is very similar to what we do at Westinghouse, but I do want to underscore the fact that we do not just look at the specific incident, as Charlie said. We try to look at if it happened on a particular process line, we look at all the other process lines with similar types of equipment.

We also look at administrative controls, management controls, you know, anything that could have any bearing on the situation whatsoever, so it is a broad-based root cause analysis approach process.

MR. SHARKEY: I guess root cause is, in our system it's one of the tools, and so when you get to significant issues you go into the root cause.

You can do problem solving without doing root cause, a formal root cause analysis, so there is kind of a graded approach based on the significance of the occurrence, so in ABB's case it is similar to what Charlie described.

We all have systems in place.

MR. ELLIOTT: These types of management control systems are also required by our license.

DR. PAPERIELLO: I have a question. If I take a look at the November 4th letter to me from NEI, with the proposed words for your views on chemical safety, I would like to ask the people across the room -- Do you all support this? Is there somebody -- anybody there who disagrees with what was sent to me?

[No response.]

DR. PAPERIELLO: My concern right now is this was represented to me as the industry's position. I just wanted to make sure that is, because let me tell you what I heard today, and I want to kind of wrap up where I stand on this, and I do want to talk to the Commission about it. We got to where we are today for a variety of historic reasons. I want to consider what I was told. I would like to know more about what OSHA and EPA have in place. I would like to know what the rules are. I want to know what the practices are.

I would like to probably have OSHA take a look at the words you have presented to us to see what they think about how that affects the MOU and then consult with the Commission, and, of course, consult with my own staff, just to see where we come out. I just want to make sure that I don't find out at a later date that I don't really have the industry support for the words that are in the NEI submittal.

MR. GOODWIN: I think certainly I can speak for Westinghouse, we are in full agreement with the letter that was submitted to you.

DR. PAPERIELLO: Okay.

MR. GOODWIN: And my understanding, we have consensus on that. I will let someone else, you know, speak for themselves.

MR. VAUGHAN: GE feels the same way.

MR. EDGAR: I think Siemens does, too.

MR. ELLIOTT: We are okay with it.

MR. SHARKEY: ABB, we support it, although, personally, I don't agree with a lot of things, but as a company --

DR. PAPERIELLO: Yeah, I --

MR. SHARKEY: I think, in the back, Garrett and Don could attest to that. We have had a lot of debate on what is covered and we have got a long history of paper, too, between us in the chemical safety area. But, as a company, I think we are supportive.

DR. PAPERIELLO: I frequently have my staff at the Commission convince me of the righteous of something I don't originally agree with, so I know how that stands. Okay.

Unless there's anything else, why don't we move on.

MR. GOODWIN: If I may digress just a moment and make one clarifying comment. In the section or the slide where we were talking about the industry's proposal for removing the guideline tables from the rule, the other suggestion was to add the one hour duration to that. I might point out that in the proposed rule, in the definition section, the one hour limit was included for the ERPGs, but it was not for the AEGLs, and I believe -- I suspect that was just an oversight.

DR. PAPERIELLO: Probably.

MR. GOODWIN: So all we are saying is put the one hour duration in both cases there.

DR. PAPERIELLO: Good. I think it was very useful.

MR. SILVERMAN: I apologize to belabor it. One more just real clarifying comments.

DR. PAPERIELLO: That's fine.

MR. SILVERMAN: We gave a lot of proposed changes that were suggested. They are very repetitive. It is just the same sorts of language you are seeing over and over again as being modest changes in the rule. The real central part of this was the listing in the rule of the concentrations of concern.

As the rule was written before, it appeared to us that a concentration of concern, subject to NRC jurisdiction, could be construed to be a purely chemical hazard. It had no relation to radiological safety at all. And, really, what we were trying to do, in large measure, was -- and that is the fourth category, item D under the NRC-OSHA MOU, that is what we were trying to remove. So when you see our language, particularly in Section 70.60(b), consequences of concern, that is really what we are trying to accomplish, is to make it clear that that is the one area that is not covered by NRC.

MR. SHERR: If there are no more comments, I suggest that we take this opportunity to take our break and we will reconvene in 15 minutes, 10:20 according to my watch.

[Recess.]

MR. SHERR: The next agenda item is Standard Review Plan Issues and, as I had indicated earlier, one of the -- NEI has provided us detailed comments on the views on that, and Felix will covering the issue.

MR. KILLAR: Thank you. Before I start to talk about the Standard Review Plan, I do want to take just a few minutes to provide a little bit of a response for the pregnant pause that went on a little earlier when Carl asked the question -- Do the members sitting at the

table support the letter that NEI sent in?

NEI, as any association, works on a consensus process. We put a group together, develop a response to an issue, a position from the industry. We that position together, send it back out to the members to get their concurrence and support of that position. And then, with that concurrent support, we send it in the to the NRC.

Now, there is, typically, something that someone doesn't quite agree with, although they agree with the principle, but they may not necessarily agree with one minor aspect of it, but they are willing to go along with it for the good of it all, so to speak. I think part of the reason why they didn't step up and say, yes, we support that letter is because they are looking for NEI to do that, and I was sitting here looking for them to say, yes, I support the letter that NEI sent it. So, it was not a reflection of, no, they don't support our letters and we go out and send these letters in arbitrarily, it was just a matter of who is going to take the lead in responding. And so don't -- it is not indicative that they don't support the letters that NEI sends in.

Okay, with that, I would like to go ahead and move into the Standard Review Plan Issues. And what this came out of was the September meeting, the question came up about the Standard Review Plan. We indicated that there was a lot of programmatic requirements in there that we felt may be going beyond what was in the rule and, also, we questioned some of the basis for those requirements. We requested -- put together some of the issues and we kind of identified sort of what was our top 10 of these.

And of the basic or fundamental problems we had with the Standard Review Plan as currently drafted is that the Standard Review Plan doesn't take into consideration, when you look at the various programs, how those programs relate to the ISA. And this has always

been a contention with the industry, back, oh, probably four, five years ago, when we started to just do a review of the Standard Review Plan for Part 70, before we even thought about the Integrated Safety Assessment.

We had a series of meetings with the staff where we brought up questions on typical parts of the Standard Review Plan, quality assurance, fire protection and what have you, and we pointed out to the staff at the time that you need to pool all these together. You need to have that integration. Just having requirements for a quality assurance program, or requirements for a fire protection program or a chemical safety program, without having the relationship to other programs and the operations of the facility is not very meaningful. And what we are seeing in this Standard Review Plan is we are seeing that that still has not been conveyed in the Standard Review Plan. Maybe it is in the minds of the NRC staff, but from our review, it isn't.

And, so, what I am saying here in the first bullet here is the need for the programs must be identified. Why do you have to have a chemical safety program? Why do you have to have a fire safety program? Things on that line.

Then, secondly, once you identify, through ISA process, and you have to have a fire, or a chemical, or a training program, or something along that line, what is the depth of that program? You know, do you need a program that goes a whole nine yards, or do you just need a basic program just to cover the basics, because that is the only thing that you are worried about?

Once again, we don't see that the Standard Review Plan has taken that into consideration. And, so, what we are saying down here is that the Standard Review Plan prejudges a need for the programs because it does not give the link back to the ISA and the requirements identified in the ISA for the program.

Secondly, the Standard Review Plan prejudges the depths of

the requirements for the program. The acceptance criteria, in a lot of instances, are acceptance criteria which is up here, where maybe, from the ISA, you only need acceptance criteria that is down at this level here. And so what we need in the -- from the overview of the Standard Review Plan, and looking at these various programmatic requirements, is that they be integrated with the Integrated Safety Assessment, and the needs or the depths of that program be identified through the ISA.

And, basically, what the balance of this is, is just the examples of what we are saying.

The SRP 11-3 quality assurance criteria. The draft includes the criteria for the licensee to have program requirements similar to ISA -- NQA-1. NQA-1 certainly is applicable if you have something that is such a safety consideration that you have to have detailed quality assurance program requirements on it, but for the vast number of our requirements, the number of our operations, the full NQA-1 requirements are not going to be applicable.

By having this established in the Standard Review Plan, you have now started with the bar up here that the licensee has to meet, because the reviewer is going to be looking for something similar to an NQA-1 type program, and an NQA-1 program will not be needed in any of these areas, and the ISA has identified that. But without that link to the ISA, the reviewer will be now looking for something along these lines.

In training qualifications, we have sort of two issues here. First, the issue that they are looking for a systems approach to training. Once again, a systems approach to training may be required if you have a lot of training requirements for your operators, to assure the operations, and you want to -- you need to do a systems approach to training. But if you make your systems and design your systems such that you have minimal operator intervention, then detailed training

would not necessarily be needed for the operators. But by establishing the bar at the level of having -- or mentioned a systems approach to training, now, the licensee has an obligation to come up with some type of training program, or explain why he doesn't need that level of depth of a training program.

There is another issue with this that I didn't put on the slide, and this is at the -- they also talk about the qualifications and training of the operators for design and construction of the facility. Once again, the design and construction of the facility and training of the people for doing that would not be something that would normally be under the purview of the NRC, and we question why that would be in the Standard Review Plan. That goes beyond what the basic requirements of the regulation are.

And fire safety, once again, this is an indication, where you talk about the fire protection program, fire hazards analysis and developing specific pre-fire plans. Certainly, you are going to do -- as far as your Integrated Safety Assessment, determine what the fire requirements are and hazards analysis for fire are. But do you need to go into the detail that is established by these various programs? And, so, once again, the bar has already been set up high here for what is needed in a fire safety program and then it will be up to the licensees to justify why something less than that is needed. And we feel that the obligation that the Standard Review Plan, by having things like that in there, go beyond the rule and they actually make it difficult for the licensee, and you get into a lot of discussions that need to be done.

On decommissioning we have a different, a little bit different issue here, in that we are questioning what the intent of this part of the Standard Review Plan is. If you look at 70.25, the requirements, current requirements, as part of the license application, you have to provide a decommissioning funding plan that is supported by

a cost analysis.

However, if you look at what is in the Standard Review Plan, they are looking for more things that are analogous to 70.38, which deal with license termination, and we are not terminating a licensee right now, we are just beginning to operate the facility. To try and do a detailed decommissioning plan now, according to 70.38, and the various Reg. Guides that are supported by it, is -- well, it is beyond reason at this point in time.

If the facility is 20 to 30 years from closure, doing a detailed decommissioning plan and going through the cost and analysis to do that type of decommissioning plan doesn't make a whole lot of sense. Certainly, doing a decommissioning funding plan and a cost analysis that supports that funding plan is appropriate and we feel that is reasonable. But, certainly, not the requirements as currently put in the SRP 10 dealing with decommissioning.

Once again, this is back to the earlier points on the human system interface. Certainly, human system interface is important. The importance of it, though, is going to be dictated by the Integrated Safety Assessment. Do you need to have a formal evaluation process for the human system interface if you have minimal human systems interfaces that occur?

Secondly, this goes once again, also, to some of the design and operations of the facility and maintenance of the human system interface. Once again, if the Integrated Safety Assessment dictates that you need such a program, then you would put such a program in. However, to have this identified as the preferred program or the acceptance criteria in the SRP, you have established a bar that the licensee should not have to go over that bar. And so you have put the level -- or unleveled the playing field from the perspective of the licensee.

Emergency management. Once again, this is similar. The biggest concern we have here is that currently the licensee is obligated to make sure that any off-site response teams are knowledgeable of the facility and unique hazards. What has happened in the draft SRP is that you are now going on to specific training requirements for the off-site response team.

You know, we certainly can help them and work them as far as developing training that they feel is appropriate, but to do the specific training for them, you know, we may do something that, because of a unique hazard that may be involved, that they may not encounter, but most response -- off-site response teams have their own training programs and do cover all the issues. The only other thing -- and even radiation today is not unique, because of the transportation issue and stuff. So, to have the licensee do training and training requirements for off-site response teams is not within reason.

On this one here, we are kind of at a confusion factor. Configuration management, and here what we are concerned about is the idea to reconstitute the designs. When you do your ISA, you are constituting the design, so there isn't going to be a design to reconstitute, because you have already put it together when you did the ISA. And, so, we are not exactly sure what the expectations of the reviewer would be for the required reconstitution of the design.

And, once again, it is going to be an issue between the licensee and the NRC reviewer to try and define what that is and what you are trying to do there. The ISA will provide you the complete design for the facility and all the safety applications, so there isn't any design to reconstitute or reconstruct.

Once again, this is another one where the bar is higher than we feel it should be. When you talk about maintenance and the maintenance program, the maintenance program that is required to support

the safety systems will be defined through Integrated Safety Assessment. If you find that testing your ratchet rings on an annual basis and maintaining the level of them, or what-have-you, is appropriate, then an annual maintenance program will be dictated for those through the ISA, similar to a pump or some other system in the facility.

If the reliability of that pump or system is such that it must be available a certain number of hours per year or what-have-you, the maintenance program will be designed to it. However, to go in here and talk about doing functional testing requirements and things on that line, regardless of whether -- the safety significance of the equipment, it causes concern in trying to develop a program that isn't linked and developed through the Integrated Safety Assessment.

Organization and administration. Once again, a similar concern, and this goes mainly, once again, to the design and construction of the facility. Certainly, we will put together the appropriate teams for doing that, and the Integrated Safety Assessment will do the evaluations of what is appropriate for the design and construction of the facility and the safe operations of it. But do we need to get into this kind of detail in the Standard Review Plan, particularly for facilities that are up and operating?

So these are the basic concerns we have, is the height the bar has been started at in the SRP and the lack of the integration of the various -- all these various programs linking that back to the Integrated Safety Assessment.

The last one I wanted to talk about, and I will use this as an opportunity to lead into the next topic, and that is the criticality safety issue. And the issue we have here is that the criticality safety program goes, as defined in the Standard Review Plan, goes beyond and is inconsistent with the American National Standard ANSI-8.1. The concern is that the NRC, through the Standard Review Plan, is propagating new

standards and requirements that are beyond the norm for the industry, as well as for the nation, as the ANSI standards are followed by DOE as well as the licensees.

Before we go on to discuss criticality safety in detail, I thought I would take a few minutes to answer any questions you may have about the various Standard Review Plan points we raised on the discussion. Yes, ma'am.

MS. EYCK: I would just like to make a couple of comments regarding what our philosophy was in developing these SRP and how it relates to the issues that you have mentioned. Basically, our approach was to base it on the ISA and that the ISA would identify the items it relied on for safety, and then the SRP -- and the ISA would identify what measures needed -- you know, what the items relied on for safety, and then the measures that were in place would support the availability and reliability of those items.

Now, recognizing that the ISAs for each facility will vary, and the risks of the items that are relied on for safety, or the risks that they are protecting against also varies, we developed the SRP to address the high risk items, because, recognizing we are going to be grading it, we couldn't come up with graded criteria that would identify or be appropriate for all the strata that may be representative of the various risks that were developed through the ISAs of the facility. And we tried to explain that in the introduction of the ISA -- I mean of the SRP.

And I would just to read a couple of things that reflect your comments that the SRP is not linked to the ISA. On page 2 of the ISA -- I mean of the SRP, I'm sorry, it says, "The applicant's Integrated Safety Assessment is the central focus for the selection of design and operational safety measures," now, these are the things that you have been referring to, "and the management control systems that

assure the availability and reliability of those measures. It is the ISA that provides a comprehensive evaluation and presentation, useful to both the applicant and the NRC, of the distribution of risk among the many activities ongoing at a fuel cycle facility.

"The NRC expects to be able to use the ISA results to focus its resources on the dominant risks of facility design and operation, and the safety controls and assurances necessary to assure that those controls remain available and reliable.

"Accordingly, staff reviewers will conduct a coordinated review of the ISA and will focus on the ISA results applicable to each of the technical areas treated in the chapters of the SRP. The acceptance criteria in each of the SRP chapters are the criteria that apply to the dominant risks of operation. The applicant has the opportunity to justify lesser criteria for those design and operational features that can be shown to represent lesser risks than the accident or failure sequences that pose the dominant risks."

Our focus here was to say that these measures that you have identified are not to apply across the board. They are only to apply on the items that are relied on for safety and that the licensees are given the opportunity to provide the graded measures that they feel are appropriate based on their ISA.

Now, maybe we didn't articulate that well enough, and I am looking to ask you to tell me why you didn't, when reading this, get the focus that we are linking the SRP to the ISA findings, and that we couldn't provide criteria that would grade every application. And so what we did was we put the criteria that would apply to the high risk items, for any program that could be used for any facility, whether it is a current facility, whether it is LEU, whether it is HU, whether it is a new activity that we would be licensing, but the recognition that these were just criteria that would be, you know, used from a review

point of view.

It also says in the introductory, it says, "The acceptance criteria delineated in this SRP is intended to communicate the underlying objectives, but not to represent the only means of satisfying the objective." So, I am looking to you to say, where could we -- how could we have communicated more clearly what our intent was?

MR. KILLAR: Okay. There's two things. Start off with the very last line, not the one that you had underlined that you read. You say that this criteria is such-and-such and the licensee can use something lesser. What that says to us is that we have to justify why we using something lesser. And what we are saying is that the ISA should demonstrate that we don't need something as high as what you are providing for, and, so, therefore, we can start with the lower level and work up. And, so, you know, licensee already is in sort of a defensive mode as far as defending why he is doing something lesser than what your acceptance criteria is in the SRP.

The second issue we have as far as the way SRP is laid out is that, well, this is in Chapter 2 and you look at Chapter 3 and read the appendix to Chapter 3, you finally get a sense of what you are trying to, but it is buried in the appendix to Chapter 3 as far as the grading and the approach and things on that line. And this is something we feel should be spelled out at the beginning of each chapter of the ISA -- I mean of each chapter of the SRP, because we look at the way you do work and maybe we have a different perspective or a jaded perspective of it.

But we see -- the project manager gets the application and he breaks up the radiation protection section and he gives it to this guy, and he gives the chemical safety section to this guy over here, and he gives the other section other there to the health physics guy, and they go off with just that section of the SRP, and they are reviewing

this against the radiation protection program, against that section of the SRP, and we are not sure that they are going to understand the relationship of that radiation protection program to the criticality section, to the fire safety, to the chemical safety sections, unless it is brought to their attention that they have to look at this as it relates to the other programs and it is an integrated program. Because there are times when they say, well, gee, you could do things a lot better here in this area, and we say, yes, but if we did it better in this area, it is going to cause us a greater risk in this area over here.

And, so, you have to look at, even though you look at the individual programs, you have to look at the integration as a whole. You can't break these separate programs out, and that is our concern, is that when the NRC reviews these applications, that is the mode they are going to go into is looking at the individual programs.

DR. PAPERIELLO: Let me ask you this. Let's pick something out, let's talk about training.

How would you have me configure the SRP to address training?

MR. KILLAR: I would think that what you'd want to say in there is the exceptions criteria would be driven by those training requirements identified by the licensee to assure the safe operations of the high-risk items identified where training is essential. It sounds like a little dance, but basically what we're saying is --

DR. PAPERIELLO: Let's follow the path. Okay. And how would the reviewer know what the high-risk areas were?

MR. KILLAR: From reviewing the integrated safety assessment.

DR. PAPERIELLO: But the point is the integrated safety assessment's not going to be submitted.

MR. KILLAR: The summary integrated safety assessment is to

be delivered on the docket.

DR. PAPERIELLO: So there will be sufficient information in the summary to justify the programs. I mean, I may be getting ahead of myself, but part of this fits together. I mean, part of it is fitting what we're trying to do as we move from what I call a deterministic basis, because that's in fact what you're talking about -- in other words, if I turn around and say you've got to have a training program that does whatever number of things without regard to the ISA, that would be deterministic more or less, which is the way we've traditionally done things, to one that is ISA risk-based.

There's still -- see, there's the issue of the public involvement. The fact of the matter is the decisions we make need to be scrutable to the public. It's one thing if I say the acceptance criteria is based on an ANSI standard, QA, we're just going to follow the ANSI standard. The public can say yes, I understand why you licensed them, because they have a QA program that matches what the ANSI standard says. If you're saying that well, we don't really need all that because when we do the risk analysis, in principle the public ought to be able to say we've looked at the risk analysis and we agree.

I mean, I recognize that many members of the public aren't going to be able to read and understand what we write. I mean, you know, they just don't have the technical background. But in principle everything we do ought to be scrutable to an informed member of the public, and that's part of the problem I can see is that it's -- I mean, my difficulty is fitting them together when in fact, I mean, I think it's -- I mean, if I look at the SRM and things like that in fact is going to be where we leave right now very difficult to make the ISA the basis for a lot of regulatory decisions insofar as we don't have a docketed ISA.

And I'm not saying docket the whole ISA, I'm just saying if

that is the basis for making a regulatory decision, and that decision is to be scrutable by the public, we have to have enough information so an informed member of the public can see the basis for what we have concluded. Either that or we're basically left with a back to a deterministic licensing basis which clearly is scrutable to the public, and then with sort of an overlay of an ISA. I mean, that's kind of the problem I have right now.

MR. KILLAR: Right. And when we get into the discussion later, I don't know if we'll get into it today or tomorrow, dealing with the integrated safety assessment and how this process works together, I think it'll -- hopefully it'll make more -- gel more as far as how we view this. When we look at the license, we will have program commitments in the license that we will have a criticality safe room, we will have a radiation protection program, and these will be the principal attributes that we will follow for that criticality program for that radiation program.

If we determine through the integrated safety assessment that we need to have a fire protection program, we will have a commitment to have a fire protection program, and what the attributes of that fire protection program will be. Similarly for a chemical safety program.

And then through the ISA summary, which we are planning to submit, on the docket but not part of the license, the summary will demonstrate how these programs and these attributes are carried out on the items of safety significance to assure the reliability and availability for providing the protection for the workers and the public. That's our vision of how this process will work.

DR. PAPERIELLO: We're close. The devil is going to be in the details.

MR. KILLAR: Yes. And that's really where the issue is. To

us the issue is how much do we get in the ISA summary that is clear, concise, and gives you what you need to feel comfortable that we're running our facilities safely, at the same time give you enough information to demonstrate to the public that you've done and accomplished your job, but at the same time not overburden you or overburden us with a bunch of detailed analysis which, you know, maybe a couple old techies can understand but beyond that not a whole lot of people can really comprehend.

MR. SHERR: A point of clarification.

MR. KILLAR: Yes, sir.

MR. SHERR: And this may be a minor point. When we had discussion in the 1995 time frame, one of the concerns that the industry, and a very strong concern, was us calling fire safety or radiation protection, calling them programs, because the notion was that there should be one combined safety program, and we have tried religiously to avoid the use of the word "program" in this subset in response to those comments. Have you used the term "program" consistently? Has there been a change in views on that? I mean --

MR. KILLAR: Maybe I'll hide this time. I'm not sure. Maybe I ought to -- Charlie or --

MR. VAUGHAN: Yes, I wanted to talk about the other thing for a minute, too, but I'll just go ahead -- I'll just talk about this one right this second.

We may have been a little misunderstood because we weren't seeming to get across our point on programs. There in my mind is a particular distinction, and that is in the area of fire protection, in the area of chemical safety, in the area of maintenance of the plant, in terms of assurance at the plant, and a lot of those particular things there is nothing special that a business faces in those areas in a nuclear sense.

In other words, every business has to have those kinds of programs in place, and those programs have to operate, and therefore we felt it was unnecessary to have to provide extensive amounts of programmatic information with regard to those because we as an industry follow pretty much the industry practice.

On the other hand, though, we do have to be able to show that we have factored those things into our nuclear operation, and in our proposal to incorporate the use of ISAs to bring all of that together and integrate it and drive the safety in the nuclear facility we felt like we were doing that.

But we also recognize that we are a special industry, and there are a couple of special things like the radiological protection and criticality safety that are particularly unique to the nuclear operation, and therefore in those areas in fact there does need to be a programmatic definition that covers that particular subject. And obviously since this license is a contract between management, then there needs to be a good, solid, you know, communication of the management structure and the management interaction and how that works as well as what the license activities are and so forth. So we may have been guilty of giving a couple of different opinions, but I think this is kind of where we are in the overall thinking.

MS. EYCK: I'd like to go back to the question of the SRP, and still on my mind trying to figure out how we can package it to -- and describe it to be something that would be acceptable to you and that would be understood what our perceptions are.

You've mentioned before that you felt that the SRP was too prescriptive, and some of the requirements were too stringent. I guess my one thought is, are you saying that you feel that that would be, if that is the case for high-risk activities that might involve HEU or something -- I'm trying to think, because we've got an SRP that, as we

all recognize, Part 70 covers a broad spectrum of different licensed activities.

And then you mentioned the fact that you were concerned of justifying the lesser -- use of the lesser criteria. Is one proposed approach that you would recognize that in each chapter at the beginning of the chapter we recognize that the criteria contained then could apply to a wide spectrum of risks, and not ask the licensee to justify their lesser criteria but just to identify their program, and then the licensing reviewer, who is using this guidance, will look, based on the ISA results, and how this particular item relied on for safety, plays in the risk realm, that then they would make the judgement that yes, your proposed program is acceptable using the criteria, and the reviewer would then make the graded determination that your proposed approach is acceptable based on the risk of the item that we're dealing with? Is that something that, you know, that is addressing your concerns?

I'm just trying to figure out how do we solve this problem, because recognizing that this is a NRC guidance document for our reviewers, we're sharing it with you to let you know what our expectations would be in certain areas and the different types of attributes and characteristics of the measures that you would propose, how they play in our review. But recognizing also that we need an SRP that does cover a range of risks for these items relied on for safety, and recognizing that we're going to be trying to tailor SRPs for different types of activities like if we license a MOX facility we're going to have an SRP that's tailored to the MOX activity or analogous activity.

But we felt that the Part 70 SRP in general gave us a good foundation to have as acceptance criteria and to be used as a kind of a basis to make that tailoring. And so I'm interested in what you see is the way that we can proceed and what might be some of the proposed

solutions to, you know, what your concerns are.

MR. VAUGHAN: I'll just address part of that. You read a section out of the introduction a while ago that I think most of the people in industry when they read it felt pretty good about what was being said there, and the problem came when we went to all of the rest of the chapters, and when we read those chapters, they don't add up to us to be what that statement said.

Now the question is, is -- the major problem -- there's I guess a couple of major problems. One is these chapters in a number of cases tend to add prescriptive detail that we think -- or imply prescriptive detail even though they're guidance that we don't think is necessarily appropriate. And the other thing is is every one of the chapters seem to be written with a bar at the highest level, and there is no guidance in there to a reviewer in terms of how to deal with things that may not be at that level.

So I think what has to happen is the chapters need to be fixed. If you want to set the bar at the upper end, which I mean you can do that, but if it done that way, then there needs to be guidance in there to the reviewer about how to adjudge a person's performance relative to that bar depending on their individual facility and the situation that's being reviewed.

MR. KILLAR: Bob?

MR. PIERSON: I just wanted to mention a couple of things about the standard review plan. Once something is identified as safety related by the ISA, then you start looking at the attributes and decide what you need to assure that safety related --

THE REPORTER: Please speak into the mike.

MR. PIERSON: When you do that, then you default back to the standard review plan.

Now, as an example, on training, it was never our intention,

and if it's decided that training is necessary to assure safety of an ISA attribute, that one would have to go through that entire spectrum of attributes listed in the training chapter to maintain that training. That's just given as a guidance to the reviewer that here's a process that you can go through, and this represents the high bar. In other words, we don't want the reviewer to ask for more than that under any circumstance. But there can be a case made to accept less than that. The same thing would be the case for quality assurance or any of the other areas.

So it's interesting, sitting here listening to this, because when we wrote that, we were writing it as a constraint document to give to the staff so that we didn't -- so that, one, there was some predictability and the reviews were done in a systematic process, and they wouldn't go beyond a certain constraint. And it's interesting that you interpret it to mean that we go through all those processes for everything, because that was never the intention. But I guess we probably need to add some words to that effect that -- for the default mechanism.

But as an example -- brought up with the -- Liz was talking about, it's very difficult to a priori predict all the particular attributes that one may or may not need. I think you've got to give the reviewer some discretion and the licensee -- and the potential licensee some discretion, because we can't predict all the potentialities we have, can't say if it's sometimes relied on for safety but not really all that important, we do x, but if it's really relied on for safety, we do y, and if it's really, really relied on for safety, we do the full gamut. That's not going to work that way.

So I think that we can probably put some words in there to guide the staff to say that this represents the entire set and that subset of that may be appropriate in some instances. But I guess just

philosophically speaking we're trying to tell the staff that we don't want you going beyond these requirements we've laid out here for anything that you may provide.

MR. KILLAR: I understand what you're saying, Bob, and I appreciate it. I guess one of the concerns I have is if you look at a reg guide and the way it reads and what have you, some of the opening words are to the effect that this is viewed as an acceptable way of meeting the requirements as identified in the rule, and so basically what that says to us as a licensee, that if we do everything that's here, the NRC will accept it.

But what's happened in practice is that when we say well, we're not going to do everything that's in here because we don't need to do all that, we end up into a long contest going back and forth with the reviewer why we need to do things less. And while I understand what you're saying that's the upper bar to limit the reviewer, what we find is that's sort of the starting point, and then we have to argue down from there.

MR. PIERSON: What we would hope is that the integrated safety analysis process would separate that out. But the idea of the license application comes in, we would look at the integrated safety analysis, and define from the integrated safety analysis how we would do -- attributes that reflected -- to bolster the integrated safety. So it's not quite as implied earlier where you just take a chapter and give it -- you really need to integrate that.

And what we're trying to accomplish here is flexibility, as Carl said, because if you don't allow some latitude in terms of how you can interpret what's needed for safety, you could come up hypothetically with a scenario that you don't want to have a training program. You've made a decision you don't want training programs, if you put some other sort of redundancy in there and don't have training programs and rely on

something else for safety and use that as part of your ISA. Conversely you decide rather than using some other features, you want to have training.

We wanted to allow that flexibility. The standard review plan is an attempt to capture that I guess probably because of historical factors. We're going to be looking at it with some trepidation, but I would suggest that really that represents a box that we want the staff to not go beyond that box, and we can always reduce the variable, intending to work down.

MR. SILVERMAN: I guess I'm a little concerned that there's a sense that the comments that I think -- what the industry's trying to say in the comments that have been submitted could be addressed with some simple clarifying language or packaging of the document. If I understand what we're trying to say, it's much more substantive than that. The concern is much more substantive. It doesn't go to the introductory language of the SRP. The language that you mention, Liz, I think we all think we understand and it makes good sense, that language. I think we think it's relatively clear.

The problem is that even -- is that when you look in the individual chapters of the SRP, even for a high-risk system, defined by a particular ISA, the SRP says that -- or seems to strongly suggest that for such a system a licensee is going to have to adopt such things -- pardon the expression -- as a systems approach to training or use NQA-1 or -- those are my best examples. There are many others that we listed.

Those are entirely new concepts. They raise the bar above the existing practice. Think about NQA-1 for a second or a systems approach to training. These are things that would be the subject of an individual rulemaking, a significant rulemaking, in and of themself if you were applying them for the first time to a facility.

Say you wanted to now establish NQA-1 as a requirement for

source material licensees or medical licensees. That would be a very significant change in the way they do business. The problem that we have here is to me there are a whole host of areas in here that in and of themselves really should be the subject of rulemaking. They go well beyond the existing practices. And a good example -- and they do prejudge the outcome.

A good example is the training area. Let's say a licensee goes out, performs an ISA on a particular system or process, and they discover there is a problem of vulnerability. The risk is too high based upon the existing system, program, procedures that they have in place. They examine this and they discover that one of the problems is there's a training problem, or the vulnerability issue could be corrected by training an individual in a different way or more thoroughly, okay, because that person is relied upon for safety.

That licensee might conclude that to solve that problem all he might possibly have to do is improve -- is retrain individuals, improve the qualification requirements, perhaps individuals, revise the training modules themselves, have more testing and qualification of individuals, those sorts of things, within the bounds of their existing program. And that might be sufficient to solve that problem. But when you -- that's within the bounds of their existing program.

It might not be sufficient. Maybe more would be required. But when you read the ISA -- I'm sorry, when you read the SRP in the training area, it seems to say that that kind of a high-risk system you have to have a systems approach to training. That's a major, major change. And NQA-1 is another example, and we think many of these areas are like that. So it's a substantive issue. It's more than just the packaging of the document.

MR. PIERSON: It may read that way, and if so, it's -- the intention was that if you're in a situation -- a systems approach to

training would be an acceptable means of accomplishing that. But something less than that, if you substantiate or justify why you're doing it, would also be acceptable. We're not saying that that's the only way. We're saying that that is an acceptable way.

MR. VAUGHAN: Bob, I think a lot of your comments we pretty well agree with, but I believe the disconnect comes when we read the words in all of the chapters and we generally feel like you're suggesting the NRC wanted to proceed or was attempting to proceed, but when we add up what's written, we don't get the answer that you say we should. That's kind of a simple way to put that.

I want to pitch out another little personal idea I think on some of this subject that might be considered as we go, and I draw a parallel from the Part 74 regulations. If we look at a number of these evaluations that are called out for the license reviewer in the SRP, there is some objective that has to be satisfied, some determination that needs to be made as the result of that, and I think there may be some opportunity there to look at the sequence of the review and what that objective is and convert that to a much simpler performance objective that has to be met and affirmed or attested to that the licensee will meet that.

For example, we are spending a tremendous amount of time talking about training in prescriptive ways to do training and how it gets driven. The fundamental safety dimension of training is to assure that the operator or the person performing the work does so in accordance with the safety operations and so that the plant is operated safely. So that's kind of the objective, and we spend a lot of time talking about how you get there, and not so much time on the objectives that are important.

So I think some of these complex things we might look at a little bit and see if there are affirmations or objective statements

that need to be incorporated in the license, and it might simplify some of the work to give us, you know, during the licensing process, a little more time to spend on the things that require creative engineering to be able to reach adequate solutions.

QUESTION FROM THE AUDIENCE: I'd like to mention an experience the DOE has had with the criticality safety good practices guide, which is to be issued shortly, and perhaps this will focus some of the problems that are being discussed.

This guide is a much weaker document than the SRP. It's a good-practices guide assembling the good practices of the criticality safety community. It was written with an introductory section which prohibited the use of the guide by auditors or reviewers. It was not intended for that purpose. Very strong words were used.

The guide went out in draft form for review, and immediately it began to be used in draft form by certain auditors in a few cases, graphically illustrating the fact that when you have these very excellent words in front, it does no good.

I solved the problem, I believe, by putting in the DOE order a prohibition against misuse of the guide and specifically quoting from the guide. So that if you do abuse this guide when it comes out, you will be violating the order. Nobody wants to do that, because you get in trouble with the General Counsel.

So in principle I think that will work, but you can't do that with the SRP. And so even if you write good words in the SRP, I despair of any solution to this problem. I don't know what to do about it. I just bring up the DOE experience and how I handled it, and let you draw your own conclusions as to what you might be able to do. But I leave it at that.

MS. EYCK: I'd like to go back to the comment of NRC requiring NQA-1. It was never our intent to require NQA-1. I think

that how we've used it in the acceptance criteria area, we've tried to identify regulatory guidance that may be applicable to the subject that could be used to help focus both the licensee as they provide their application and the reviewer, and the words that I read here, it says -- and also the fact that we wanted to have something that focused on a graded QA, and one of the few things that we know that has focused on graded QA, and related in the nuclear industry, was the NQA-1 effort.

And what the SRP actually says is the applicant should refer to the American National Standard Institute, the American Society of Mechanical Engineers standard, ANSI/ASME, NQA-1, da da da, with the title, which provides requirements and guidance for such facilities.

It doesn't say that NQA-1 is the standard. All it is was that when I tasked the staff to identify associated regulatory guidance so that we could provide it, it was the most what we thought may be an appropriate standard that applied to QA and it took a graded approach, never requiring the fact that an NQA-1 program be implemented.

So maybe you can enlighten me if there's anyplace that specifically requires an NQA-1 program, but that was never our intent when we put the SRP together.

MR. KILLAR: Basically, by referencing it we feel that you've set that as what would be acceptable. And granted it's not saying that this is a required program, but the fact that you reference it indicates to us that that's what your expectations are.

Now if you would reference, say, the quality assurance program required for transportation CAS, that may be acceptable as well, and that certainly would be a lesser program than NQA-1.

MS. EYCK: But don't you think we would be remiss in not referencing NQA-1 as a related type of guidance document that deals with QA and deals with it in a graded approach?

MR. KILLAR: Well, we have a basic problem with NQA-1

because when we see -- look at NQA-1, we think that's something that was designed basically for a reactor which has a high source term and you have a lot higher risk factors and what have you. And so that gives us some real consternation when you refer to standards that were developed for reactors and for higher source terms than what we have at our facilities.

QUESTION FROM THE AUDIENCE: Another comment. Remember they were trying to design this Standard Review Plan to be somewhat generic. The concept about the source terms there is there are some potentialities that we would be regulating facilities with large source terms not represented -- we were trying to make something that would be -- we could capture those sorts of facilities as well, so we could have the reference to extend beyond what we just had, say, limited to the lower hertz fuel facility, so there may be some lesson there. I am not sure, but we may need to go back and make a clear distinction between these facilities and some of the others.

MR. KILLAR: I appreciate that.

DR. PAPERIELLO: The question is what is an alternative? What would happen if we wrote the Standard Review Plan and removed all the acceptance criteria and left it up to the judgment of the individual reviewer? That's an alternative.

MR. KILLAR: I think that is also a loaded question.

DR. PAPERIELLO: I know, because -- well, I have logical problems. I mean either -- it comes down to three things.

Either because we are not going to have regulations to spell out in detail what a person has to do for everything -- I mean that's the fact of the way we work -- because we don't have as many, it's not like an automobile where there's enough automobiles on the road so that somebody can write specs on how bright the headlights are going to be and how far apart and all that.

It seems to me I got three options here.

I either, one, I turn around and provide the reviewers with no acceptance criteria and leave it to their professional judgment, or two, I turn around and provide criteria, but I don't provide it to the public or you -- in other words, it becomes internal memos, which in fact is the situation I found when I inherited this job a number of years ago, or three, I do what we are doing here, and we turn around and we come up with an acceptance criteria that you tell me I can share with the people and we can turn around and work out something that everybody agrees on which is right.

It seems to me somewhere along the line I have got to give some criteria.

I am also bound by law which says when I use criteria to the extent -- I have to justify not using consensus standards, for example, where they are available. Right now the nuclear industry appears to have developed a consensus standard that applies to QA, and we are already saying that you consider the ISA, and you consider applying this particular criteria to the areas which the ISA shows, which is relatively high risk.

Now put aside the definition of relatively high risk, but if we are dealing with a risk which is on the order of whatever and if it happens to be comparable to a reactor risk, I would agree. One thing I will first mention we all agree on -- that if I have a population group within 50 miles of a fuel facility the risk of that facility to the people around there is probably not the same as a reactor. I say "probably not" because clearly if I had a reactor with a core melt probability in the order of 10 to the minus 10, I may recognize that is ridiculous, that risk would be much lower than -- I'll make something up -- some place that uses nuclear material where it could go out, the stuff go out the stack once a month.

I am being a bit -- and so once you have a comparable risk, why wouldn't you use a comparable QA program, and if we write the thing, hey, you don't have to consider this, if you have a low risk -- you see what I am getting at? I mean there's a criteria out there which is an industry consensus standard which I am kind of obliged to use, without defining it -- don't let a lawyer nail me into what I mean by obliged, but clearly I've got an Act of Congress that encourages me to do that, and frankly which I want to do because I don't have the resources to write tons of standards myself.

We are trying to give the reviewers something they can use rather than their own, you know, this is what I think it ought to be, and you are kind of putting me back in the position of, you know, tell the reviewer to consider independently whatever the licensee submits, and I don't tell the reviewer some kind of criteria to bounce it against.

I mean maybe I am wrong. I am just --

MR. VAUGHAN: I think fundamentally we believe that public performance acceptance criteria are necessary because if the criteria for acceptability is not publicly known, then it doesn't do a heck of a lot for safety, so everyone needs to understand what the acceptance criteria is. That seems to be fundamental in this issue.

I think our discussion of this subject centers around the content of that acceptance criteria as opposed to whether we should have one or not have one.

NQA-1, which we have talked about, is accepted and a recognized standard for certain applications, but I don't think any of us in the fuel fabrication industry have ever felt that that standard was written to nor applies to the kinds of situations we have.

Wilbur may want to comment on it, but we had early-on in this thing several people from GE and Westinghouse met over in Columbia

for a couple of days and we initially thought that NQA-1 with some clarification could result in the quality assurance that we were looking for with safety systems.

What we ended up finding out after working with that for a couple of days, that NQA-1 by structure just didn't seem to fit the kinds of systems we were dealing with and every way we cut it we didn't exactly get the result we believed you would need for that system, and so we kind of dropped that effort, but I think that is in the back of our minds about trying to use the NQA-1 pattern possibly to things that it just doesn't fit.

MR. BIDINGER: George Bidinger, private citizen.

I am a little bit disturbed by what I heard the intent of the Standard Review Plan. It was to put an upper level of safety on the Staff.

It seems to me the Standard Review Plans should be providing the minimum level of safety that is acceptable to the Staff and to us private citizens, but to put limits, upper limits, on safety does not seem to make a lot of sense.

I think we have to start from a philosophy, and that is my philosophy is that you have to specify. I expect a regulatory agency to be defining the minimum levels of acceptable safety -- margins of safety.

I might add a bit to what Dr. Paperiello has said. When standards are applicable, they should be used but in the case of the double contingence that no standard on formal probability risk assessment was ever intended, and yet it shows up in the Standard Review Plan.

I think there is a standard out there an it is being mated with something that was never intended, and this is a mishmash, which is not correct in the sense of the guidance provided in the ANSI standards

on criticality safety.

MR. PIERSON: That Standard Review Plan is constructed right now is designed to provide guidance to the Staff for those areas that are important to safety. The Standard Review Plan provides the acceptance criteria -- the minimal acceptance criteria -- but that means if the safety level is lower than that the Staff can back away from it.

What we're trying to do is define acceptance criteria for the Staff to work toward and talking about it in terms of minimum required safety that the Staff is going to have to make that judgment as they are working with that but the Standard Review Plan has to function as a guide to both give the Staff acceptance criteria to work for, to provide that minimum threshold that we would accept.

I think you probably misconstrued what I said.

MS. EYCK: Also, what I would like to add, is that we are talking about the Standard Review Plan criteria also applying to the high risks areas and this is what we would consider the minimum acceptable for high risk and that is not to say that it would apply to all of the graded levels that we would be addressing based on the results of independent ISAs.

MR. PIERSON: I just wanted to offer a couple comments.

First is in the context of having a "when are you done," "when are you safe enough?" there needs to be limits put on the Staff, and I am counting myself one of the Staff. If you don't, there won't be predictability. There will be ratcheting.

Each reviewer has a pet. He wants to make his area the best that it can be. The problem is when you compare that with competing risks, it may be detrimental to overall risk. The best may not be needed. You don't need a Rolls Royce if there's low risk.

We are trained to do the best we can do in each of our areas. The Commission is trying to control that make everything Rolls

Royce in a way that here is an acceptable level of risk. In the reactor arena you have a safety goal. In the SRP there is a like safety goal that says you have arrived -- you don't need to do any more.

You should not have risk control programs for events that are in 10 to the minus 10 space. It is a waste of money and it is detracting from your business activities and it is detracting from real risk.

You need to put a harness on the Staff and the NRC, otherwise there will be ratcheting.

When there are events we run to the football, even though they may be low risk. This setting a level of acceptable risk and setting an envelope up will control that. If we can control it, we will have predictability and we will have stability.

I would like to also make a comment on the documents for example we were talking about -- NQA-1. I had quite a bit to do with t hat in the reactor arena and a little bit to do with it in the beginning of Part 70 when we met with the NEI folks.

NEI was working on a proposal for a QA standard for fuel facilities and as I recall it, the answer that came out was when we looked at NQA-1 and looked at the grading approach in NQA-1 we couldn't come up with something better for the fuel facilities.

What needs to be recognized is NQA-1 is like an outline. The folks that fill in the detail are the applicants. You fill in the amount of detail under the outline that is commensurate with the risk that the ISA identifies.

If that becomes too prescriptive and too encumbering, the applicant needs to back it off, not fault to the standard and say I did everything, every word, every sentence and standard, and it is an industry standard. We are trying to adopt more and more of industry standards rather than our own creations of either a Reg Guide or a rule

itself.

We are trying to pick up on those standards and practices, recognize the ISA should be the guide -- here is what's risky, here's what we are relying on -- and there is a scale from killing people to seriously injuring them to, gee, I burped a little bit of something out of the process.

You write the detail into the outline commensurate with the risk that is involved. When you are inspected, you should be inspected commensurate with the risk. When you are enforced against, you should be enforced against commensurate with risk.

We are really trying hard to do that. I am not claiming success. There are people out there that are compliance counters. What we need to do is push this risk approach and recognize this is an outline -- you folks fill in the detail and the detail should be commensurate with what you have identified in the risk analysis and what controls you are putting in place.

The industry standards are, quote, "industry standards" and filling in the detail should be unique to each facility, to each activity, to each applicant commensurate with the risk.

MR. COX: Tom Cox. Can you hear me? Tom Cox. I am in the Licensing Branch, and I have quite a bit to do with the SRP promulgation, and lest we think we are not getting too far or achieving some resolution, I would like to profess a couple of things and declare at least a partial victory -- and make a couple of comments.

I am referring to the specific comments in the November 25th letter to Carl Paperiello, and at my level we have had only a couple of days to work on this and I have significantly focused on just two areas I would like to talk about now.

One is 2.6, organization and administration. The NEI made three points there.

The first one was about licenses under Part 70 are not for construction and operation but rather for possession and use. I would like to merely point out there -- go to 70.23(A)(3) and (4) and I believe you can only conclude from that that the NRC Staff must make assessments of construction, design, and the procedures in order to make a reasonable assurance of safety finding, which we are required to make in order to issue a license.

I think we must look at the construction and operation, both from the design and procedures and evaluate what we see the applicant saying there. That is point one.

Point two made here was about an unnecessary new requirement, referring to the decommissioning of licensed facilities as seen in the draft SRP, Section 2.4.3 where we apparently said Staff review is needed for the experience and availability of personnel at the facilities now for decommissioning activities that would occur much later.

I think we can probably agree on that point. I don't think it is a real major point and some language adjustments will take of that.

The third point was about SRP calling for NRC review and approval of internal licensee mechanisms for reporting safety concerns.

I think there it also refers to some language that we can simply adjust and that will meet, I think, what your basic problems are, and deal with that. I am just suggesting we will probably modify the second sentence there dealing with some under existing facilities and would take care of that one.

I think you would have little problem in dealing with your comments on Section 2.6.

I would like to move on to a little more meaty one, I think, in terms of configuration management. Your written comments to Carl

Paperiello of a few days ago stated essentially that Part 70 licenses don't license the design -- again we just talked about that -- and so there should be no requirement to perform design reconstitution. Design reconstitution was the focus of this comment on configuration management.

There should be no requirement to perform a reconstitution. But the comment also went on to say another paragraph later that operators of facilities should commit to a configuration management program in their license. I think the problem here may have been design reconstitution.

I was interested in -- Felix, you said earlier today in your comments probably an hour or so ago, that you felt the ISA, production of the ISA necessarily resulted in a design reconstitution or at least in establishing and documenting of the design basis.

Perhaps design reconstitution is just a pejorative term. We should call it design basis document validation, something like that, but you moved from the point in the written material here which tells you we shouldn't have it, that it shouldn't be needed to saying that the ISA in fact would provide it. I think we agree on that point.

In fact, if you will look at Section, the SRP section on configuration management, if you look in what we call there "acceptance criteria," Section 11.1.4.2, we have only six criteria in that whole chapter of some eight pages. The second sentence of the sixth criteria, which is titled, "Design Reconstitution" -- item number 6 under Acceptance Criteria, if you look at the second sentence, it says something like because the information may duplicate the plant design basis described elsewhere to support the ISA, this information may be included by reference to other parts of the application.

I think that is a very clear and explicit reference that we recognize what you said a little while ago: this information should be

necessary to construct an ISA. If it's there, simply point to it.

I think we should give more consideration to the other comments you have made here. I think we can work much of this out, and I have to agree with most of what also has been said here about the fact that we need some direction with reviewers and we need to share that, yourselves and the public.

I don't think we are going to get this job done by only having a meeting like this where we sort of talk at a relatively general level about the topic. I would suggest, and I have to point out that this is only my suggestion, I think we need a smaller focus group to handle each of these chapters -- prioritizing them -- some may be more important than others -- but it's only until you get a group of about 10 people at most who are experts in these fields talking about this I think you are going to work out the language.

I think what we are talking about here is language. We are word engineers. We are basically engineers but we do it through document. We must work out the language so that it is acceptable to all concerned so it can be used in years to come.

MR. KILLAR: My comment -- the main concern we had on that one area was use of the term "reconstitution" -- there should be no need to reconstitute the design because the design is there. The problem we have is the fluid design as through your configuration management, configuration control, as you change the facility you update the design to reflect those changes and our concern with using the word "reconstitute the design" may indicate to us that we may have to go back and say this is what we did in 1970 and it doesn't make any sense because our facility doesn't look anything like it did in 1970 because of the changes, so with the "reconstitute the design" that's the kind of concept we were thinking of and that is why the term gave us some concern.

MR. COX: And I do hope we all agree that some kind of a documented, validated design basis is necessary to know for the plant today in order to make changes from some basis that you know about or else your maintaining safety and making a change will simply be a matter of luck if you don't have the design basis.

MR. KILLAR: We have the design basis today. We operate according to the design basis, but they are ongoing, live design basis.

MR. COX: And you will find, I think, the production of the ISA -- even as called for in our ISA chapter -- Chapter 3 -- says you must start with a documented design basis.

MR. VAUGHAN: The only thing I would say, I think we are in part having trouble with words, and when we see "reconstitute the basis" that implies to us going somewhere back in history to develop this thing when in fact we have the current safety basis of the plant documented and the process documented, and what we are proposing is the ISA to go through and apply the ISA process to our current operations and take the result of that and enter that into the configuration management program so it will then maintain itself as a living basis of safety as it lives and breathes and operates and goes on about its way and there's changes and modification, but some words are meaning different things to different people.

MR. KILLAR: That's basically all we have on the Standard Review Plan.

Is there anything else before we move on?

I think the questions that you have brought up we have pretty well answered the questions throughout the discussion.

The one thing I would like to do is take the opportunity now to talk a little bit about criticality safety, and the Standard Review Plan for criticality safety, which would probably take us up to lunch.

MS. ASTWOOD: May I ask one question?

MR. KILLAR: Yes, ma'am.

MS. ASTWOOD: This is kind of a question to the NRC as well as you guys.

I hear a lot of possible solutions being repackaging or changing the words or making it clearer, and then I hear some solutions we know that really need to take a whole new look at the way we have applied these acceptance criteria.

Would it be helpful for NEI to try to propose an outline of any chapter of the SRP in a format that would be acceptable, that would be a little clearer for us to see in which direction you are going, if it really is a whole rethink of the way it's proposed?

MR. KILLAR: That is a possibility. I have to look at my members. They all have their heads down.

[Laughter.]

MS. ASTWOOD: I think we could handle the word changes. I think that we can discuss. We can use the web. We can use phone calls to do those kind of things, but if you are really talking about a complete rethink I think we would like to put that in an outline --

MR. KILLAR: We may be able to take on, say, like the Chemical Section because we did do quite a bit of changes and suggested changes on that SRP when we sent in our letter on the chemical safety, so that may be something that we may be able to look and do, capture that.

Barry?

MR. MENDELSOHN: Can I ask -- and again this is something I have not discussed with anybody, so it is my own, but I will throw it out on the table.

It sounds like one of the concerns that we have here is that we don't have any examples of when the particular acceptance criteria would be applicable to -- what things would be applicable to, and I was

wondering if we were able to in the time that we have available to us between now and when we have to go back to the Commission, if we were able to add examples in the SRP of those kind of operations, high risk operations to which the highest levels would apply and maybe include some other examples -- say for this kind of an operation, a lesser criteria would apply whether that would be helpful.

MR. KILLAR: Let me look into it.

I think the problem you are going to run into is that there are going to be specific examples and then you run into the debate as to where that falls on the hierarchy of risk and stuff and you end up spending more time debating that than rather coming out with an example that is workable, so we can sort of look at that but I am not sure if we will be able to successfully accomplish that in the time that we have available.

MR. EDGAR: I think one of the things we need to recognize too is that historically the use to which these types of guidance documents have been put, and as was pointed out by this gentleman here, that a draft document comes out and somebody begins to use it as a requirement also, and then we get the guidance documents which in principle are good things, but the begin to be used as requirements and so if I could borrow from Dr. Paperiello's three alternatives, it seems to me that the preferred alternative would be, yeah, there are criteria that are presented to the reviewers but in addition to that there has to be professional judgment used as to when those criteria are explicitly applied and when they can be applied at some lower level.

MR. KILLAR: Since I see no one else moving towards the mike for our Standard Review Plan, one of the things that I would like to do, since the last issue on the Standard Review Plan we had was the criticality safety and the question about the use and interpretation of the American national standard, Mr. Bidinger is here representing the

Ameircan Nuclear Society and I would like to give him a few minutes to talk about the use of the standard and how it has been reflected in the SRP.

MR. BIDINGER: I'm George Bidinger. No, I am not here as a private citizen, I am here representing the Nuclear Criticality Safety Division of the American Nuclear Society. By way of introduction, we are a profession division. We have about 575 members, and they come from all walks of like, research, commercial, government operations, regulatory development, oversight, educators and consultants.

The Criticality Safety Division sponsors Subcommittee 8 on fissionable materials outside reactors, which is an ANS Standards Committee. And most recently, we are pleased that the NRC has endorsed all 15 of the ANS-8 standards in Reg. Guide 351.

We were made aware of this draft of the Standard Review Plan during the ANS winter meeting last month here in Washington. Senior members of the division reviewed the draft and the Standard Review Plan for consistency with the ANS-8 recommended safety practices. Not surprisingly, we generally support the objectives of the proposed rule. We are concerned with the underlying issues with the rule and the Standard Review Plan, and I will go into those.

Our first concern deals with nuclear criticality being defined as a high consequence event. We start off dealing with risk and suddenly we are talking about high consequence. It almost appears that the rule treats the two words synonymously. Most criticality accidents in this country have not exposed people to more than a hundred rem, which is another category of high consequence. We have had two deaths in criticality processing plants, one at a licensee's plant, one at a contractor -- a DOE contractor site.

Experience, which is very limited, because we have had few accidents, shows that the lethal consequences occur only when the

nuclear worker is within a few meters of the actual excursion and they are really no off-site consequences to the general public from such an accident.

We do agree that continued attention is necessary for criticality safety. However, criticality safety should be treated in no intrinsic way different than normal industrial safety practices. This is a part of our ANS-8-1 standard.

I will take questions as I go along here, if you like, or at the end.

Our second concern has to do with the methodology in the Standard Review Plan, Subsection 5.4.5.2, I think that is in Chapter 5, on criticality safety. Subpart (b) is overly prescriptive for establishing safety limits for controlled parameters and their controls. As a matter of fact, while the NCSD is in agreement that it is overly prescriptive, they are not in agreement on what that subpart actually says. We could not reach consensus, so it is very confusing, but those who could follow it part way through used all kinds of adjectives in describing it, but they said it was overly prescriptive and not within current practice.

As an example, we used a simple mass limit, 350 grams, using Subpart (a). Using the Subpart (b) methodology, we came up with all kinds of numbers from 200 grams to 400 grams, and it was just an unrealistic exercise, that it is extremely complicated.

The primary concern is that this methodology is just plain inconsistent with concepts of assuring safety and risk control, regardless of the basis for the subcritical limit. In Subpart (a), if you use critical mass data, you are just required to have controls. If you use Subpart (b) and calculate the critical mass, then you have got to go through an extended, rigorous method, which we are not sure exactly what you mean, to come up with the controls, and we just don't

see any basis for differentiating in the controls for protecting a limit regardless of the way that the limit is established.

So that is our next bullet there, the selection of the controls should be independent of the method of establishing the parameters, whether those limits come from experimental data or validated calculational methods. So Subpart (b) is just simply inappropriate on the controls. And I say that even though we are not quite sure how one -- or what is expected for us -- or expected of the industry to use those -- that guidelines, or how your people would interpret them.

Our next concern has to do with the Standard Review Plan, the requirement to use PRA to affirm double contingency. PRA is profitable in some applications, but it is a substantial overkill on most applications. It really is not used -- it is rarely used in the industry. It frequently goes far beyond the intent of ANSI-8.1, which is the document that has the double contingency statement in it.

As we read the Standard Review Plan, more effort would be expended in calculating the probabilities than in demonstrating that the process is, in fact, subcritical, which is the primary thrust of ANSI-8.1. More important, databases for equipment failures in fuel processing plants do not exist -- they do not exist. So you are putting a requirement on the industry that they cannot meet. There is one database at Savannah River plant, but that is for a reprocessing plant, a different chemical environment than you would have in a fuel fabrication plant.

The Statement of Considerations notes the industry's objection to PRA but that is ignored then in the Standard Review Plan.

Our last concern is with the complex regulatory process for the ISA. Our division does support the ISA in principle, however, the ISA process and report requirements are rather complex and somewhat

unclear. We are afraid that a complex ISA process with distract from safety engineers, not just criticality engineers, but safety engineers from observing operations and discussing operations with the operators.

Just as an aside, at the same meeting, we had a session on the Defense Board's impact on criticality safety at DOE plants, and Dr. Kouts, who heads up the Defense Nuclear Safety Board, made the point -- the same point, that he is concerned that the DOE requirements are becoming so complex that engineers are being taken off the floor and away from talking to operators, and this is not -- this is disadvantageous to safety. So we have that concern with the -- because of what appears to be reporting requirements that are quite burdensome.

And, finally, the DOE contractors, by contrast, have a safety basis defined in their SAR. The detailed evaluations are not submitted to DOE. And we would suggest that the NRC look at this model, this DOE model, for their treatment of the ISA materials, because we are concerned that it would detract from safety engineers being on the process floors where they can do their work.

That's a quick overview of the NCSD program, our concerns with the current rule, draft rule and draft Standard Review Program.

MR. SCHWINK: George, let me just ask some questions for understanding. One of the things that the Commission is pushing is the risk-informed and performance-based regulation. Personally, I think it is great. One of the things that strikes me about nuclear criticality as an issue is it is a risk item. Sequoia didn't die -- the guy at Sequoia didn't die from a criticality, he died from essentially a chemical exposure.

MR. BIDINGER: That's right, he could not have died from criticality.

MR. SCHWINK: So the issue of risk, what we are trying to focus on are things that really hurt people, whether it be chemical,

whether it be criticality, whether it be a dose of some kind, but really focus on risk. Along the lines of what you were saying about detracting people from real risk, as well as detracting them from making money in business, and I personally like the nuclear industry, so, you know, as long as it is safe, please have it from a business point of view.

The point that is a little confusing to me is, if you read the ANSI standard on criticality, it is very deterministic, double contingency. I am not so sure double contingency is necessary in all risk cases. Recently, I have been at DOE sites and, to my astonishment, and also a little bit of a calibration, saw actual, physical barriers, as well as analysis, that if the criticality happened, so what, the worst you could get was two rem, which is within occupational exposure limits. And the argument was, why do we need criticality alarms? Why do we need to have all these controls? They had a convincing case, to be quite honest.

I think in our fuel facility processes, looking at the different enrichments, looking at the likelihood, the PRA approach, although I don't think you should ever make decisions based on bottom line numbers, but looking at the risk, I think there are arguments to be made. In the reactor arena, we made arguments about criticality alarms.

The ANSI standard tends to ignore than and just simply call for a very deterministic approach that has a lot of prescriptive detail. What we are trying to move toward is the opportunity to make the risk case, and perhaps we did go too far in the SRP and just simply not leave it open to the same risk standard in terms of this is acceptable risk, meaning whether it is criticality or it is anything else, it is acceptable. And then look for the robustness of those controls, and if double contingency, and diversity, and separation are chosen by the applicant, good enough. If there is a case to be made that you don't need all of that burden, that may be good enough as well.

I am trying to understand what is it that would be the recommendation of the group in the context of not pursuing the risk approach and following more the deterministic approach, which has a lot of baggage on it, or some combination of the two, or retaining the traditional approach as long as you have double contingency, and you have got a Ph.D. in nuclear engineering, and know the membership network for criticality membership, or ANS membership, that is good enough. I don't know what approach is that they are suggesting.

MR. BIDINGER: Well, I have to strongly disagree with your assertion that the standards are deterministic. If you will go back and read 8.1 -- and let me explain just a bit about ANSI standards. They are three verbs in there, shall a requirement, should recommendations, and may, which is permission.

In 8.1, there is a requirement that the process shall be shown to be subcritical, and that is a paraphrase, I can't quote the words exactly. The double contingency is that there should be sufficient factors. It is a recommendation. It is not -- it was not important enough to make it a requirement of the standard. So overabundance of attention on the double contingency and its formalism can be a detriment to the actual requirement of the standard that the process be shown to be subcritical. And I afraid that the Standard Review Plan does make that mistake.

MR. SCHWINK: What I would offer, though, is our OGC has put out a position that this is guidance to the reviewer and it is one acceptable way to satisfy, just like the shoulds, and it is a good practice to do that would be in the ANSI standard itself. The rule states what shall be done. The SRP and any Reg. Guide is what is guidance.

MR. BIDINGER: I hear both sides of the table on that issue, and my own experience is that younger people who do need the guidance

will tend to take the guidance as gospel, and that is -- well, that is human nature. I mean it is something that has to be dealt with, and that's where I come from, is that they should be provided guidance with a minimum degree of safety, not the maximum permitted. That's a concept I just can't accept.

But I think we have -- there is another thing that comes into your comments and is in the standard and the rule, and it has to do with risk and high consequence, and it looks like they have been used interchangeably. And high consequence -- well, a criticality excursion is not a high consequence to anybody off-site, period. Blank statement. In most cases it is not even a high consequence event to workers on-site.

But when you get around to talking about the risk of criticality safety, with a proper evaluation, and even using the double contingency as some additional risk management, then the risk is very low. And I don't think that the proposed documents make the differentiation between risk and consequence. And when it is -- using your definition of high consequence, it is still a very low risk. And then to have to put in all of the additional requirements over and above normal management practices for routine industrial safety is questionable.

MR. SCHWINK: What I would offer is that there are certain things that are inherently safe, God protects us all kind of thing. And then there are other consequences we have some controls of some kind that make it acceptable risk. There are natural phenomena that can destroy anything you want to build. The thing that makes it acceptable to live in that arena is the likelihood of that happening. And, again, I don't want to make it sound like what the agency is pushing toward is the traditional reactor PRA, because that is not the case, what they are pushing for is let's agree on a risk and not so much focus on a specific

consequence or a specific likelihood, and what that buys us is the opportunity to take advantage of things that may be terrible consequence.

The fuel cycle process involves people up close and personal to the material. So the issue of being a few meters away, real people are within meters of the process itself, which can have a criticality implication. The likelihood of that, on the other hand, makes that consequence acceptable, because it is not very likely, and we have defined likelihoods along with what is acceptable risk, and, therefore, it makes it acceptable to deal with.

What I would offer is, rather than a rigid structure of prescription that is in any standard, allow the graded approach that says once you demonstrate acceptable risk, and the SRP has said here is what is acceptable, when you reach this, you are done, you don't need to do more, that will control the staff ratcheting. And then, second, when you identify what the controls are that make that risk acceptable in terms of the frequency and the consequence -- and/or the consequence, then you are done and all you have to worry about making sure of is that those controls truly are available and reliable to perform that function when called on, and will perform it as long as you need it.

The contention that I think is driving that is there is a strong belief by the Commission, and even filtering down to the detailed staff reviewer level, that maybe it doesn't need to be a Rolls-Royce, it can be something less. Maybe one contingency is enough. And in the case of the recent facilities, I visited at Savannah River and at Oak Ridge, they have got a real good case for why worry about criticality alarms. You just literally can't get more than a two rem dose because of these bunkered cells they use. The bottom line being, get away from the reaction of running to the football with criticality and deal with it in risk base.

And I think the Commission is struggling desperately to try to push in that direction to take burden off of industry and, yet, still have the acceptable risk.

MR. SHERR: George, if I can interject, I think -- the first agenda item after lunch is criticality. I think we are into broad issues that we are dealing with after lunch. My suggestion is we break lunch now and we continue after lunch.

MR. KILLAR: Could I just say that the division is forwarding a letter to Dr. Paperiello. I should have mentioned that initially. I have a copy of it here, I will give to you, Ted. Unlike a check, the letter is in the mail.

MR. SHERR: Could I also get a copy of your viewgraphs?

MR. KILLAR: Sure.

[Whereupon, at 12:12 p.m., the meeting was recessed, to reconvene at 1:20 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: The next agenda item is criticality safety. Before we get into that, our maybe continue it, the attendee list has been typed up. The gentleman who typed this up noted that there are some individuals who have penmanship as bad as mine. I think he said something like that. So I urge you to double-check -- I don't care if we spelled your name right, but make sure we got your e-mail address right, that is where it doesn't work. So, if you could just double-check. If you see any problems with that, give us the changes. Appreciate that.

So, we will start with the criticality agenda item number 4. Felix, are you --

MR. KILLAR: Yes, we are ready. We will move on to the next topic dealing with criticality safety, and we have got Charlie Vaughan with General Electric that is going to present that topic.

MR. VAUGHAN: The presentation is going to generally focus on the rule, but, obviously, there will be some places where we talk about ties into the SRP, and I think that is important as we go forward, because not only do we have to understand the rule, but we have to understand how that ties into the overall system.

And I will mention now that we got a couple of questions on criticality safety yesterday to look at, and, in general, I think they are going to be reasonably well answered in the information that I present. On the other hand, I will try when I get finished, and maybe go back and just touch on those so it is clear.

The first place that we started was -- this is not all-inclusive, but what we tried to do was write down the key parts of what we understood from reading the proposed Part 70. There may be differences of opinion about that between different people that read it,

but this group tried to write down the key things that we understood. And I will not go through all of them, but I do -- under perform an ISA, item (ii) there, the rule does seem to say that you -- or it does say that you assess accident unmitigated consequences. It uses that terminology.

But in other places in the rule, it also says that it prescribes as high consequence of concern certain items, and it never gets you to the risk component of that and the graded part. So, that is kind of a key disconnect, I think, between items in the rule, and I believe the key is that the rule focuses a little bit more on consequence than it does integrating the risk piece into that.

MR. SHERR: It is not clear what you mean. Can you elaborate?

MR. VAUGHAN: The rule addresses consequence. For example, it prescribes criticality safety to be a high consequence of concern. And there's nothing wrong with that. I think most everybody accepts that as correct, but we are trying to move in the direction of a risk-informed regulation, and to get risk, we also have to look at the likelihood, but the rule stops at consequence and it really doesn't fully integrate the risk element and have the risk be the part that drives the program.

MR. LEWIS: Excuse me. I guess I don't understand that so much, because the very next subsection after it says that criticality is a high consequence seems to say that the occurrence of any high consequences should be, or shall be highly unlikely. So I believe that that is the risk, it is the probability and the consequence that are specified.

MR. VAUGHAN: And that is the -- but that automatically prescribes -- you see, you still don't get down to the full implementation. That automatically prescribes that criticality is a

high consequence, which we all agree on, but the likelihood is not necessarily a likelihood that the ultimate -- we agree that we have to make it highly unlikely, but where we don't agree is the gradation of the controls and the activities that are done to support that. And that is where the risk piece has to come into being. Okay. That is where the difference is, I think, between the way we are looking at it.

MR. PERSINKO: So is your concern then with the rule? I mean it sounds to me it is not with the rule so much, but we are back to the SRP.

MR. VAUGHAN: I said there is a tie there, and I think it is a combination of the rule and the way that ties in with the SRP. I think there's two pieces of it. And I think the rule needs to be cleaner on the inclusion of risk, not in terms of just highly unlikely, but needs to be cleaner on that subject, and then the SRP needs to support that.

MR. COX: Could I make a comment here? Tom Cox, again. Can you all hear me? As Rob Lewis just pointed out, and I think, Charlie, from what you said, an accident sequence that ends in a criticality is, by the definition of the rule, a high risk accident sequence. It has high consequences, it must be highly unlikely, so both consequences and likelihood have been treated. We have said it is high risk, and the SRP treats a criticality sequence that way also.

MR. VAUGHAN: I said that it is high consequence.

MR. COX: I'm sorry, what?

MR. VAUGHAN: I said -- my words were, and the rule -- the words in the rule that we were concerned with is that it says it is high consequence, and that is a true statement, but it doesn't address the term of risk at the level of implementation. It just simply prescribes highly unlikely, and that is not enough definition to deal with the actual implementation of criticality.

MR. COX: Well, I think I could respond to that, and I would agree with that, that the rule does not define highly unlikely. That is what the SRP chapter does in the ISA chapter.

MR. VAUGHAN: Okay. And we have said there is a tie between what is in the rule and what is in the chapter.

MR. KILLAR: If I could help out here a little bit, Tom. What our concern is, in reading the rule and reading the Standard Review Plan, it does not appear to us that the risk of that criticality is adequately defined, and that when you talk about criticality being an accident -- or being a high consequence event, we have no disagreement that, that we can't control where an operator could be at the time in the plant, and he could be next to that tank or vat or whatever when it goes critical.

But on the other side of the coin, you have to look at the likelihood and, well, it seems to be spelled out somewhat in the SRP that you coupling those. It is not perfectly clear to us that you are taking the coupling and taking account of the barriers and controls that you have to prevent that criticality, which then puts that down into the acceptable risk range.

MR. COX: We think the SRP describes in some detail just exactly how you would go about taking account of those controls when you lay out -- when the owner, operator, licensee, applicant lays out in that Table A-1, I believe it is, the controls that are involved in a particular sequence leading to a criticality, and you would describe how those controls tie in, what the likelihoods of failure of those controls are. The rule simply says that when you get to the end of that accident sequence, it must be highly unlikely. And that's the way we address it in the SRP.

MR. KILLAR: I understand what you're saying. I think we're looking at it from a different direction than you are. And from that

case maybe we're not quite -- we may be in agreement, but we're -- because we're coming at it from different directions it's not apparent to us.

MR. COX: Oh, it might take more detailed discussion on this point, and I don't know how much you want to do that now.

DR. PAPERIELLO: Could I ask -- could we first listen to the presentation before we start -- I'd like to hear the whole thing first.

MR. VAUGHAN: Okay. This sheet tries to focus on what industry has identified as concerns, which is a continuation of the discussion that we were just having, and in fact the first item there, it just seems that the rule more focuses on just consequence and not risk. Now that's discussable, but our opinion is that.

We do agree, and it seems like there's uniform agreement, that a nuclear-criticality accident is a high consequence, but may not necessarily be a high-risk item. And we believe that the nuclear-criticality aspect should be treated comparably with other safety considerations for the plant site and not treated in necessarily a different fashion.

The proposed rule really in our opinion doesn't recognize the appropriateness or the grading of criticality safety controls based on risk. That would be in 70.60(c) I think is where that goes, and in fact nuclear criticality safety controls do vary in their importance. And it has to do with lots of things. Just the enrichments being handled in the facility, the time it takes to get into a dangerous situation when there's been a control failure, the type of controls that you use, whether they're engineered, whether they're administrative, whether they're passive, active, how they're implemented, how they're assured. So there's a lot of things really that go into dealing with the risk and grading the criticality controls and identifying based on their grade what situation should be in place.

And again, and we coined a new word up there, but I did some research on it, and lavels and levels are about the same meaning. But there are different levels of assurance that are warranted for different types of control schemes. So we think 70.76 -- and I'll talk about that in a little more detail -- will need some work there.

I won't go into this in detail. We picked it up and ANS has picked it up, that the double-contingency principle is kind of improperly applied by the assignment of quantitative failure frequencies to criticality safety, and generally the professional community has dealt with that in a different way.

I'll also say that I understood that we wanted to have a workshop specially on criticality safety, and I suspect with the comments that we've been hearing, that's going to be beneficial, because there does need to be some getting down into basics and see if we can come to agreement on what the professional community is doing, and is that proper, and if it is, then how do we, you know, codify that so it gives it some validity.

The rule also talks about criticality controls being continuously available and reliable, and that's where it stops. And that raises a lot of questions in our mind about okay, when we have to take a control off line to do calibrations and maintenance, in fact we do defeat the controls and we do manipulate them to be able to go through those functional tests. If a process is down and not running, you know, what's the significance of having a control that's not operatable. So we think that needs to be qualified to say when required to perform their safety function. And I think that's in 70.60(d)(3).

And it's also then not clear to us that the licensing process is set up to focus on the high-risk accident sequences. We hear a lot of words when we talk that says that's what the intent is, but when we look at it, we don't see exactly how the guidance would generate

an approach that says the high-consequence or high-risk items are the ones that we're going to focus on, and we're going to look at some of the others, but the key is at the high level.

Just to look at some of the things that we might propose to correct, one is to revise the language so we're both happy that it reflects a risk-based as opposed to a consequence-based regulation. That I think is something that we could work out with a working group on that subject. And we think that we ought to have a risk-informed, performance-based methodology embedded in all this that enables the licensee to evaluate the risk and the likelihood -- well, the consequence and the likelihood to get risk for nuclear criticality accidents as well as all other accidents, and to establish a risk-base which would be graded levels of protection to prevent nuclear-criticality accidents. That's the subject of trying to get in and analyze and determine particularly how important various criticality controls are, and what about them is important to control to make sure that they're available when needed. And then to carry that right on, as I was saying, into the graded level of assurances that we use for their control to ensure their availability and reliability.

In the section that talks about graded level of protection, we think that the quantitative approach to the double-contingency rule ought to be removed, and we ought to go back and just incorporate the ANSI standard approach for dealing with that. And we also think that the language of the rule on reliability and availability needs to be clarified to indicate that it's during periods of time when it should be available, and I think -- that's in 70.60(d)(3).

So that's pretty much the prepared information that we had. The question A under criticality, I think that the first part of that with regard to what are the specific concerns that we have with the rule was pretty much the subject of what we presented.

What are our concerns with the SRP? We've enumerated some of those, and there are clearly ties between the SRP and the rule, but we have not I think exhausted this whole subject of the SRP and how criticality safety is treated in there, and like I said, it was our understanding that we were tentatively proposing to have a workshop with the criticality professionals to do that, and that's probably the forum to resolve some of those issues.

With regard to B, I believe where our position really is is that we want ANSI 8.1 to be used as the standard, and apply it across the industry as it has been in the past, and we believe that it's perfectly acceptable to do that. So we don't see a need to regenerate that.

Okay?

DR. PAPERIELLO: Yes. I've got a couple -- could you put your last slide up?

If I go down, the last -- the third bullet I understand, and I probably don't have too much argument there. I noted to my staff at lunch time we have just published a Part 63 as it's been to which we have removed.

See, I look on this whole issue as barriers. I mean, the fact of the matter is double contingency is the deterministic way of controlling risk in criticality, much like defense in depth was used for reactors years ago. That was sort of -- even though we keep it -- we still deal with PRAs, and which in basically subsystem performance for high-level waste, and having quantitative criteria for each subsystem has now given way to each needs to make a contribution. But we're looking at overall performance of the repository, and not what each individual barrier contributes to this thing. So that's why your third bullet doesn't give me much of a problem.

But we keep seeing the talking around here. I agree, risk

is consequence times probability of the event. I mean, you know, that's the same. You've made a statement, and I think we all agree here, that criticality is a high-consequence event. So that means to get acceptable risk we ought to be -- I mean, the risk ought to be the same.

I mean, the resulting risk to workers or the public ought to be the same, regardless of the kind of accident you have, because an accident with a low consequence, you can tolerate a higher probability than one with a high consequence, you then have a -- you need to worry about a lower probability, so that overall the product -- I just don't understand when you argue -- thought that's what we were doing. We were saying we want the probability for a criticality to be low, which is -- I don't -- I guess I don't understand. We've defined it as high-consequence, you agree that it's high-consequence. We both want a certain probability there to give an acceptable risk.

MR. KIDD: Carl, let me point out just one item. I think we're both on the same track. I think there's perhaps a little bit of a wording problem in the rule that needs to be corrected, and just as an example, if you look at 70.60(c), when we talk about consequences and likelihoods, we tie likelihoods to external events only in that particular rule language, the way it is written currently. And that likelihood should be tied to not only external events, but internal events and process deviations. And I know that was your intent, but all we're saying is that there are a couple of places in the rule language where if we talked specifically to the risk as opposed to the different elements of consequence and likelihood, or that we get the likelihood tied to the right thing, I think we'll have agreement in many places.

DR. DAMON: I think I can -- my name's Dennis Damon. I'm a criticality safety specialist on the NRC staff, and I've been thinking about the same subjects that Charlie's been thinking about. And I agree with every single one of his points on his slide except one, which I

might get to later.

But I've recently had an illuminating thought with respect to the two points he's making up there about how you grade safety control. The illumination is this, and that is that among the assurance measures that we apply to criticality -- to any safety thing, there are some which are not proportioned to the quality of the safety controls or to the risks, they're in proportion to the consequences. And then there are others which are proportioned to the reliability level you need to get with the safety controls.

So you've got to get that in -- and let me give an example so you understand what I mean, is that if -- once you've identified that you've got a high-consequence event, that means you have to have a high-reliability safety control, right? To get the likelihood down and to get this balanced risk that Dr. Paperiello was talking about. So anything that you do to get that likelihood of failure of that safety control down to where it has to be, it has to be of whatever quality level is sufficient to get you there. And so that's the part that's proportional. That's the risk-graded or whatever you want to call it, reliability-graded, likelihood-graded part of this thing. Any measure that you take or any item relied on for safety has to get you to that reliability level.

So things like how often do you do maintenance, the thicknesses that you make things to prevent wearout failure, preoperational testing, all kinds of things that are specific to a specific piece of equipment, they just have to be done to whatever level is enough to get you to that reliability. And the design engineer can play with these things. He can give you a little more of this, a little less of that, and he can come with all different combinations that will get you where you want to go. But nevertheless the whole scheme is risk-rated.

Now, get to the two things that I come up with that are not graded that way. What they are is configuration management and auditing of the whole system. So if you have like a system that has S&M in it, that system can go critical because it has the S&M in it. So that means since the consequence of the event is a criticality and if you accept that's a high consequence, what the configuration management is protecting you against is that somebody changes that system, and that's why it isn't graded with the quality of the safety control, it has to be applied equally to all systems that have S&M in them. And the reason is that you cannot allow the operations staff to change the configuration of any system that has S&M in it. You can't allow them to do that. Because what they can do is no matter what the safety control is on the system, if you allow the staff to change the system, they can defeat the safety control.

So what you need to do is have an adequate degree of configuration management on every system that has a potential for a high-consequence accident. You can't allow any of them to be excluded from configuration management.

And then there are some measures that are analogous to configuration management that go along with that. So I thought -- and basically I agree, you know, with what you're saying, that -- and I think the word, as the last gentleman said, I don't think this is a real problem. I don't think this is a real problem. I think we solve it by clarifying the language and giving better guidance to the staff, and we're done with this issue.

MR. VAUGHAN: Let me try a little bit of a question on you. You talked about some of the things that, you know, we do to control, and you were over in one area. But I think that, you know, we have a number of different control methodologies to use like passive and active engineered controls, administrative, and each one of those has certain

characteristics associated with it. And should that not be factored into looking at what the ultimate risk level is and how those controls would be treated?

MR. DAMON: See, you don't want to get yourself in a circular argument here. The reason the risk will end up being low is because of the safety control, right? And so -- but they're only good if you do them good. And that's what the graded approach means, is you have to --

MR. VAUGHAN: That's true, but if you pick, for example, administrative, which is probably the weakest yet perfectly appropriate in a number of situations, you know, if you pick a very weak control and a very complex system, then the amount of risk reduction you get from that is probably minimal compared to if you go with, you know, strong engineered controls or something like that that are well maintained.

You know, I just -- it seems like those other components play a part in this.

MR. DAMON: If what you're saying is that in doing our reviews and stuff we should focus on administrative controls, I actually agree with you.

MR. VAUGHAN: That's not what I said.

[Laughter.]

We have to focus on all the controls.

MR. DAMON: But I -- I mean, that is the more problematic one. I mean, my own view is that the people that you normally go to to have them design a piece of hardware for you, if you're going to go with a hardware control, hardware engineering has been done a long time, and they generally know how to do them and make them reliable. I rarely see a badly engineered piece of hardware. But I often see a badly engineered piece of procedures.

DR. PAPERIELLO: Could I get to words? And we're looking at

(c). Take a look at the words here. And I say let's go to the 1 and 2. It says the occurrence of any of the high-consequence identifieds in paragraph b(1) of this section is highly unlikely.

If I turn around and change it and say the probability of occurrence of any of the high consequences identified in paragraph b(1) of this section is very low, I think I've just defined risk. In other words, probability or the consequence times the probability of occurring. And then you could go to the probability of occurrence of any of the intermediate consequences identified in paragraph b(2) of this section is low.

Does that take care of defining -- I'm going to go back to the other words. I just want it turned around. Does that get this and make it risk? Because the consequence times the probability is risk. We all agree with that.

MR. VAUGHAN: Right. And the only problem that we've had with the term "probability" is it's highly associated with PRA and the things --

DR. PAPERIELLO: I know. And we've tried to dance around that thing. I mean, you know, you're right. We don't -- I just don't think it's technically feasible to do a PRA on a facility like yours. I mean, I'm just -- it's not technically feasible.

I have another argument, because I've got people here that are trying to push PRA and everything, and the thing is you can't -- one, the way I define it, you have a loosely coupled system, and PRA is wonderful when you have tightly coupled systems. The system is loosely coupled. You can drop a bundle out in the yard and it won't make a damn bit of difference to the pallet presses or a lot of the other things you do, where in a reactor you disconnect the -- your output transformer from the low-power lines and you immediately cause control rods to go in. That's a very tightly coupled system. And I agree with that. So I

understand.

But that was one of the things. If I turn it around and say each licensee shall provide a level of protection as commensurate with instead of the severity the risk of the consequences resulting from credible accidents and the likelihood of external events, does that do it?

See, I'm looking for words.

MR. SILVERMAN: And, Carl, I think you're exactly right, in terms of focusing on that section and the words, because what I'm hearing in several meetings now is no one's saying that they don't want this rule to be risk-based, and we are all trying to focus on risk, and I also agree with Tom Cox that when you look at the table in the SRP that kind of describes in fairly great detail how you would have someone go through this process of identifying items relied on for safety, there clearly is in my view -- I'm not a technical expert -- a risk analysis going on there. It is the language in (c) where we -- and maybe some other areas, but (c) is a big issue where we are having problems, and I do think if this language were modified to use words like "risk" and to use words like "consequence times likelihood" perhaps --

DR. PAPERIELLO: That's what I want to get in here, because I think we all agree.

MR. SILVERMAN: I think that would solve a multitude of sins. That's my own personal opinion.

DR. PAPERIELLO: And then go down to the measures used to instead of saying "assure continuous availability and reliability" "to assure their availability and reliability when needed." Because I think that's what we meant. I don't think anybody expected you to maintain a certain, you know, moderator, but you've got to shut it down and wash it out or something.

I'm being a bit facetious, but, you know, it's -- I guess

what I'd like to do with this section here, rather than us argue philosophically, because I really don't think -- standard review plan may be a different issue. I'm trying to break it down into pieces so I can fix problems instead of trying to solve -- I'm not trying to lower the water in a swamp. I'm just trying to keep it out of the boat at this point.

I guess what I would do is two things. I'm going to go back to my -- I mean, as I said, I wrote a few words here, but, you know, me saying I'm going to actually, you taking a look and writing it down and say whether I like that or not is something different. What I would really propose to do on this one, at least for the rule, I'm not -- putting aside the standard review plan -- I'm just taking the rule -- is I'm going to ask my people to modify the words. I would ask you to do the same thing. And let's see what we can come up with. Because, I mean, we don't have that many words. I mean, this is what we're talking about here. We've probably got less than 100 words. What can we do? And we seem to be saying the same thing, I think. But we need to turn around. What words would look right here?

You know, I'm not going to put you on the spot and say would these words do it, because even though I say that, you've really -- to be fair to you, you need to turn around and look at, you know, see it written down. Because I don't feel I have a, you know, a lot of -- just like chemicals, I don't think we really disagree. It's just whether or not the words -- putting aside the details of the standard review plan.

Is that fair? I mean --

MR. VAUGHAN: Yes.

DR. PAPERIELLO: Yes?

MR. VAUGHAN: Yes, that's great.

DR. PAPERIELLO: Yes. Because your definition of risk is certainly the same as mine. If we're not getting there with the words,

then what words will get us there?

Well, that's what we would do, we'd put them out on a web page. Or you do it any way. We could send you a letter, something like that, with the same thing. Do it both ways.

MS. EYCK: We're proposing that maybe the web page might be the good vehicle to do this, because we want to use the web page as a vehicle that we can propose language and we can get comments in from everybody and let them know the process that we're going through to resolve the differences that we now have.

DR. PAPERIELLO: Anyway, it seems to me we can -- I can at least do this in a couple days. I mean -- my own staff will probably argue with me that I'm wrong.

MR. KILLAR: We agree with you, Carl.

DR. PAPERIELLO: You know, because it's just -- you know, we've been arguing in a lot of -- I don't want to say arguing -- I don't want to say it in a negative sense, but we talk about this stuff, it seems like -- it sounds like we agree, but the words don't get us there.

QUESTION FROM THE AUDIENCE: I just want to offer in the context of the language, one of the things in looking at what the consequences are, you may be able to decide just looking at the consequences that they're a no never mind, don't waste a bunch of time doing an analysis. So the context of doing the risk is once you decide you've got a consequence that's not tolerable in either the context of Part 20 or if it's a nuclear risk or a chemical risk that's affecting nuclear safety, the consequence may not be worth pursuing in terms of it's below some acceptable health threshold, and therefore don't do a big analysis. It's self-evident that it's safe because of the level of the consequence inherent in whatever the hazard is.

So the logic of looking at each is, number 1, it may be such an incredible event, for example, and earthquake, why do an analysis of

the consequence if the earthquake is 10 to the minus 8, why pursue it. The same thinking goes with the consequence. If the consequence is so small, don't do a big analysis to come up with a risk, because you can live with the consequence.

MR. VAUGHAN: Your point's well taken. I think the teams at the sites that are actually implementing this are using that approach. In other words, they're not doing an analysis just for analysis sake, and when the develop enough information to give them confidence that it is indeed a low-risk situation, then, you know, that's about where it stops.

Okay?

DR. PAPERIELLO: Good. Thank you.

MR. GOODWIN: Is George Bidinger still here? Do you want to present?

MR. BIDINGER: Just as a follow-on to this morning, Ted cut us off for lunch, which I agreed with. But there was somebody I noticed standing at the podium over here had a question. Are there any more questions on this morning's presentation from the NCSD?

DR. DAMON: I was the one standing. This is Dennis Damon again. I was the one standing at the podium. I just wanted to mention that something that might -- there may be some people in industry who may not be aware of this, but the Commission, in response to the Administration, sent to Congress a strategic plan in which there is a safety performance goal related to criticality.

It says, this performance goal is that there should be no inadvertent criticalities involving licensed material. And that works its way into the SRP and into this discussion, in that, when you do start thinking about the frequency or likelihood of occurrence of criticalities, what that says to me is whatever you choose has to be low enough so that you do not expect to see one happen in the industry in --

what, 50 years, 100 years? Something like that. That's what it means to me when the Commission says that.

You know, in other words, if someone else's interpretation of double contingency is that it is acceptable to have a criticality somewhere in the country every ten years, I say the Commission's goal says that they don't accept that, that it has to be better than that. And so we are bound by that, at least I feel bound, that I have to make the quality level that corresponds to double contingency such that it will meet that goal.

And the other thing is it definitely was not the intent of the ISA chapter, and especially as related to criticality, that you would do PRA. In fact, if you look at -- what it is, is it was structured to permit you to do it, if you chose to do so. And the numerical values that were used -- rather used in reverse, they were as a guideline to get you to something qualitative and objective that you could assess, and that is the middle column in Table A-3 of the appendix to the ISA chapter, where it has controls listed in terms of whether they are an administrative control, active control, passive control.

And that is the objective here is to get -- is to not have people have to do anything except stand there and use that as a look-up table. It is a cookbook, but it is a cookbook that the person who is using it applies with the judgment, the experience and the expertise of someone who is familiar with the system and the plant. But it is not -- it is definitely not PRA and, personally, we are not interested in numerical numbers, and we are not interested in adding up things across the plant. We are really interested in each system by itself.

MR. BIDINGER: There's a couple of things. I think if we -- speaking for the NCSD again, we think that criticality safety does not need to be put into that emotional area of just an unallowed accident. I think if you look at other parts of the nuclear industry, if you

looked at radiation sources and how they have killed people, it would probably be an industry that would be out of business.

In terms of the guidance that you mentioned on PRA, the guidance is that you have to have a control of 10 to the minus 2 and a control of 10 to the minus 3. Those are arbitrary numbers. 10 to the minus 5 is impossible to defend, I think technically, but even so, why couldn't it be 5 controls of each 10 to the minus 1. It is much too prescriptive, as well as improperly considered in the first place. So there's a lot of things.

On the double contingency, it says one of the two controls. Well, with double contingency, you may have umpteen controls. There's nothing in double contingency that says -- so there are a lot of technical flaws in the application -- in the guidance to the staff in the Standard Review Plan.

DR. DAMON: Well, I would agree that the language in that area can probably be improved. But it is also true that -- I think the point that was trying to be in that section in the chapter, which, again, I say I didn't write, but the double contingency principle says both -- you have to have at least two unlikely events. So what they were -- the point that was trying to be made there was that you could not have one event which was extremely unlikely and one other that was going to happen every week, or it is a 50/50 shot. Both of them, you have to have two unlikely. So that is all that was trying to be achieved there, and I agree that the words may have to be tuned up to get to that.

MR. BIDINGER: If there are no more questions on this morning's, I will switch hats. I now want to speak for Tom McLaughlin. Tom is the Group Leader of Criticality Safety at Los Alamos National Laboratory. Tom felt inclined to comment because in the -- I think it is in the Statement of Considerations, there is some reference that

these rules might apply to DOE facilities in the future, and he is at a DOE facility and felt so inclined.

Tom has been at the laboratory for about 30 years. The first ten years he spent performing critical mass experiments and doing reactor design and research. In the last 20 years he has migrated into the field of criticality safety and is the Group Leader.

In Tom's way of looking at things, he is presenting first an overview in his letter. I have already given the letter to Ted, and a copy of these viewgraphs. But, in essence, he looks first at 10 CFR 70 and he sees that it talks about risk, but it focuses on consequence-based regulation. And then he talks -- he has many questions about the graded approach, because it focuses on the worst case in all cases. But as far as risk is concerned, it is consistent with the ANS-8 standards. We will call them deterministic, but we think they are really risk-based, performance-based. And he does agree with the performance, risk-informed concepts, however, he says the devil is in the details.

With the ISA, he calls it an excellent concept, but he is concerned about the detailed requirements, paper submittals, delays in approvals, very expensive for the industry, if they had to live with all the paper work that is potentially required by the proposed rule.

He looks at the Standard Review Plan and he sees details, details, details. He questions the basis for specific values and draws implications on costs, manpower and worker safety. That's the same issue that Dr. Kouts mentioned in his recommendation to DOE in 97-2 and be brought up at the ASME meeting this last month.

Again, he focuses on, looking now at some of the issues in more detail, criticality accidents as defined as a high consequence event. Where is the graded approach? Many criticalities will not have high consequence. The track record shows that there have been -- most

of the criticality accidents have had little or no exposure.

As far as quantified risk assessment is concerned, the data do not exist to support its use, it simply cannot be done. There are some aspects of PRA that could be done, but in terms of a total database, it does not exist.

Unfortunately, my printer doesn't do justice. These were nice Southwest colors on what he sent me on the computer, but I had to use my old printer, so it doesn't do justice to Tom's work.

As far as the Integrated Safety Assessment is concerned, it is an excellent concept, he agrees with it. It is consistent with the philosophy of ANS-8 and the standards that they have written, and it is consistent with the DOE philosophy in criticality safety. Although, I think in reading more in Tom's, he consider the ISA to be more like the SAR that is provided to DOE and becomes, basically, their authorization basis. You see that in his comments as we move on.

For 70.62, ISA requirements for new processes, submit the results of the ISA. That has severe implications on required actions documentation -- and documentation prepared to current practices. He finds that this would be an unbearable on them. It would slow down their approval process and end up in regulatory costs that are not defensible.

He questions the baseline design criteria. Licensees shall maintain appropriate records of these items throughout the life of the facility. A literal interpretation of this would be that he would have to maintain records for cans, dissolution pots, filter boats, the like, which there is no reason to maintain such information for the life of the facility. The requirement is much broader than reason would dictate.

In Appendix C, he talked about the reportable events, deviation from safe operating conditions. It has the potential, as

identified in the ISA, again, he is concerned that there is no graded approach. A 1 percent over-mass limit would be just as reportable as a 10 over-mass limit, as a 100 percent over-mass limit, as a 200 percent over-mass limit.

DOE has gone through this in a painful manner. Bert mentioned that this morning, but the graded approach on report needs to be worked into the regulation and into the SRP.

He also talks about the Standard Review Plan. The applicant shall conduct and maintain an ISA that identifies specific control parameters. He feels that this should be in a SAR document and that there should not be a detailed ISA treated as a regulatory document.

In summary, the documentation reporting requirements appear to require excessive detail far beyond current NRC or DOE requirements. If this is true, worker safety will likely suffer as scarce criticality safety professionals will have even less time available to interact on the floor with operations personnel.

Some of the SRP requirements that he mentioned, and I may have these two out of -- okay. It says at least one of the two controlled parameters dealing with double contingency. As I have just mentioned, there should be no limit on the number of controls that are used to satisfy the double contingency. And, in fact, it is a rare situation, indeed, when only two controls are used or available. Even when you have engineered controls, there are still administrative controls to make sure you have the engineered controls, and they just compound. But that idea that you only need two controls puts the reviewer into counting controls and he forgets that he is really looking for subcriticality.

The NCS limits, I have already mentioned that. Those limits, 45 percent and 75 percent, are not in a peer reviewed document and they certainly are not in any ANS-8 standard.

Finally, his final comment is that the reviewer will determine that the NCS review of the ISA includes a review of the potential accident sequences that result in inadvertent criticality. Here all accident sequences have to be considered, not just the worst case accidents, and they have to be maintained for each operation, all sequences. It is contrary to DOE guidance and it is prohibitively expensive to do such a thing.

So those are the viewgraphs that Tom supplied. The letter is more detailed. He could not be here to speak for himself. I appreciate your time. I will certainly try to answer any questions, but I can't be in the mind of Tom McLaughlin, but I will try.

MR. COX: I would just to like to -- I can't believe Tom McLaughlin would say that a criticality should not be a considered a high consequence event. I mean I can see where, in his environment, where he is working with high enriched metal or plutonium, that in a DOE establishment, it may be true that they have quite a few criticalities and people don't get killed, because metal criticalities can be quite a low yield event and, in addition, in a DOE op. environment, people may not be near where the SNM is.

But if you go into any of the facilities we regulate, typically, there is somebody standing right next to where the SNM is. So, if there is a criticality there, and it is a low enriched oxide solution, thermal type system, they are going to be dead. That's all there is to it. And that is a high consequence to me.

MR. BIDINGER: I am getting into an area where I am going to tread with trepidation, but I think Tom would make the argument that most of the accidents are indeed not high significance. Most of the accidents are not prompt critical. With criticality alarms, people, if they are few feet away, can evacuate safely and survive. That Tom is -- I had a discussion on this, because Tom was going to put in another

letter from ANS-8 Standards Committee, but he didn't have enough time to do it.

But, as a part of his work, he has been reviewing all accidents in this country and gathering information from the Russians on their accidents, and he describes most of them as not consequence events. Primarily because of the physics of criticality, you don't get the prompt bursts, you don't get the large bursts. And the physics of criticality is very important, both in understanding what criticality and in the shutdown mechanisms for criticality.

Tom, I think, would take you on and could argue it much more eloquently and much more strongly than I can.

MR. ROTHLEDER: George, I would like to mention that there are two definitions, or two views of consequence. There is another view of consequence which we don't like to talk about here, but we are faced with, and that is the political consequences. If there is a criticality accident and nobody is injured or nobody is hurt, but there is such an accident, there will be investigations for years by both Houses of Congress, by the Executive, by the agency, or agencies involved, and it will be nightmare. It will detract from safety, certainly, and be a real problem. That is a consequence that we want to avoid. And so, in many people's minds, that is why a criticality accident is not tolerable in any way.

This requirement of such a low consequence on that basis, makes the risk -- and, again, risk here gets redefined to not tolerable either, and that is one of the driving forces behind the large amount -- the large effort in preventing criticality in any way, shape or form.

One of the things that Tom is referring to, however, is that if you have a criticality occurrence in a shielded facility, there is no -- there is no risk to personnel, and that is perhaps tolerable. We do have, in DOE, facilities, many shielded facilities, many hot cells.

Another point I would like to mention is that, in approach external regulation, we find that DOE and NRC are finding that there are differences that must be resolved in the way the NRC approaches things and the way DOE does, because there are different facilities, different types of facilities involved, and many of the facilities that DOE now has responsibility for were under the old AEC, and maybe under ERDA, but many years have passed and the NRC simply hasn't deal with the facilities, essentially, not dealt with them at all, because so much time has passed. And so this is a difference that must be resolved. I think this is part of the concern.

MR. BIDINGER: Well, I think that gets into the regulatory issues, but in terms of criticality safety, the ANS-8 standards are applicable equally well to the DOE facilities and the NRC licensed facilities. They all were licensed by -- I think they were all licensed by the AEC originally anyway, so.

But criticality safety -- regulatory issues are different, but criticality safety, per se, should not be different in the different facilities around the country.

MR. SHERR: Thank you, George. I guess that is your third hat for today.

MR. BIDINGER: Yes.

MR. SHERR: Okay. One thing George has given is he mentioned he gave me two letters, one from the ANS and one from Los Alamos, and both those letters will be put on the web site.

It is now 2:15. We will take a short break, and if we can reconvene at 2:30.

[Recess.]

MR. SHERR: If we can reconvene, please. The suggestion has been made, before we proceed to the final two items on the agenda, instead of pursing those today, we would save those for tomorrow and

talk a little more about some of the proposals that have been talked about so far, and maybe providing a basis for further discussion tomorrow and maybe we can make progress in identifying some appropriate word changes.

MR. KILLAR: What we thought we would do -- you know, we have had some fairly some good discussion this morning on the various topics that we have presented, but there didn't seem to be any direction towards closure on those issues. And so we thought it would be better if we spent a little bit more time talking about some specific wording and what-have-you, just for the purposes of laying down what is the direction we are going in, and then taking those away with us this evening and, basically, sleeping on them, thinking about them more, and what issues are, and then come back in the morning and see if we can then go to some type of closure on it so we can move forward on those.

To start that discussion, I think probably chemical safety was the one that we started off with this morning and probably the one I hope that we are closest to closure on. And if Bill is down there, if Bill would mind just -- do you have your slides, Bill, just on the issues that we suggested as far as how to address the chemical safety in the rule?

MR. SHARKEY: Yeah.

MR. VAUGHAN: Felix, I think we ought to -- I mean I agree that if we can work on words and things right now that might help get this thing fixed, then that it is smart. But in cases where we can't do that, I think we also ought to consider what are options are for working this through as we go through, because the schedule is very critical both for the NRC and for industry. And so if aren't able to necessarily come to pretty good closure here, we ought to have a plan that would facilitate getting to closure as quickly as possible.

I just said the only thing -- the only thing that was

initially said is that we look at the presentations and see if there are wording changes or things that we can work with or consider, and I just said, if we can't solve it that way during this session, that we ought to include a discussion of what our options are to resolve some of the issues.

MR. GOODWIN: I think specifically we need to understand what the process will be, or what we can make it be in order to reach that closure.

MR. KILLAR: As I understand it from this morning's discussion, the NRC will take this input, go back and look at the rule and put out on their web site the revised rule with various options identifying their preferred option for different approaches to an issue such as a chemical safety, and people will be given the opportunity to provide comments through the web site on that proposal.

I guess our concern, and we discussed a little bit earlier today over lunch, is that that is good, but we are not sure whether that is going to really meet the needs of both the NRC and the industry, that it may be worthwhile having a structured meeting, to go through and have a face to face discussion on those, because similar to our discussion earlier on criticality, what you intend by the words you put, versus what we read when we see those same words, we may not be getting the same level of agreement on what those words say. So we would like to see some type of iterative process, if possible, and if you can elaborate on your ability to provide that and your schedule to meet the demands of the Commission.

DR. PAPERIELLO: I think we can provide an iterative process within the time constraints that we have. What I mean by that is, you know, if we take words and we put them out, and either as such, say this looks like an adequate revision -- you know, we may not even put option. We may say that we have heard the industry comments and we think this is

what their position is and we think these words will do it. You come back and say, no, we don't. Then we would have to go through it again.

I would prefer that if we make an iterative change in words, like the issue -- I think you did a good job on chemical safety, because you came back and say this is what the word. You know, I see that issue right now, the ball is in our court. In other words, we had meeting, we talked about it, I asked you to provide words, you provided words. We have talked about them today now. It is up for us to say, hey, can we live with these words, or do we have to say, well, we can live with them, except that, you know, -- so we converge on the whole thing. So I think the idea of coming to convergence on issues is one that is good.

Now, let me just talk about chemical safety, because that is a good example. There are a couple of things I need to consider here. One, we got into this whole business a decade ago because of certain events, and certain decisions made by the Commission back in the mid to late '80s.

Since then, one of the things you said, which is true, is there are other players in this, there's OSHA and there's EPA, and there is a process for controlling certain risk out there that may not have been around ten years ago. So I could go to the Commission and say, okay, these are the words the industry has offered. We have looked at it, we have looked at the MOU, we have looked at things and say, hey, we can live with them if you can live with them.

What it will mean, there might be a class of events which we are not -- is clearly going to be within the purview of EPA or OSHA. The NRC will not send an inspection team and, in fact, if we get called by the newspapers, you know, it is going to be a decision that this is theirs and not ours.

You know, I am just saying that is the kind -- if they can do that, then I can live with the words, because what I am trying to do

is meet a policy that was defined, you know, ten years ago, and, so, you know, that's -- and I don't, you know, I know what you have said here, and I know some of this, but I just don't what the detail. It seems to be consistent with the SRM I have where the Commission is telling me to clarify the use, particularly in the context of the MOU and finding out what other agencies do.

So, you know, I think you have done a good job there. It is now up to us, and the way I am going to resolve is say, hey, this is what this would all mean, and we will, you know, through the Commissioners' assistance, talk to the Commission, you know, will you -- is this okay?

If that's okay, it seems to me that we got ourselves a fixed situation. Now what I would like to do is I would like to go forward with that.

One of the things that we have talked about outside is would the industry be willing -- let's take one section of the Standard Review Plan, Training. It is eight pages long and clearly something, putting aside whether or not we ought to do things like maintenance, training is required by Part 19 but it is also required by Part 70 for areas of emergency preparedness and the like.

What should that section of the Standard Review Plan look like? Would you be willing to give us -- I don't care what section you would revise -- but one to give us an example of what you think the SRP ought to look like, and to get an example in training.

You see what I mean? Yes, I want to iterate but my biggest problem is the time constraints, and in that process as we iterate, and the Commission and the SSRM has named contacts because we have done this in other rules. We did it for the approval of the privatization for U.S. Enrichment Corporation when we needed a fast decision.

We constantly kept the Commission informed of how we were

proceeding and getting guidance from them on what they would accept and not accept. Okay? So just as you need to consult with -- among your own, yourselves, I have to consult with the Commission on this sort of stuff, but no, insofar as we can do it and still meet -- somewhere along the line where there's irreconcilable differences I am just going to have to tell the Commission about the irreconcilable differences and they are going to have to make s decision on where we go.

Does it sound reasonable? I mean --

MR. KILLAR: It certainly sounds reasonable. I don't have a concern with that. I still have a little bit of concern with the timing.

What type of turn-around can we anticipate from seeing these things showing up on the website, things like that, particularly with the holidays coming up? Are we basically going to lose December or are we going to be able to see something a week or so after this meeting to where we can really start looking at your reaction to what we have provided?

DR. PAPERIELLO: I don't know --

MS. EYCK: We are planning to turn these things around as fast as we can.

As was mentioned earlier, we have a dedicated task force working on this and I think what our plans would be is that as we come up with proposed solutions to each of these individual things, we are going to bounce them out to you on the web and not just wait until we have got an entire package, so I would anticipate that you are going to be seeing some input that addresses some of the topics we have discussed today before the end of the month. That's for sure.

MR. VAUGHAN: In that regard, do you all have a schedule that you are shooting for as to what is going to come when?

MS. EYCK: Well, a lot of it was based on the meeting today

and to determine what the issues are and how close we were for resolution. At this point we are working, as Ted mentioned today, to have all of the -- try to finalize all of the rule activities before I think it was mid-February and that would be the closure point on that for us to be able to meet all of our commitments with meeting the SRM so I think we are going to be getting these things out to you as soon as possible and it is a question of how easily we can resolve or how quickly we can resolve these issues and we'll depend upon what the timeframe is.

It's just kind of hard at this point to come up with certain dates on things when it is a question of how close we are to resolution on the issues, and we really didn't know that until the meeting today.

MR. VAUGHAN: Right, and the reason I asked that is we are toying with how we are going to respond in terms of what the NRC is asking for, and we kind of need to -- I mean we might adopt an approach that we are responding on things out of sequence and well out of phase with the items that you are -- we would like to get closer, as closely coupled as possible. We may not get it perfectly close.

MS. EYCK: I would hope before the meetings terminate today or tomorrow that we have identified which items you all might be taking the lead on and which items we would be taking the lead on. I mean at this point I think that as Carl has just mentioned that maybe if you all take a chapter of the SRP and come up with something that you can give back to us so we will get a flavor of exactly what level you are at, then we won't be working on the SRP.

We are going to be working on the rule language and the issues identified in the rule, and we'll be putting them on the Web.

I think it's going to be counter-productive if we are both trying to solve the same problem and then come up with two different proposals. I would hope that when we leave here we would know what

things we are waiting to have input from you and just like on the ISA thing, we are still waiting for your input on what your concerns are with the ISA summary that I know Felix has promised us and we are going to be getting some time in the future, so I think we'll have a clear understanding of who is taking the lead on what topics.

MR. KILLAR: Sounds good. I think we are certainly moving in the right direction.

I guess the concern I still have is somewhat if we could sit down and look at a timeline or what have you, you know, you have given us some dates and cutoff dates and when you look at it mid-February -- well, I know mid-February looks like a long way off. It's not that far off, particularly with the holidays and stuff here, and we are concerned that we do get through these issues and get through them and have the input that is meaningful to you to help you do your work as well, so I think that's certainly something worth going forward on.

Maybe to move on, I guess we have provided some suggested words on the chemical safety and so I think that is certainly one that I don't know if we need to spend any more time talking about what those words are. I think you have captured them fairly well, unless there are any specific questions about the wording or suggestions that we have provided. That would be one that you may be able to take off with and similarly on criticality safety I think that also as a result of looking at 70.60(C) and stuff I think we have got some good language, some good words there if you'd go off and look at those.

Do we have some other sections that we wanted to write some wording on, that we provided this morning that we need to incorporate?

MR. SILVERMAN: I think you just identified the two areas that it looks like we could move quickly on from my sense.

There's a lot of discussion about the various sections of the SRP and I guess we have to figure out what the industry can provide.

MR. KILLAR: One other one that we did provide --

DR. PAPERIELLO: Could I? I have your letter but the letter came in on Monday and so therefore there's not much time to react to the letter, but based on the comments here today, I mean one action -- and we'll take a look at the letter on the Standard Review Plan and respond to that -- but what you can do to help us is, particularly in light of your presentation this morning, is if you took one section -- again, I don't want to say a big one -- a small one, just to kind of "What is the problem?"

We think we got to where you wanted us to be. You said no. The question is how would it look different? That is what I am interested in, how it would it look different?

I did notice, by the way, you were -- you didn't have any concerns with the Radiation Protection section.

MR. KILLAR: We knew that was your expertise and stayed away from that.

[Laughter.]

DR. PAPERIELLO: Well, I went through here and I checked which ones you didn't comment so -- but -- so it's not a complete loss, but, you know, just to get an idea of what it would look like from your perspective, that's all, so we would then -- rather than going back, if we don't like it, well, it gives you a chance to make it look like what you think it ought to look like.

I'm serious. I am not trying to --

MR. KILLAR: I think we got that message and we are going to go and do that.

There is one other section that we did mention in my presentation. That was the SRP section on Decommissioning, because we do see that there's quite a disconnect here.

DR. PAPERIELLO: I read that. I'll take that under

consideration. I know what you read. I have to take a look at what's in there and then take a look at the -- at, you know -- I recognize there's -- I guess if we don't need it, I don't see why we are asking -- if in fact it does what you represent it, as a complete decommissioning plan at this point, many years before you are going to do it, it doesn't make a whole lot of sense. You need to do enough to price it out but --

MS. ASTWOOD: I don't think that was ever the intent of that part of the SRP.

That section was intended to show that there are things that you would have to do at the time of the decommissioning or during license amendments you do have to submit a decommissioning plan, which some of you do have to do -- and another thing you have to do for your decommissioning, financial assurance plan. I don't think it is fair to twist language -- I think decommissioning is something that should be in the SRP and is something that your license amendments are reviewing.

MR. KILLAR: I agree with you as far as the funding plan as part of the license commitment, but under 70.38 you get into the timeliness rule and decommissioning if you are trying to release a portion of your site, and then that gets into the other aspects of it, and the problem is that when you try to commingle those under license conditions over an operating facility it doesn't make sense.

That is where we have the disconnect.

Liz, you mentioned training. Is there any other areas in particular? I know we are holding the ISA in abeyance right now. Is there any other areas in particular that you would like additional input on or would like us to focus on?

I know one thing that we have not spoken to at all, and that is the reporting requirements and we have looked at that and we do feel that it is somewhat of a burden above and beyond what we have been doing but we have not spent the time to go through and identify where the

specific problems are but that is something that we have been holding in abeyance but it is certainly an issue --

DR. PAPERIELLO: I recognize that.

MR. VAUGHAN: I have been looking at what we have been talking about and drawing little pictures and I think what LIz said has a lot of merit to it, because we are on a course that kind of says that the rule language now is in NRC space and criticality safety, we have talked about it generally but we think that there's probably the rule space again is in the NRC's court but we have identified a need for the practicing criticality engineers, et cetera, to get together and work out some of the details, so that is in a workshop space.

Chemical safety that we talked about today is in the NRC space. We just talked about decommissioning and it sounded like decommissioning was in the NRC space, so applying that model works pretty good.

We haven't talked about ISAs yet so we don't know what space that will go in, and I can tell you that the management control section has a lot of meat in it and how we get to the bottom of all that and what space it goes it I don't know but it has a lot of content.

You know, there's environmental management, fire safety, a few other things on the list that we need to talk about who is going to do what to who, but it sounds like this partitioning so we are not working against each other but we are working with each other and keep it flowing is going to work.

DR. PAPERIELLO: And something we can do -- I mean before I tackle the entire Standard Review Plan at least in terms of how it is written, first, there is a question of whether certain things are in their appropriately.

You have raised the issue about -- and I am not trying to reflect on anybody because I haven't read this thing in detail to

know -- I read what you have said about decommissioning, okay? -- so let's take a look at what's in there on decommissioning.

Before you do anything with it, I would like to turn around and see what my reaction to the contents of it are.

I don't think in terms of style -- I mean you could take on whatever you want to take on, but for my purposes I would pick the section that I said, training, looked fairly short. When I looked at QA I saw that's godawful long, so with help if we find that we get an idea, because we thought, at least the Staff thought that we did have an adequate connection between the ISA and some of these programs and you didn't.

This gives you an opportunity to do that.

I am afraid if we take on too much in a Standard Review Plan right now, we are not going to get anything done. The rule is just fewer words. I am counting the number of words in the rule. If I can straighten that out, that sort of takes -- there are things that have to be done.

I have to get a lot more concurrence and agreement with the agency on the rule than I do have to on the Standard Review Plan so if I can get the rule language reasonably well locked up by February, we can still continue to work on the Standard Review Plan, particularly if we have reasonable confidence that we are on the right path on the Standard Review Plan in terms of how it is going to look.

MR. SHERR: I have two suggestions.

One matter is on criticality. The notion is there are some problems with the rule language on criticality. Maybe I'm dense, but it is still not clear to me what rule language is of concern -- so I would very much appreciate it if you provided, at least identified what is the language of concern and at least an approach to how that language could take care of it.

MR. VAUGHAN: I thought that Carl did -- maybe he didn't have exactly the right words but I think what he was suggesting certainly aims at what is bothering us in the rule.

I thought we had agreement.

DR. PAPERIELLO: That's what I thought.

MR. VAUGHAN: That's what I thought.

MR. SHERR: The specific section I believe is 70.60(C).

MR. SILVERMAN: Which goes beyond criticality and I think when you think about -- I think what these folks are saying, the criticality-specific issues, specific to that issue, are more found in the SRP than in the rule itself.

There is this general problem in the rule of it not being sufficiently clear that it is a risk-based rule overall, and that is 70.60(C) we are talking about. That covers criticality as well as a lot of other things, so I don't think --

DR. PAPERIELLO: That was the reading I had. In other words if we fix 70.6(C) we would fix the rule but then you have got to go down -- the devil's in the details -- and you have got to go down into the Standard Review Plan and deal with a number of issues.

First, in dealing with how you handle double contingencies and then going beyond that, what is the level of detail that you need.

MS. EYCK: If I can just reiterate what Charlie has said and maybe we can kind of focus, and correct me if I am wrong, but what I have identified here is that NRC will take the lead on making any proposed changes to the rule.

The Nuclear criticality safety we are going to be awaiting the workshop before we proceed on trying to address the changes to that, with the exception of the rule changes that we'll be making.

On the chem safety SRP I think we can take a stab at moving ahead and trying to address some of the changes there because you had

suggested a number of changes to the SRP in that area and I think we can focus on that.

On the decommissioning area in the SRP, NRC will be looking at that.

The ISA we are going to wait for your comments.

Reporting requirements, we are going to wait for your comments and on some proposed chapter of the SRP, whether it is training or whatever, we are going to wait for you all to provide your draft of what -- where you would like to see -- or the level of detail that you would like to see in the SRP.

Has that encompassed all the things that we are going to move out on, or does anyone else have any other suggestions or comments?

MR. VAUGHAN: I think that is about the way that we see that right this minute, but then there are other things that we need to talk about in terms of how to address them, but as to where we are in the thought process right this minute, that seems to be correct.

[Discussion off the record.]

MR. KILLAR: Just for everybody else, now that I have walked between the tables, what we have decided we'll do is that each of the organizations and entities will go off and caucus as to basically what we have heard today, and we will reconvene tomorrow morning at 9 o'clock here, and we will go on with the discussion.

If there is anything in the caucus that we need to clarify based on what we talked about today, we will do that first thing, and then we'll go on to the discussion of the ISA.

MR. SHERR: There should be on the table outside, as you leave there should be copies of the briefing charts that were used today.

[Whereupon, at 3:19 p.m., the meeting was recessed, to reconvene at 9:00 a.m., Friday, December 4, 1998.]

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