

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

\*\*\*

BRIEFING ON ALTERNATIVES FOR REGULATING  
FUEL CYCLE FACILITIES

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PUBLIC MEETING

Nuclear Regulatory Commission  
One White Flint North  
Rockville, Maryland

Tuesday, July 2, 1996

The Commission met in open session, pursuant to notice, at 10:00 a.m., Shirley A. Jackson, Chairman, presiding.

COMMISSIONERS PRESENT:

SHIRLEY A. JACKSON, Chairman of the Commission  
KENNETH C. ROGERS, Member of the Commission  
GRETA J. DICUS, Member of the Commission

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STAFF AND PRESENTERS SEATED AT THE COMMISSION TABLE:

JOHN C. HOYLE, Secretary of the Commision  
KAREN D. CYR, General Counsel  
JAMES TAYLOR, Executive Director for Operations  
CARL PAPERIELLO, Ph.D., Director, Office of Nuclear Material Safety and Safeguards  
ELIZABETH TENEYCK, Director, Fuel Cycle Safety and Safeguards Division, NMSS, U.S. Nuclear Regulatory Commission  
ROBERT WILLIS BISHOP, President, General Counsel, Nuclear Energy Institute  
JAMES A. FICI, Plant Manager, Westinghouse Electric Corporation, Columbia, South Carolina  
CHARLES VAUGHAN, Manager, Regulatory Compliance, General Electric  
ROBERT WOKEY, Manager, Nuclear Regulatory Affairs, Assurance and Policy, U.S. Enrichment Corporation  
HAROLD BURTON, Sr. Vice President, SCIENTECH, Inc.  
DONALD VIETH, Sr. Technical Advisor, Tank Waste Remediation System, Department of Energy, Richland Operations

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PROCEEDINGS

[10:00 a.m.]

CHAIRMAN JACKSON: Good morning, ladies and gentlemen. Today, the Commission will be briefed by both the NRC Staff and industry and other government representatives on alternative approaches on regulating fuel cycle facilities.

The Commission would like to welcome the industry and other government representatives to the NRC. I use "other" because the NRC Staff is obviously government.

We look forward to hearing from all of you this morning. This is an important matter on the Commission's agenda. The NRC has been examining various methods for improving the regulatory program for fuel cycle facilities for the past five years. During that time, the NRC has focused on a number of different aspects of the program, including quality assurance, maintenance management controls and criticalities safety to name a few.

This effort by the NRC Staff has not been done in isolation from the various affected parties. The NRC has conducted workshops with major fuel cycle licensees and other affected stakeholders on this issue and has solicited the views of industry on preliminary draft rulemaking packages.

In April, the NRC Staff submitted a paper to the

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Commission that identified six alternatives that were developed to provide a range of options for upgrading and more clearly defining NRC's regulatory base for fuel cycle facilities and as part of its deliberations, the Commission

looks forward to hearing more about each of these alternatives from the NRC Staff and later this morning hearing the views of industry and other affected parties on potential modifications to NRC's regulations governing fuel cycle facilities.

Commissioner Rogers, Commissioner Dicus, do you have anything that you would like to add at this time?

COMMISSIONER ROGERS: No, thank you.

CHAIRMAN JACKSON: If not, Mr. Taylor, please proceed.

MR. TAYLOR: Good morning. With me at the table are Carl Paperiello and Liz Teneyck from the Office of Nuclear Material Safety and Safeguards.

The presentation this morning will be given by Liz.

MS. TENEYCK: Thank you.

Well, good morning.

As you mentioned, today we will be discussing the topic of upgrading 10 CFR Part 7(d) which contains the regulations for the possession and use of special nuclear material. We plan to provide a background of what raised

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concerns regarding the adequacy of our regulations and specific weaknesses that have been identified with the rule, as well as what activities we have had under way since 1993 to upgrade the rule through the rulemaking process.

As you mentioned, we have identified a number of alternatives of proposed ways for the Commission to proceed and we will discuss those in greater detail today.

Next slide, please.

[Slide.]

MS. TENEYCK: To review or to familiarize you with how we got to where we are today, we plan to look briefly at some events that have happened at our fuel facilities, the results of some self-assessments that we have made of our regulatory program and the evolution of actions that the Staff has taken to date in that vein.

Next slide, please.

[Slide.]

MS. TENEYCK: Looking back, the most significant event that has happened at a materials facility occurred at our Sequoyah Fuels facility in 1986 when an individual was killed by a hazardous chemical that resulted from the rupture of a UF-6 cylinder. Now, although Sequoyah Fuels is a Part 40 licensee, the event did involve the heating of a UF-6 cylinder which is similar to activities conducted at many of our fuel facilities today.

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A resulting congressional committee report criticized the NRC at that time for being too narrowly focused on radiological safety and not addressing other hazards such as chemicals.

In 1991, there was an event at GE Wilmington that focused our attention in the criticality safety area. Subsequent reviews identified weaknesses at the operations at the facility as well as weaknesses in NRC's regulatory program.

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[Slide.]

MS. TENEYCK: After the GE event, a task force was created to review the materials program and it identified a number of weaknesses. Recommendations to correct these weaknesses were published in NUREG-1324 entitled Proposed Method for Regulating Major Material Licensees in February of 1992.

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[Slide.]

CHAIRMAN JACKSON: For the record, do you want to mention what one or two of those weaknesses that were identified are?

MS. TENEYCK: Okay. If -- let's see. We have a background slide of -- Slide Number 4, we can move to that quickly, if you would like, and just quickly go down some of

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them.

[Slide.]

MS. TENEYCK: They dealt with a requirement to immediately decontaminate contaminated areas, to require the reporting of potential criticalities or the loss of criticality safety controls, to require a standard format for the licensing application and to in effect move toward a living license and also to perform a hazards analysis, which was something that was missing in our regulatory program, to

develop a standardized approach for the submittal of license applications and the review process and to prohibit contamination in areas external with facilities. So it dealt with a lot of risk type of activities from a hazards analysis to focusing on contamination control to focusing also on the licensing process.

COMMISSIONER ROGERS: I wonder if sometime during your presentation you could indicate how serious the most serious kind of an accident at one of these facilities might be in terms of public health and safety consequences and where that might fall in the general spectrum of industrial facility accidents, in facilities of this general type or chemical processing type?

In other words, I wonder if you would give us some perspective of just what is a really serious event that might take place at one of these materials processing

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facilities and where would we put that in the spectrum of consequences which we really want to avoid, just what the general range is.

CHAIRMAN JACKSON: And as a follow-on to that, I am interested in how the posited ISAs, the safety assessments, would fall in terms of an ability to answer questions about the potential for this most serious kind of event to occur in one of these facilities.

[Slide.]

MS. TENEYCK: All right.

Continuing with slide five, the Staff addressed one of the task force recommendations in 1991 when it published Bulletin 91-01, to encourage licensees to voluntarily notify the NRC when they lost controls such as moderation or geometry that were in place to prevent criticalities. Staff feels that our current regulations are deficient in that it only requires actual criticalities events to be reported to the NRC.

Staff also considers these 91-01 reports to be important precursor information which we track and analyze. We think it is important to know why and when these controls are lost and also to be in a position to review the licensees' root cause analysis and corrective actions to identify any generic weaknesses with our regulatory program.

To date, 70 such events have occurred and many of

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them substantiate the weaknesses that were identified in NUREG-1324.

Next slide, please.

[Slide.]

MS. TENEYCK: In 1992, Staff initially developed an action plan to respond to the program weaknesses, primarily focusing on upgrading guidance rather than modifying the actual rule and by conducting team assessments to identify facility weaknesses. And the goal at that time, I think, was to actually try to inspect safety into the facilities.

The Commission responded at that time with a direction to the Staff that the highest priority should be to sharpen and upgrade the regulatory base for determining the adequacy of licensee performance. So, consequently, Staff reorganized and developed a new action plan which focused on, among other things, upgrading the regulatory base, developing a new standard review plan for the first time, revising the existing standard format and content guide and developing implementing guidance.

Next viewgraph, please.

[Slide.]

MS. TENEYCK: We do not feel that fuel cycle facilities are being operated in an unsafe manner. We do think, however, we feel that we need to have increased

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confidence in the operating margin of safety and a better understanding of the safety basis for conducting activities at the facilities involving special nuclear material.

The present rule is not risk-informed and it does not require a hazards analysis. Staff's position is that an integrated safety analysis is needed which systematically analyzes the potential risk from criticality, chemical process safety and fire hazards so that potential accidents or high risks can be identified so that items relied on for safety can be implemented and measures to ensure the continued availability and reliability of these measures are in place.

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[Slide.]

MS. TENEYCK: We feel that the greatest threats to these facilities are from criticality and the hazards of chemicals and fire. However, our current rule is essentially silent on the latter two and requires criticality alarms to be in place but doesn't currently require licensees to prevent criticalities.

Presently, as I mentioned earlier, only criticality events are required to be reported to NRC. The Staff feels that reporting requirements similar to those contained in Bulletin 91-01 should be incorporated into the regulatory base.

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Part 70 has also been modified so many times since its initial issuance in the 1960s that we feel that it is difficult to understand and administer. It often contains redundant requirements presented in a very disjointed fashion. It also is very prescriptive in some areas and, in other important safety areas, essentially says operate safely.

The requirements also address a wide range of SNM uses, from subcritical quantities of material that are contained in sealed sources all the way to large quantities of highly enriched uranium. So the rules are required to be applied to a large group of cats and dogs, as you might say.

Next slide, please.

[Slide.]

MS. TENEYCK: Staff had concurrently developed a rulemaking package that contained a rewrite of Part 70, a totally new standard review plan, a revised standard format and content guide, a guidance document on implementing an integrated safety analysis and a regulatory analysis that it had proposed to provide to the Commission in June of 1995. However, at a Commission meeting in March of 1995, the Commission directed the Staff to provide the draft rulemaking package to industry and other interested parties to solicit their input on the proposed changes, without the customary statement of considerations that would normally

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have gone along explaining the purpose of the rule and without a planned two-month refinement period in which the Staff had proposed to finalize the rule before it was submitted to the Commission.

Two public workshops were subsequently held with industry and other interested parties in March of 1995 and November of 1995. Rather than trying to characterize industry's perspective of the rule, as you mentioned, they have been invited here today and we will hear their presentation after ours.

Since members of the Commission have changed substantially since our rulemaking effort began in 1993, Staff has identified six alternative approaches for the Commission's consideration on how Staff might proceed in this area.

Next slide, please.

[Slide.]

MS. TENEYCK: Listed on the viewgraph are six proposed alternatives. Let's begin with alternative two, which is currently the status quo.

In the early 1990s, when weaknesses were identified in the regulatory program, the licenses of seven major fuel facilities were in timely renewal. The renewal process had to proceed along with the rulemaking process so Staff subsequently encouraged licensees to voluntarily

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commit to performing an integrated safety analysis and to maintain that ISA for use in licensing activities.

In effect, what we were doing is we were trying to implement generic changes to correct identified weaknesses without the benefit of a rulemaking.

Next slide, please.

[Slide.]

MS. TENEYCK: Staff feels that there are significant disadvantages of trying to license under the current Part 70 particularly since it doesn't adequately address the performance of an ISA, criticality prevention, chemical process safety and fire protection. It is also silent on the protection of external events such as a seismic event, except at a plutonium facility.

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[Slide.]

MS. TENEYCK: We have found that reliance on voluntary commitments to perform an ISA is not an effective and an efficient way to regulate because without formal

requirements and implementing guidance, interpretations of what is an appropriate ISA can vary widely.

Staff feels that it is important to have a requirement for an ISA to systematically analyze the hazards from criticality, fire and chemical process safety and that it be kept current through a good configuration management

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program, that it be thorough and that it be used to determine the impact of process changes.

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[Slide.]

MS. TENEYCK: Going back to the alternatives, I would like now to discuss alternative one, which basically represents -- I'm sorry, back to slide nine.

[Slide.]

MS. TENEYCK: -- which basically represents licensing under the constraints under the current Part 70, without encouraging licensees to voluntarily commit to performing an ISA. That, in our mind, is just moving backwards, knowing the weaknesses that are with the current rule.

Alternative three proposes to amend Part 70 to require that an ISA be performed and maintained and commitments be made to identify items relied on for safety and to identify implementing measures to assure their continued availability and reliability.

Staff has responded other industry's concerns raised during our public meetings to establish -- their concerns that we require -- that multiple programs be established to provide this availability and reliability of the items relied on for safety. At the time, we had no idea of the connotation and the baggage that went along with the

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term "program" so we have modified our proposal to require that they establish a safety program that requires -- that includes, I'm sorry, all of the measures that we feel are important like QA, maintenance, configuration management and whatever, and that they be applied to the items relied on for safety commensurate with the risk of the particular problem.

Next page -- I'm sorry, you're all on that one. I'm moving pages here.

Alternative four would amend the Part 70 similar to the amendment for alternative three, although in addition to requiring ISA, we would also require that the other weaknesses that have been identified within Part 70 be addressed such as reporting requirements. And, also, we would want to require that the licensees submit their application in a single, one-part format. Existing guidance encourages licensees to provide their application in two parts. The first part would require their commitments to us that are enforceable. The second part was, in essence, a discussion of their safety program which they were free to modify without NRC review and that wasn't binding. As a result of that, when we came to renewal time, the safety program that was described in the original application did not resemble in most cases their current program and it required a much more onerous renewal process than we feel is

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necessary.

Alternative four would also include our requirements like reporting of the 91-01 type of loss of criticality controls and also would require the approval of NRC for an ISA for any new processes or new construction.

Alternative five, which is similar to the original Staff approach, would involve a rewrite of the Part 70 for to reorganize and restructure the rule and also to delete requirements that we feel are overly prescriptive and redundant. A new proposed approach is also included where we would separate the critical quantities of special nuclear material from Part 70 into a new part, thus leaving the existing Part 70 unchanged to address subcritical quantities which are similar to those licensed by agreement states and there we have a goal of comparable requirements so, in essence, we would not be affecting the agreement state program at all and we would have all of our subcritical quantity licensing in one part.

Alternative six would also be a modification which could include the alternative three, four or five but would grandfather the operations at existing fuel facilities from the requirement of having to perform an ISA because of their operating history. However, if they made any major modifications to their program, initiated any new processes

or new construction, then we feel that an ISA should be

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performed.

In summary, we have identified the weaknesses with the current Part 70 and have proposed a new risk-informed licensing approach to increase our confidence the margin of safety at licensed fuel facilities.

As directed by the Commission, we have discussed our proposed rulemaking activities with industry and have made some modifications to our rulemaking package based on that input.

Shortly you will hear their perspective on our proposed changes.

We will be faced in the near future with licensing new facilities, often using new technologies and we feel that it's important that we have a strong regulatory base to support our licensing efforts.

We also feel that it is important to have a good standard review plan so that we will have a predictable licensing process, so we have proposed six alternative approaches for your consideration and we now look for your direction as to which direction we should proceed.

That concludes my remarks.

CHAIRMAN JACKSON: Thank you.

MS. TENEYCK: If you think that I did not address your comments, the questions you had earlier I'd be happy to address them.

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COMMISSIONER ROGERS: Maybe I missed them -- no, I don't think you did.

MS. TENEYCK: Okay.

COMMISSIONER ROGERS: I don't think you addressed on any kind of a quantitative basis or risk as we normally interpret risk as probability times consequences, or even the consequences themselves -- I didn't hear that -- and it seems to me that's -- we have to have something to put these systems into the overall perspective of everything we regulate -- reactors and all the way down to medical programs.

I don't -- I think if you are not prepared to do it right now, that's okay. I think that has to be done, but it does seem to me that at the moment we don't have the advantage of being able to put this in some kind of a risk perspective.

Also, I am a little uncertain as to what you really do mean when you are talking about ISAs. Are you talking about doing a PRA as part of that or not? In your list of alternatives, the word "risk" appears only in Alternative 5. You mention ISAs and it is only in Alternative 5 that you mention the word risk-informed. It's not clear to me that ISAs are being contemplated on a uniform basis involving a probabilistic risk assessment or not.

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I know there was a great discussion a year or two, a couple of years ago, on the subject of risk in these facilities or hazards -- they used the word "hazards" that were not in general the end result of a probabilistic risk assessment. Many of them were qualitative assessments of potential hazards.

In other words, what I am trying to see is what are we talking about here when we are talking about an ISA. Are we all talking about the same thing? How does an ISA conceptually relate to an IPE for a nuclear power plant? Are they totally different kinds of animals or do they bear a certain kind of similarity to each other in terms of methodology and that is what, you know, I would like to hear something about.

MS. TENEYCK: Okay. I'll be happy to respond to that.

The ISA concept is very similar to what is conducted in the chemical industry. It's not a new process. It's been around for a number of years and there's a number of ways to accomplish that. A PRA is one technique and in our guidance document that we developed, we identify a number of techniques that can be used to perform an Integrated Safety Analysis.

We recognize that the results from a fuel facility are not similar to the consequences that could result from a

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nuclear power reactor but in our rule we do provide or plan to provide consequence limits that will identify when the licensees -- what they should be protecting against and any

risks that would exceed those levels, and they are not as great as what would be at a power reactor -- we're currently contemplating, say, 5 rem at the site boundary -- but the events that could happen at a fuel facility are much more focused on affecting worker safety.

Individuals can be killed from criticalities.

They can also be killed from hazardous chemicals that could result and fires could cause a significant dispersal of the nuclear material around and could cause health and safety problems.

But your concern from a PRA perspective, that is just one technique. Industry has indicated in their experience in conducting such things that a PRA is not always necessary, that it is more important that it be conducted by a team of individuals that are familiar with the facility and the process that as they go through the process they look at potential problems that could cause criticalities.

They look at chemicals that are used in a process and to identify any risks that they could pose to the process, and it has been determined that a very effective, Integrated Safety Analysis could be done without the use of

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PRA.

We also find that PRA is a useful technique in power reactors when a lot of their systems are very similar and there's a lot of history on failures of equipment, but in our fuel facilities we find that they almost all are very unique, do not always use the same type of equipment, and so it does not lend itself to the performance of a PRA as well as a power reactor would.

CHAIRMAN JACKSON: Do you have any comments, Carl?

MR. PAPERIELLO: I would characterize -- you asked about the risk -- the risk in a fuel facility as mentioned is twofold.

The first is the chemical risk, the largest probably being characteristic of the rupture of a large UF-6 cylinder as occurred at Sequoyah Fuels with the accompanying consequences.

The other is an inadvertent criticality. If you look historically at the criticalities that have occurred, you are talking about killing nearby employees. Generally the lethal radius is in the order of tens of feet and offsite radioactive consequences are relatively small. They are far less than a reactor and probably bounded by more traditional chemical type accidents, but that is -- obviously, it's not a reactor. You are not going to get devastation of large portions of the countryside that could

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happen in a reactor.

It's within the range of comparable petrochemical accidents -- you know, refinery accidents and the like.

CHAIRMAN JACKSON: Given what you just said, two questions come to mind.

One is where would the alternatives -- how do they play? Have you done that kind of a juxtaposition of the alternatives that you have laid out to comparable regulatory requirements in the industrial chemical facility space because what you just said suggests that that is the comparison that is more apt.

So the question is where do these proposed alternatives lie with respect to regulatory requirements for those kinds of facilities?

MS. TENEYCK: Maybe I can address that.

The hazards analysis that we are proposing is not that different than what OSHA and EPA have proposed. In fact, some of our licensees are interested in conducting the ISA in such a way that it satisfies the requirements of NRC, EPA and OSHA.

CHAIRMAN JACKSON: And have you done any order of magnitude or cost/benefit estimation of the alternatives that you presented?

MS. TENEYCK: We had a regulatory analysis done of our original proposed draft. The alternatives that are

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proposed to date we do not have cost/benefit analysis done on because we wanted to get direction from the Commission before we proceeded in doing any of them.

There is an upfront cost. We all recognize that it is going to be an expense and it can vary from site to site, but we have in discussions with licensees had indications that the results of the ISA have been useful and have identified potential problems that could have shut them

down and that having a better understanding of the safety basis will in most cases allow them to operate and by being up and operational it will save them money in the future, so that is about as close from, you know, a detailed analysis that we have done although we did have some other cost analysis done but it wasn't a final product and it still needs to be refined.

CHAIRMAN JACKSON: Commissioner Dicus?

COMMISSIONER DICUS: No questions.

CHAIRMAN JACKSON: Let me ask you one last question.

You talked about reg guides, standard review plan, and implementing guidance. Presumably this is what was presented to the earlier Commission as a way to address some of the issues and concerns with the existing Part 70 or its implementation, is that correct?

MS. TENEYCK: Yes, the Commission was satisfied

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with the approach that we were taking to address the weaknesses.

CHAIRMAN JACKSON: And so the alternatives that you are presenting now are meant to be ones that would supersede doing those things, is that correct, or these things would be done with reference to whichever alternative is the --

MS. TENEYCK: No. We would not propose to do anything other than to -- whatever way we modify the rule we feel it's very important that we have a standard review plan.

We feel that is an important document to be used to standardize the review process. In the past it was done on a more ad hoc basis. There were branch technical positions, various documents, but we think that a good standard review plan is imperative not only for use of the licensing staff in reviewing the applications but also for the use of the Applicant to know what acceptance criteria that the NRC will be using when they prepare their application and so that is a very important thing.

The standard format and content guide we feel is important because that gives guidance to the licensees on how they could prepare an acceptable application so we feel that those two are very important and we also feel that guidance such as that which we were developing to identify

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techniques on performing an ISA are very important, so we don't propose that the rulemaking package be any different than how we have proposed it before. It's just a question as to how we proceed in modifying the current rule.

CHAIRMAN JACKSON: What happens in your development of a standard review plan, et cetera, what happens to things like the branch technical positions and so forth.

MS. TENEYCK: They were incorporated into the standard review plan. Now let me tell you that we don't have a general consensus on what should be acceptable criteria at the time we started the development of this SRP. We basically had a lot of individual staff doing the best job that they could do with the lack of guidance but putting their own twist on what they felt was an acceptable system, so that there was a lot of meetings that brought together the Staff to come to a consensus on what was acceptable criteria.

Branch technical positions that had been used in the past certainly influenced these decisions but the perspective of basing it on the risk areas and addressing those things was a new perspective, because before the approach was to provide an across-the-board maintenance program or, you know -- we didn't have a maintenance program.

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Let me give another example -- a radiological safety program. It was just layers of programs that were applied rather than taking the approach of looking at the high risk areas and applying the measures to those.

The entire approach that we proposed based on the ISA would be to not only focus the licensing on the high-risk areas, but to restructure our inspection program so that they inspect and focus on the high risk areas to ensure that the measures that are there to provide protection are indeed available and reliable, so we are changing our whole focus and that is to take, you know, an effort to turn to the Staff and bring them together in a consensus position and I think that we have that now but it wasn't there two

years ago and we have been working on it all along, so I think that is something that this would give us that would be very useful for the process.

CHAIRMAN JACKSON: And your intent would be to remove overly prescriptive requirements in both -- either a new or an amended rule as well as any implementing guidance?

MS. TENEYCK: Well, the way that the alternatives are laid out, the real alternative we would have to remove those prescriptive requirements would be on Alternative 5, where we would rewrite it.

In fact, it makes it a little difficult to even patch in the ISA approach into the current rule because of

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all these existing prescriptive programs. It would be even probably more confusing to a new Applicant trying to understand the process then if we were able to rewrite the entire rule and strip out of it all of these prescriptive programs that are in there.

We feel our approach gives the licensees a lot more flexibility in defining their programs because they are going to identify the areas that are high risk and they will determine the important things, whether it be maintenance or QA or training that is necessary to assure the availability and reliability of those measures.

CHAIRMAN JACKSON: And it's not going to take you another five years?

MS. TENEYCK: No, ma'am. We are very, very close. As I say, we have the draft rule. We have already been thinking in these terms.

I think it would probably be harder to go back and try to patch something into the existing rule than to come up with a new rewrite.

CHAIRMAN JACKSON: Mr. Rogers? Do you have anything to add?

COMMISSIONER ROGERS: Well, just one little question of detail.

In Attachment 2 to the SECY 96-079, there was a reference to a Westinghouse submittal that pointed out the

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remarkable agreement between a submittal -- I guess to us -- and OSHA, an OSHA requirements submittal or conformance and something that might meet EPA requirements as well, and the comment was, I just have to paraphrase it because I can't remember the exact word, but essentially that it was remarkable agreement between those three documents that they were preparing.

My question is did they include an ISA and was that a quantitative ISA? In other words did it involve a PRA?

MS. TENEYCK: I think that you could best ask that question to the Westinghouse representative that is here today.

COMMISSIONER ROGERS: I see, okay.

MS. TENEYCK: Similar approaches can be used to satisfy all of our requirements and so I think that we certainly are supportive of an approach that would not be contrary to meeting the requirements of OSHA or EPA.

COMMISSIONER ROGERS: Thank you.

CHAIRMAN JACKSON: I note that both NRC Staff and industry talk about removing over-prescriptiveness and performance-based approaches.

Is there concurrence as to what "performance-based" means?

MS. TENEYCK: No. I can say that very

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emphatically. We have -- our position on performance-based rules are not prescriptively telling the licensee what they have to do, but allowing them the flexibility of telling them what we feel the requirement should accomplish and letting them have the flexibility of proposing to us how they would plan to meet that.

We have heard many other definitions of performance-oriented rules and I would suggest maybe you might ask industry what their definition is of performance-oriented.

CHAIRMAN JACKSON: Okay. Any other questions? Commissioner Dicus?

COMMISSIONER DICUS: I have none.

CHAIRMAN JACKSON: Well, thank you very much. I think we'll hear from the industry and other representatives. Thank you very much.

Mr. Bishop, you are leading the group?

MR. BISHOP: Yes, ma'am, I am.

Chairman Jackson, Commissioner Rogers,  
Commissioner Dicus, for the record my name is Bob Bishop. I  
am Vice President and General Counsel of the Nuclear Energy  
Institute. Mr. Colvin sends his regrets that he was not  
able to appear here today. He asked me to appear in his  
stead because I have some experience in these matters as  
well.

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I am here on behalf of the nuclear energy industry  
which has focused its activities with respect to the  
regulation of facilities licensed under Part 70 through an  
NEI committee called the Facility Operations Committee. You  
may hear us refer to the FOC. That is what that focus is.

CHAIRMAN JACKSON: Excuse me, Mr. Bishop. Just  
for the record, would you introduce the other gentlemen at  
the table?

MR. BISHOP: Yes, ma'am. On my right is Mr. Fici,  
manager of Westinghouse's Columbia, South Carolina, fuel  
fabrication plant. On my left, Charlie Vaughan, responsible  
for regulatory and environmental health and safety matters  
at General Electric's Wilmington, North Carolina, fuel  
fabrication plant.

I should mention in the audience today are also a  
number of other individuals with similar direct  
responsibilities for fuel fabrication facilities licensed  
under Part 70 that also represent that important sector of  
the industry. Specifically here today are plant managers or  
senior staff members representing Westinghouse and General  
Electric. At the table, ABB Combustion Engineering, Babcock  
and Wilcox, Framatome Nuclear Fuel Services and Siemens, the  
major fuel fabrication facilities, and representatives of  
other Part 70 licensees as well. I think that is an  
important sign of the importance that the industry feels

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about this issue.

I will begin our presentation today with a broad  
overview of the situation from our perspective and what we  
believe is critically important. That is developing a  
regulatory framework that makes sense.

Messrs. Fici and Vaughan will then provide the  
industry's recommendations in more detailed fashion based on  
their direct licensing and operating experience and, of  
course, at any time we would be willing to answer any  
questions you might have.

First and foremost throughout our discussion  
today, I believe it is important to recognize that neither  
the regulated licensees nor the NRC have concluded that  
additional or different regulation of Part 70 fuel  
fabrication facilities is necessary to ensure adequate  
protection of public health and safety or the safety of the  
many employees and contractors who work at our facilities.

Yes, mistakes have been made at individual  
facilities, errors have occurred. And, yes, events have  
occurred that we all wish have not occurred. But we have  
learned from those experiences and we will continue to work  
to make sure that they will not happen again.

We have taken actions in response to that, to  
those events and errors, that included the modification of  
safety programs, emphasizing to our people the need to do

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the right thing as well as modifying our operating  
practices, systems and components to be more effective.  
There can be no question that the plants now have even  
improved margins of safety because of those voluntary  
efforts on the part of licensees.

An independent assessment conducted for the NRC  
Staff now two years ago by Science and Engineering  
Associates goes precisely to that point. The NRC Staff's  
consultant concluded that:

"Part 70 licensed facilities are not unsafe, as  
currently operated and regulated. This is attested to by  
the fact that there have been relatively few accidents  
involving SNM, special nuclear material, at Part 70 license  
sites, and no member of the public has been injured due to  
such accidents. In addition, there have been no criticality  
events at Part 70 license sites since the NRC was created in  
1974 and assigned oversight responsibility for SNM  
activities."

The obvious conclusion, the defense in depth  
approach to plant design and operation has proven to be  
valid at Part 70 facilities.

The consultant's report went on to observe:  
However, events have occurred at these facilities,

particularly at fuel cycle facilities, that could possibly lead to more serious events or accidents.

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The NRC Staff's principal articulation to us as well as in this briefing today of why a dramatically different regulatory system should be imposed has been based on the NRC Staff's concerns about their lack of confidence in the margin of safety that now exists. Phrased earlier, a so-called record of upsets that has occurred and that the current regulatory system is "haphazard", a confused way of licensing. Let me address those briefly in turn.

We have analyzed the record of upsets in a document labeled Additional Discussion of Part 70 Operating Experience. We have made copies available in the meeting room, to commissioners and to Staff. We ask that that analysis be included with the transcript of this briefing and the record of this proceeding.

This analysis demonstrates that, in the events analyzed by the NRC Staff, there always remain substantial margins of safety and conservatisms that continue to ensure public health and safety.

As to the second point that the current regulatory system is haphazard, the current system may not be elegant, I believe was the word the Staff used in the Commission briefing last year, but I think it is clear it has also worked. The major reason for the so-called haphazard system is that the current system was designed to work to accommodate a wide variation of types of facilities licensed

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under Part 70. That is not a flaw in the current system; that is a virtue of the current system.

The industry has been concerned during the last five years that the NRC Staff has been considering a variety of changes to the regulatory system that the potential impact on licensees of those changes has not been carefully evaluated. First, many of the changes being considered and that are among the alternatives before the Commission today would not achieve benefits that are in any way commensurate with the cost of implementing those changes. Second, many of the changes under consideration could have unintended consequences that could, if only through a diversion of resources, in fact end up being adverse to the public interest.

Because of these concerns, we were heightened when the Commission directed the Staff last year to discuss these matters with the major fuel cycle licensees. Today's presentations reflect the benefit of the significant interactions that have taken place over that past year between your Staff and the industry.

As Messrs Fici and Vaughan will describe, both the NRC and the industry have benefitted significantly from those discussions. We think the stage is now set for developing a process that will address the heart of the NRC Staff's concerns yet provide real value to Part 70

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licensees.

Let me turn first to Mr. Fici to provide an overview of the industry's perspective on this important matter and then turn to Mr. Vaughan to provide a more in-depth review.

MR. FICI: Good morning, Chairman Jackson, Commissioner Rogers, Commissioner Dicus. I am Jim Fici of Westinghouse and I am pleased to be here today to not only represent Westinghouse but all of the fuel cycle companies that operate facilities licensed under Part 70. All of the major Part 70 licensees are here today as authors of this presentation and I have spoken with all my counterparts and we are of a like mind.

Over the last several years, the Staff and the industry have discussed and debated Part 70 at some length in meetings, workshops and other forums. By and large, the industry has been opposed to major revisions to the rule. This is primarily because we are convinced that Part 70 fuel facilities are being operated safely under the existing regulations. The recently completed NRC plant performance reviews of three of our facilities bear out our conviction. Furthermore, the Staff has concurred with that assessment, but still apparently desires increased confidence in the safety of our operations.

After our last workshop with the Staff in November

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of 1995 and after careful review of SECY 96-079, we have come to the unanimous conclusion that our mutual goal, to

maintain and improve the margin of safety of our facilities, would best be served if some carefully designed regulatory changes were implemented. Therefore, the main focus of our presentation today is on those areas where we feel we can move forward on a cooperative basis.

I want to stress that these recommendations have been unanimously endorsed by all represented companies operating fuel cycle facilities licensed under Part 70.

I would like to briefly summarize the major elements of our recommendations. First, while we opposed major changes to Part 70 in the past, we proposed that a focused and performance-based addition to the existing rule could potentially be beneficial. We are willing to work with the Staff to achieve that change. Second, and more particularly, we could embrace a specific change to the existing Part 70 that would require licensees to address plant safety hazards using an integrated approach.

Licensees could either perform a reasonable scope integrated safety assessment, ISA, as we expect most will do, or use an acceptable alternative approach determined to be acceptable by the industry and the NRC. The change would explicitly provide for both options.

The change should also include:

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measurable safety program performance objectives; two, reference to acceptable industry practices for performance of the ISA; and, three, the principle that individual licensees will determine what, if any, changes in existing facilities, equipment or controls are needed using a graded approach based upon the results of the ISA or alternative. Many of the Part 70 licensees have efforts under way or planned which they believe could satisfy such a rule change.

Third, until the ISAs or an acceptable alternative are completed and the results available for review, it is premature to decide what, if any, changes may be required in existing fuel, facilities or existing programs. Indeed, we feel the necessary safety programs are already in place at our facilities.

While the ISAs may help us adjust the implementation of those programs commensurate with risk, we would not expect the ISAs to disclose the need for significant new programs. Thus, at this stage, we believe that NRC and industry resources could be saved by suspending work on the draft rule, standard review plan and standard format and content guide. These draft documents contain significant new programmatic criteria in areas such as quality assurance, maintenance, chemical safety, fire protection, training and human factors. The need for such changes should be driven by the ISA results on an individual

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plant basis.

Completion of these guidelines and documents in their current form will create pressure to implement costly changes before the need for those changes is demonstrated. Indeed, this is already occurring. The Staff has acknowledged that it is encouraging licensees to follow the draft standard review plan and the draft standard format and content guide in their license renewal applications and is granting a more limited term license renewal that is five years rather than 10 years where licensees have not followed the draft guidance. We are very concerned that the Staff appears to be requiring licensees to follow draft guidance as a condition of receiving 10-year license renewals.

We are equally concerned that the draft guidance might become de facto inspection guidelines or acceptance criteria. Our recommendations would produce a more consistent application of requirements among the Part 70 licensees.

Third, we believe that the Staff and industry should focus their resources on working out the details related to ISA methodology, scope and content and on the definition of acceptable alternatives. The NRC's draft guidance on performing an ISA, draft NUREG-1513 and the American Institute of Chemical Engineers' recommendations on which it is largely based are an appropriate starting point.

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We would like to meet with the Staff to begin this process.

Finally, our proposal to establish a requirement for the performance of an ISA or an acceptable alternative approach does not mean that the ISA documentation or results should be incorporated into the safety basis of our facilities or formally submitted to the NRC. To do so, in our view, necessitates significant changes in the format and

content of our license applications and represents a fundamental change in the way our facilities are regulated. ISA documentation and results would, however, be available for Staff review at each licensee's facility.

Now, in summary, we recommend that our mutual efforts be refocused on, one, Staff and industry discussions to work out the ISA methodology, scope and content and the parameters of alternative approaches and, two, a limited addition to the existing rule that would require licensees to continue to address safety hazards using an integrated approach through an ISA or an acceptable alternative. The change would define the quantitative safety performance objectives to be achieved.

We urge the Commission, however, not to finalize a change to the existing rule until there is a clear understanding and consensus on the details of the ISA or alternatives.

I would now like to ask Mr. Vaughan to elaborate

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on the points I have just highlighted.

MR. VAUGHAN: Good morning, Chairman Jackson, Commissioner Rogers, Commissioner Dicus. The purpose of my discussion here is to provide some additional detail on the unanimous recommendations of the Part 70 fuel operators and I would like to begin by discussing some of our suggestions.

As a beginning point, it is essential that the regulation contain well-defined safety performance objectives that would be used to evaluate the potential facility specific hazards and safety consequences that should be of concern to the NRC and industry. As directed by the Commission and based on our history of interacting with the Staff, we stand ready to work with the Staff to develop performance objectives appropriate for our operations. These criteria would define the underlying objectives of any facility's safety program.

COMMISSIONER ROGERS: Could you give us any examples of such objectives?

MR. VAUGHAN: That is some of my next statement to discuss those and where we have some common understanding, I think.

The Staff has suggested certain criteria or consequences of concern that may be reasonable for inclusion in a proposed rule and are worthy of further consideration. Those criteria include compliance with Part 20 limits in

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non-accident conditions, avoidance of criticality, thresholds for doses to members of the public, intake of soluble uranium and exposure to hydrogen fluoride.

In NUREG-1513, the Staff has stated that, and I quote, "Appropriate controls must be in place to provide reasonable assurance that any accidents identified in the ISA having these consequences will not occur."

CHAIRMAN JACKSON: Repeat that?

MR. VAUGHAN: Repeat it?

CHAIRMAN JACKSON: Please.

MR. VAUGHAN: "Appropriate controls must be in place to provide reasonable assurance that any accidents identified in the ISA having these consequences will not occur."

We agree and we feel that it is essential that the rule itself contain measurable safety performance objectives.

Next slide.

[Slide.]

MR. VAUGHAN: With safety performance objectives clearly defined, and the ISAs complete, the results should enable licensees to determine whether adequate controls are in place to prevent or mitigate credible events and accidents that, based on a realistic evaluation, could produce any of the consequences described above. If

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credible event or accident sequences are examined and determined not to be reasonably capable of producing such consequences, no further consideration would be required.

Of course, for these events or accidents of lesser significance, would continue to be prevented and mitigated through the existing customary safety programs.

Where an accident or event could produce consequences exceeding those specified in the rule, however, the licensee would evaluate and document the controls relied on to prevent or mitigate the incident and take additional measures if necessary. Licensees would be permitted to take into account the anticipated likelihood of an event or an

accident as well as the potential impacts in the process of grading its safety program.

Using these criteria, one approach to grading would be to classify structures, systems and components based on safety significance and to apply controls along with assurance measures commensurate with that classification.

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[Slide.]

MR. VAUGHAN: The regulation should reference industry practices that may be used in the performance of an ISA. The 1992 American Institute of Chemical Engineers' Guidelines for Hazard Evaluation Procedures, Section Edition 43

with Work Examples, is frequently referenced in NUREG-1513 and provides reasonable approaches to performing ISAs. Other methods may also be acceptable.

The regulation should also acknowledge that licensees are performing hazards analysis under other applicable requirements such as the Occupational Safety and Health Administration's Health and Safety Management Regulations and the Environmental Protection Agency's Risk Management Program Regulations. These efforts should be acceptable means of meeting ISA requirements for hazards within NRC's jurisdiction, namely hazards associated with radioactive materials, nuclear criticality and those chemical hazards that could affect nuclear safety.

Draft NUREG-1513 states that NRC's ISA guidance is intended to be consistent with the requirements of OSHA and EPA, so long as the ISA addresses radiological nuclear criticality and certain chemical hazards, for example UF6 releases, not covered under other regulations. In this regard, we agree with the Staff.

There are various efforts under way at some fuel facilities to re-evaluate and/or redocument the current safety basis for their operations. Some of these ongoing efforts may fulfill the requirement of an ISA. In other cases a licensee may feel that it has an alternative approach or program for assuring itself of and demonstrating

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to the NRC the safety of its operations.

The rule should provide flexibility for licensees to offer alternative approaches for the NRC's consideration.

Such approaches might not constitute a hazards analysis but could still provide the NRC with increased confidence in safety.

CHAIRMAN JACKSON: Can you give examples of such an alternative approach and how it would then tie in with the prior recommendations where you talked about the integrated approaches having to do with consequences of concern and how you would migrate from such an example of an alternative to that that would be different than what would be in the ISA?

MR. VAUGHAN: I believe that the guidance in the AICHE Handbook is probably the most currently used. Some of the facilities that are with our committee have indicated that there may be some other options and they might want to comment on that maybe when we finish our presentation, but I think generally we go along that line. It's just that we would like to reserve the right to be able to use some different techniques if those are appropriate and are acceptable to both parties.

CHAIRMAN JACKSON: Okay --

MR. BISHOP: We haven't identified them now. We think that may come out of the process.

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CHAIRMAN JACKSON: Commissioner Rogers.

COMMISSIONER ROGERS: Yes. I didn't want to let you go either.

I think the really important aspect of ISA is the "I" -- the "integrated" and if one is looking at alternatives, do those alternatives scrap the integration, total system view of the safety analysis or do they differ in detail but not spirit from an integrated safety analysis that might be acceptable under the OSHA and AICHE approaches?

In other words, are you saying that you think the alternatives -- I mean just to put it very bluntly, do you think an acceptable alternative is one which does not do an integrated analysis of the facility?

MR. VAUGHAN: I believe that the "integrated" word or the integrated aspect is present in all of the options that we have talked about. It's one more in the mechanics

of how you do that and the mechanics of how you record results and maintain those results.

COMMISSIONER ROGERS: All right.

CHAIRMAN JACKSON: Do all of the alternatives allow the graded approach to implementation that the ISA as presumably you and the Staff understand allows?

MR. VAUGHAN: I believe so.

CHAIRMAN JACKSON: Because it strikes me that if

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(a) the focus does not remain on an integrated safety look, as Commissioner Rogers has pointed out, and (b) does not allow for consistent understanding and approach in terms of a graded implementation if that were what were adopted, then what you are really posing is to leave things at the status quo, it strikes me.

MR. BISHOP: I believe we think those two principles, those two elements of the ISA, would be critical to any approach that is considered.

Part of our concern is that we know we don't know everything we need to know and that is what we would intend to work with the Staff to develop these thoughts further and we may come up with something that we don't now envision.

CHAIRMAN JACKSON: Okay, so these are new things that the Staff has not heard about yet? Is that what you are telling us?

MR. BISHOP: Our recommendation today? Yes, ma'am.

CHAIRMAN JACKSON: I see. What have you guys been discussing for five years?

[Laughter.]

MR. BISHOP: We may need to extend the time for the briefing.

MR. VAUGHAN: Let's see if we could have the next slide.

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[Slide.]

MR. VAUGHAN: The rule should specify that upon completion of the ISA or acceptable alternative each licensee will determine what if any changes in existing controls are needed to provide reasonable assurance that the numerical safety performance objectives are not exceeded and will implement such changes in a timely manner.

It should also specify --

CHAIRMAN JACKSON: Does that mean with all deliberate speed?

MR. BISHOP: Yes, ma'am.

MR. VAUGHAN: Yes. It should also specify that the ISA results indicate that relaxation of some controls or reallocation of resources is justified, that the licensee may do so in accordance with any applicable license amendment or commitment change procedures.

The Staff has indicated that safety program changes should be based on the results of an ISA. However, the preliminary draft provisions to Part 70 and the draft SRP and SF and CG prematurely include detailed new safety program criteria.

Among these new criteria are criteria for implementation of very rigorous QA programs following the guidance of NQA1, which is not justified by the potential source term and risk associated with Part 70 facilities.

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New criteria for much more formal maintenance programs, criteria for reactor style training programs using formal systems approach to training methodology, prescriptive new criteria on criticality safety, fire protection, and human factors programs and criteria for expanded reporting requirements.

We do not believe that the NRC should presuppose the need for programmatic changes before completion of the ISAs or acceptable alternatives.

The inclusion of these changes in the preliminary draft rule and in the draft SRP and SF and CG are based upon the Staff's assessment of prior industry events, some at Part 70 facilities and some at other types of facilities.

That assessment does not take into account the current status of the industry's operations as shown by the results of the recent NRC-conducted plant performance reviews at three Part 70 facilities, each of which noted a good level of safety performance.

The Staff's analysis of prior industry experience is discussed in Attachment 3 to their paper entitled, "Improving the Regulation of Fuel Cycle Facilities." That is dated November the 7th, 1995.

We have reviewed the Staff's analysis and we are providing an attachment to this presentation which discusses the results of our review and, as asked earlier, we have

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asked that that be included in the transcript of the meeting.

Our basic conclusions are that the events evaluated by the Staff highlighted the need for improvements in our operations. For those events discussed by the Staff which we have specifically analyzed there were existing substantial margins of safety and conservatisms that continued to assure public safety.

Though instances of the loss or degradation of a single control criticality safety parameter have occurred, the double contingency principle and conservative assumptions built into the criticality safety analysis have served effectively to prevent accidental criticality events.

Finally, lessons learned as a result of such events as well as continuing efforts to make cost effective improvements in our program have provided the industry with an even larger margin of safety than existed several years ago.

These improvements it seems have gone unrecognized.

SECY 96-079 suggests that to address the industry's concern with the programmatic aspects of the draft rule it could be revised to require a "single safety program" and to refer to the various individual safety programs, for example, chemical safety, training, and human factors, as "measures" rather than individual programs.

It is important to make clear that whether such programmatic changes are included in a rule, in guidance documents, implemented through inspection activities, or as the Staff suggested, redefined as measures to be included in a single safety program, they are premature and not justified at this juncture.

They do not provide clear, cost effective and measurable safety improvements.

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[Slide.]

MR. VAUGHAN: The rule change we propose would require that the ISA results be documented and available for review by the Staff.

This would include a discussion of the controls relied on to assure that the consequences of concern are not exceeded and the basis for concluding such controls are adequate. A formal submittal to the NRC of an ISA report would not be required.

More importantly, the ISA should not become part of the license which may only be changed through a codified change process.

In accordance with our configuration control programs when significant plant changes occur or are planned, licensees would be required to review and update

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the ISA and to implement any new controls that may be necessitated as a review of that re-review and updating of the safety basis.

Incorporation of the ISA itself into the license would necessitate significant changes in the current license application format, dramatically expanding the description of the plant site, facilities, equipment, processes, and controls which would form the basis of license.

In this regard we note for example that the certification applications recently submitted by the United States Enrichment Corporation under 10 CFR Part 76 criteria, which is very, very similar to those in the drafts of Part 70, including the Standard Review Plan and Standard Format and Content Guide included over 1000 pages per plant dedicated to site, facility and process descriptions and safety or accident analysis.

This is a very significant administrative burden which would produce no measurable improvement in the safety of Part 70 facilities.

Next slide. Well, that is the correct one up there now.

Finally, to assure that future modifications to fuel facilities operations caused by regulatory change are based on strong health and safety considerations and are appropriately cost justified, we repeat our strong request

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for the inclusion of a backfit provision in the revised Part

Modifications resulting from new or different NRC requirements or Staff positions must be subjected to an appropriate backfit analysis before implementation. This provision would be consistent with NRC regulations governing the gaseous diffusion plants and commercial reactors.

Thank you for your consideration and deliberation on this very important point this morning and I'll give the microphone back to Mr. Bishop.

CHAIRMAN JACKSON: Before you do, there was I am told a near-criticality event at GE-Wilmington some years ago and the question I had was was there a double contingency built in in that particular case?

MR. VAUGHAN: There was. The double contingency program or that approach was in place in that particular situation.

CHAIRMAN JACKSON: And what does near-criticality mean then in that particular situation?

MR. VAUGHAN: Near-criticality as best I can tell in that case simply says that one of the contingencies was lost and so we were in a position that we had then a single contingency.

CHAIRMAN JACKSON: Okay. Commissioner Rogers.

COMMISSIONER ROGERS: Well, a couple of questions

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then of general observation.

How would an ISA help you to decide on what training programs should be in place to keep people over the years alert to criticality questions and how to avoid them?

It does seem to me that in various parts of our industry, not only in your applications but others, that criticality training and awareness is in danger of disappearing -- let's put it that way -- and that as time goes on, while it may be certainly possible to train up new people to carry out routine operations in the plant, the basic understanding of how something might lead to a criticality could get lost if your training programs don't address that, and it seems to me that's a common feature to all of these facilities and I don't know why something like that has to come out of an ISA.

MR. FICI: Let me see if I can respond to that question.

First of all, Commissioner, I think the inherent characteristics of the processes in our facilities do protect against criticality events, but an integrated safety assessment I think would point out where appropriate engineered controls could provide even greater margin to safety or, if that wasn't practical, where administrative controls are also appropriate, and that is where in the application of administrative controls you would focus a lot

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of your training.

But in many of our facilities we conduct periodic -- I believe in our facility it is every two years -- criticality safety training with all of our employees so I don't agree with your statement that that kind of training is disappearing.

COMMISSIONER ROGERS: Well, it may or may not, but I am just telling you that throughout the industry the background that people come into the industry is changing and an understanding of criticality events and what criticality is is disappearing.

We have seen a number of instances in other situations where people who have been moving things around for example just didn't understand the potential for criticality in some fuel storage situations.

I don't agree with you that this is not an issue.

I think it is an issue and what we are talking about is a general issue for the whole industry. You may have ongoing training programs at your particular site, but we are talking about a rule now that involves everyone and I don't think that should be based on what may or may not be happening at one licensee's facility.

MR. VAUGHAN: I would like to add a little to that because I think there is a lot of benefit from the ISA and your observations are correct. The number of professionals

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that are entering the industry today that are trained in

criticality safety are on the way down, so they are a resource that is very difficult to come by and that is of concern to us and we are working at it, as I am sure you are.

But if we get to the ISA, I think one of the beauties of the ISA is, number one, it does give you an integrated look so that you look at all of the components of safety and you also have an opportunity to rank those so you know what is important.

One of the things that happens to us today is the rules are the requirements are the rules are the requirements and they all generally have equal weight, so you are faced with trying to train, for example, if you are looking at training, you are faced with trying to train everybody to everything to the same degree of detail and that is a very difficult challenge.

Under the concept of the ISA, we would be looking at it in an integrated fashion. We would come out with the ranking so we would know where the most serious risks are, where the highest probabilities are for things to happen, and so we would get a hierarchy of things that we should be addressing and that way if it is training or whatever the programmatic element is that we need to have that assurance, then we can add those things --

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COMMISSIONER ROGERS: Oh, yes.

MR. VAUGHAN: -- in an graded, weighted approach and I think we can do a better job of implementing those things under those kinds of conditions than we can today so I think the ISA actually will help in that regard.

COMMISSIONER ROGERS: Oh, I would agree with that, but it seems to me we are talking about a floor here now of training that I think, a commonality that might be appropriate for everybody and then in addition to that the local application of these considerations is of course vitally important so I would agree with you there.

Well, the general observation is that it does seem to me -- I hadn't seen your set of slides here before I came in -- and the last word that I understood was that you folks were basically opposed to a rule and it seems to me that now that is not the case, that you have begun to come to a conclusion that there might be some virtue to a rule provide that -- and then some conditions have to be met.

So I do think that in response to the Chairman's question of what have you been talking about for five years, a lot of that has been don't have a rule and I think now you have come to a recognition that maybe this is the time to consider a rule and consider it seriously and get on with the job of doing something constructive and I wonder why, for example, now that you have come to a conclusion that a

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rule might be in your best interest, why don't you file a petition for rule-making that states what it is you want to see in a rule instead of trying to tinker with something that the Staff has put together that you are not very happy with?

MR. BISHOP: Absolutely, and I should have apologized earlier for springing these slides, this information, this approach on you with no notice.

CHAIRMAN JACKSON: You should.

MR. BISHOP: Yes, ma'am.

[Laughter.]

MR. BISHOP: Let me just say in my own modest defense, that's because we were hammering it out as late as yesterday --

COMMISSIONER ROGERS: This morning.

[Laughter.]

MR. BISHOP: -- but we did finish it yesterday evening but we do think there is merit in going forward.

We do think, however, it is important to make sure that we agree first, before we establish what the rule should say and require, what is the heart of it, what is the principles that we are trying to achieve, what is the scope, format, content of the ISA. How would it be used? How would it be developed? Are there acceptable alternatives and what would the parameters of them be?

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We think it is much more important to ensure that we understand what we are trying to accomplish through that rulemaking than begin the process of rulemaking before that stabilized.

COMMISSIONER ROGERS: Well, that's what I am suggesting that you do.

MR. BISHOP: Certainly.

COMMISSIONER ROGERS: Put that down and come to submit a petition for rulemaking that says what it is you think it ought to be and why.

Then that starts a process. It's a public process that everybody can observe. It's not in secret.

MR. BISHOP: Yes, sir.

COMMISSIONER ROGERS: And come to grips with the problems. Right now we seem to be not making an awful lot of progress when the Staff presents to us six different alternatives than perhaps none of which are the best and I would encourage you to get on with the job and -- having come to the conclusion that a rule is probably the best thing to do.

MR. BISHOP: Our approach -- we do know how to prepare petitions for rulemaking. Our approach however is to begin, with your concurrence to work immediately with the Staff to develop the concept of the ISA and make it real.

CHAIRMAN JACKSON: I think you need to get the

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petition in if you do it, because, you know, you have been talking for five years and my point of view is that you can't just keep going on and on and decide you are going to get into the morass of, you know, we have to agree on all the details of what an ISA has to be before you get on with the fundamentals of what it is supposed to accomplish and so I would disagree with that, but if you would like to see a rulemaking that has certain baseline principles involved, I agree with Commissioner Rogers that you need to go ahead and submit the petition.

I do not think it is acceptable to get into a long-winded, let's negotiate again, so Commissioner Rogers will be long gone, Commissioner Dicus might be long gone, I might be long gone, and then you are starting it over and over again, and that it a piece in terms of regulatory process that I think is unacceptable, and so, you know, if we want to make a move we make the move and it is not something that should take five years to come to closure.

MR. BISHOP: Agreed.

CHAIRMAN JACKSON: And that you don't get into the morass of we're going to negotiate every little piece before we come forward because if you don't do that, then we're going to move forward anyway, considering the alternatives or something that the Commission itself might decide that it wants to do.

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So Commissioner Rogers has also opened a window that I agree with but I am saying to you that it's not one that is going to be based on we're going to get agreement on all of these details before we move forward because we are not going to wait that long.

MR. BISHOP: Yes, ma'am. I understand.

CHAIRMAN JACKSON: Commissioner Dicus, did you have comments?

COMMISSIONER DICUS: No, they have been asked.

CHAIRMAN JACKSON: So thank you --

MR. BISHOP: Yes, ma'am. We thank you.

CHAIRMAN JACKSON: -- for coming. It's been very informative and stimulating and I think that I have already delivered the message to you and it has been an interesting and excellent presentation. Thanks -- we are adjourned.

I'm told the meeting is not adjourned. I didn't realize that the representatives from DOE were planning to make comments. If that is true, I ask you to come forward and make what comments you would like to make at this time. Identify yourselves as you do that.

MR. VIETH: Good morning, Madam Chairman, Commissioner Rogers, Commissioner Dicus. My name is Don Vieth and I am with the U.S. Department of Energy's Richmond Operations Office. My position is the Senior Technical Advisor for the Tank Waste Remediation System Program

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Office. The mission of the Office is to establish the system necessary to retrieve, process and convert to a stable solid suitable for disposal the 240,000 metric tons of process chemicals mixed with about 250 megacuries of radionuclides contained in 177 tanks at Hanford.

Since August of 1994, one of my responsibilities has been to examine and outline the means by which the remediation of the tanks can be achieved through privatized operations. The Department has determined that it is possible to make this fundamental change. It has established a two-phased approach and it has issued a request for proposal. Phase I will be initiated in August of 1996, that is just next month, with the signing of the contracts for services for the demonstration scale facilities. Phase II is planned to be initiated in 2004 for

the procurement of services for the full production scale facilities.

The privatization of the TWRS will result in the purchase of a service on a fixed-price basis from a contractor-owned, contractor-operated facility. DOE will provide highly radioactive feedstock and receive vitrified waste suitable for disposal in return.

For the TWRS privatization, our principal tenet from the outset has been the intention of transitioning to external -- that is, non-DOE -- regulation of the

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privatization contractors. Environmental regulatory oversight will be by state agencies. The occupational safety -- for occupational safety, the Department is looking to the Occupational Safety and Health Administration for regulation.

DOE has sought external radiological nuclear safety regulation by NRC but both agencies have concluded that the NRC currently does not have the capability to execute their role in a demonstration phase of the TWRS privatization consistent with the schedule of the consent order for remediation of defense waste. The radiological, nuclear and process safety management of the contractors for the demonstration phase will be directly regulated by DOE in a manner defined by the terms and conditions of the contract. In anticipation that NRC may regulate the production phase that is beginning in 2004, DOE intends to regulate in a manner consistent with NRC principles and concepts.

The TWRS privatization program has chosen to base its regulatory program on an integrated safety management approach. This approach extends the compliance basis for demonstration of safety by DOE contractors to a clear responsibility by the contractors for safety on a continuing basis across the span of contractor activities.

Consistent with applicable laws and within the

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context of a thorough hazard analysis, the contract, subject to a DOE sanctioned process, identifies a set of standards or safety requirements and standards tailored to the contractor's activity. The contractor certifies that when approved by DOE and implemented by the contractors, the set of safety standards covering the contractor facility will provide adequate safety, complies with applicable regulations and conforms to the DOE's sanctioned top-level safety principles. Among the top-level safety principles are the IAEA basis for safety principles for nuclear power plants that is 75 NSEG 3. The principles also appear generally in the NRC's proposed method for regulating major material, that is NUREG-1324.

Along with the concept for the proposed amendment to 10 CFR 70, the TWS regulatory program is based on an integrated safety management. The benefits to be realized from the integrated safety management include an integrated approach to safety across the full set of hazards, radiological, nuclear and chemical process safety and plant safety, incident to the contractor's activities. It provides an integrated evaluation basis for balanced control of hazards, emphasizes the contractor's responsibility and ownership for integrated, continuous safety of the contractor's activities, not just compliance with a set of requirements imposed by law or by the DOE. It provides

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improved certainty for regulation of DOE, the Tank Waste Remediation privatization contractor and provides in combination with privatization incentives for effectiveness and efficiency.

During DOE regulation of the TWRS privatization demonstration phase, NRC modification of its rules with knowledge of lessons learned from the DOE regulatory experience from TWRS to emphasize integrated safety management is expected to enhance both DOE's and NRC's ability for the seamless transfer -- that is, if it occurs -- to the regulation of the TWRS privatization contractor. That is, going from DOE to NRC.

In addition to efficiencies that could be achieved by the two agencies, the continuing stable integrated safety management regulatory bases are expected to enhance contractors' efficiencies and effectiveness. The TWRS regulatory program for privatization contractors supports the principles of integrated safety analysis, planning and management in NRC's 10 CFR 70.

Thank you.

CHAIRMAN JACKSON: Thank you.

MR. BURTON: I think Mr. Wooley was supposed to speak first in the order of things but, if he isn't here, I'll go ahead.

Good morning, Chairman Jackson, and Commissioners

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Rogers and Dicus. I thank you for the opportunity to be at this meeting. My name is Harold Burton. I am Senior Vice President at SCIENTECH, Incorporated. We are a technical services company specializing in nuclear safety.

I participated as an invitee to the November 1995 workshop and my discussions are a matter of record in that discussion. My reasons for speaking today are two-fold. From 1987 to 1990, I led the design, construction and licensing of the new AGU fuel fabrication facility and Category I storage facility for UNC Naval Products. The licensing was performed to, I would call it, again newly-revised Part 70 regulations because they were under continuous revision. While this was a license for a new facility at an existing site, it was treated as a license amendment but a new SAR was prepared for the facility so we were doing it in a somewhat unusual fashion.

We received a prompt review from the NRC and also the amendment to the license to the NRC. We did that by use of very skilled staff and in the form and also carefully following the guidance that we received from the NRC in order to meet our schedule requirements. Much of that guidance was in the form of discussions and the requirements of the regulations were sometimes confusing and somewhat difficult to follow. This increased our concern over the timely approval of our application and our schedule was very

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tight.

Had we had a standard review plan and a standard format and content guide and clear guidances to the safety analysis requirements and meeting necessary and sufficient conditions for the application of standards to the facility design, I would have felt much more confident in having a degree of control over our amendment application and response to the questions.

As it was, we worked closely with the Staff and achieved the objective but in a fashion which was subject to more individual interpretations than I would have preferred. Currently, my company, SCIENTECH, Incorporated, provides licensing services to applicants including individuals from the Department of Energy for materials licenses. We are involved in a number of projects which, I believe, need clear guidance and the best guidance is succinct, clear regulations.

Many of these projects have a great deal of uncertainty because of the question, who will regulate them and to what regulation. One of the reasons for this uncertainty is the uncertainty of the Part 70 regulation changes. It is in our interest and that of our clients to have a single set of regulations for facilities, particularly for new facilities, regardless of whether they are built on DOE property or on private property.

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Based upon these stated reasons and the statements that I made in November, I am in favor of a comprehensive change to the Part 70 regulations. I believe the draft is good. It can be improved with explicitly defining safety performance criteria and it contains a number of safety performance criteria and some can be added.

I would like the NRC, DOE and current licensees to work together to finalize the draft regulation. The requirements of applicants with sufficient quantity of materials to have a criticality should be significantly different from those applicants with very small quantities of nuclear materials.

The scope of the integrated safety analysis should be defined as a part of finalizing the regulation. Also, the regulation must have a standard format and content guide and a standard review plan for applicants. Therefore, I would urge the Commission to pursue alternative five as outlined by the Staff. However, I also believe that the current fuel cycle licensees will benefit little from the new regulations. They have a significant evidence of safety from their current operations.

Therefore, I would urge the Commission to allow a phase-in period for the current licensees, something like five to seven years, for them to adhere to the new regulations. In that manner, I believe they could use their

existing staff to prepare their ISA and minimize the cost impact of the regulatory change.

Thank you for the opportunity to speak.

CHAIRMAN JACKSON: Thank you very much. I see people appearing at all times.

Let me just ask this question. Are you

Mr. Wooley?

MR. WOOLEY: I am Mr. Wooley.

CHAIRMAN JACKSON: All right, Mr. Burton, you have spoken. Mr. Vieth, you have spoken. Is there a Mr. Earl Carnes here?

MR. WOOLEY: No.

CHAIRMAN JACKSON: Okay, so, once we hear from you, there are no other people appearing from the woodwork; is that correct?

MR. WOOLEY: Not that I know of.

Good morning, Chairman Jackson, Commissioners Rogers and Dicus. On behalf of the United States Enrichment Corporation, I thank you for the opportunity to participate in this meeting. USEC's chief executive officer, Nick Timbers, has asked me to give you his regards.

My name is Rob Wooley and I am the manager of nuclear regulatory assurance and policy. My reasons for wanting to speak to you today are two-fold. First, USEC is in the process of applying for a certification for gaseous

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diffusion plants in accordance with 10 CFR Part 76. Our experience with this process to date has provided some valuable lessons learned relevant to the Commission's deliberations on Part 70.

Second, passage of the USEC Privatization Act in April established our proposed AVLIS plant as a Part 70 facility. We intend to apply for a license for AVLIS for next year. As a result, it is in our interest to participate in any efforts to improve the Part 70 licensing process.

Our recommendations for the Commission are focused in these areas: Clarity and defining of the requirements and detail to be provided in applications filed by new licensees, adoption of clear performance criteria and application of new requirements based on cost/benefit considerations.

At a Commission meeting held last March, Dr. Carl Paperiello made an important point about USEC's application for certification of its gaseous diffusion plants. He said that, and I quote, "Had we to do it all over again, I," that is Dr. Paperiello, "would have provided written expectations to the U.S. Enrichment Corporation."

As reflected in Dr. Paperiello's statement, both the NRC and the applicant recognized the importance of establishing clear, unambiguous requirements. Although Part

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76 was specifically developed for certification of the operating Paducah and Portsmouth gaseous diffusion plants, its implementation proved unpredictable.

Our original certification application involved over six months of intense effort and was based on our understanding of the requirements of 10 CFR 76 supplemented by established guidance documents used throughout the fuel cycle industry. After it was rejected, we spent another four months meeting with the NRC Staff and revising the application based on those meetings.

We have now submitted three revisions and have answered more than 2,000 questions. Our experience highlights the lack of predictability in the process. While certification is unique to the GDPS, our experience is an example of what could be expected were the draft Part 70 guidance applied to existing licensees. From our experience, we offer three recommendations for improvement that should be made in the Part 70 licensing process.

One, predictability. New facilities or those coming under NRC regulation for the first time will enjoy a more predictable process if NRC first defines what must be addressed in an application and to what detail. Our first application was rejected in part because it lacked sufficient detail.

For the process to be predictable, both the

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applicant and the NRC Staff must work toward a common set of requirements to a necessary level of detail. Precise definitions of requirements in a rule coupled with clear guidance on the level of detail and acceptable methods for

satisfying those requirements will greatly enhance the predictability of the process. We hope to work with the NRC to improve the predictability of the AVLIS licensing process.

Two, justify changes. During the certification process, many of the draft Part 70 requirements were applied to the GDPs. We are making hardware and software changes at the two gaseous diffusion plants amounting to approximately \$150 million. While these changes will unquestionably improve the margin of safety at the plants, there has been no systematic examination of the risk reduction associated with the changes, let alone a determination that these changes are the most beneficial changes. Both the NRC and the applicant would be best served by adoption of a requirement that proposed changes be justified on a risk reduction basis before imposition.

And, third, performance criteria. Evaluation of changes as well as predictability of the process will be greatly enhanced by adoption of clear, explicitly defined safety performance criteria against which the plant is tested. Such criteria are available for reactors in 10 CFR

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100. Performance criteria are needed as a basis for determining whether plant changes are warranted and for the application of quality assurance measures. Criteria are needed to better define what constitute an adequate level of protection of plant employees and the public.

We support the industry's recommendation that the NRC require either a reasonably scoped integrated safety assessment or an acceptable alternative approach. The integrated safety assessment proposed by the industry could serve as the basis for examining the safety benefit of proposed changes. We would like to be involved in any NRC discussions to define the methodology, scope and content of such ISAs as well as the parameters of any alternative approaches.

We are now in the process of performing an ISA using the draft NUREG-1513 guidance as an integral part of the current design process for our proposed AVLIS plant. NRC Staff has expressed an interest in meeting with us to discuss our approach toward this ISA and we look forward to cooperating with them in this area.

In summary, we encourage the NRC and the industry to learn from the GDP certification experience and to strive toward a more predictable process for applying NRC regulation to new facilities and those coming under NRC regulation for the first time. In addition, we encourage

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the NRC to adopt clear safety performance criteria and to consciously weigh the costs and safety benefits on applying new requirements to existing facilities.

Thank you.

CHAIRMAN JACKSON: Thank you.

COMMISSIONER ROGERS: Just a question for Mr. Vieth. In your integrated safety management program, do you do quantitative safety analysis or are these some kind of a mixed collection? In other words, how quantitative are your safety assessments?

MR. VIETH: We haven't started this yet. We will be adopting, for the most part, the concept used by the Occupational Safety and Health Administration with regard to the preliminary hazards analysis but there will be quantitative estimations of the risk to the public and to the workers from exposures and so on. I expect both deterministic and probabilistic.

COMMISSIONER ROGERS: Thank you.

CHAIRMAN JACKSON: Thank you.

I think what we are coming out of this with is clearly an integrated safety approach is the key that undergirds whatever is done. I think that removing -- and I think the Commission would agree, that this is the undergirding -- and removing an overly prescriptive approach is important. Stability and predictability of regulation is

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important. Recognition of the differences between existing facilities and new ones in either regulations themselves or how they are implemented is important. The quantities of special nuclear materials are important, that performance criteria really need to be laid out and cost/benefit justifications have to exist and that as part of all of this that a risk-informed approach is very important.

So I think I will end as I ended before, which is the following:

First, I think we are moving along the line and we invite and await any petition that any group would like to submit that moving along the line of either changes to Part 70 or a new Part 70 is not something that can be unduly dragged out again. As such, then, it cannot hinge on detailed negotiations with respect to what an integrated safety approach is. That is something that has to be worked out along the way and particularly with respect to implementation.

The final comment is that I would not like to disabuse the NRC Staff and therefore the industry that would be subject to this from clarification and of existing guidance. I think it is important that any clarification and solidification and consolidation of existing guidance that can be done should be done but without de facto adding new regulatory requirements in the process of doing that.

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I think, Mr. Wooley, your comments speaking from a comment of Dr. Paperiello's that had there been more standard guidance in place as to what was required, et cetera, perhaps in the form of a standard review plan, would have been helpful, but I think USEC has been the learning vehicle relative to applying requirements to existing facilities and I think all of us have come out of that with a better appreciation for what could be done differently.

So, having said that, unless there are other people in the woodwork, generically described, the meeting is adjourned.

[Whereupon, at 11:56 a.m., the briefing was concluded.]