

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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BRIEFING ON STATUS OF NUCLEAR MATERIAL SAFETY AND
SAFEGUARDS (NMSS) PROGRAMS - WASTE SAFETY

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Nuclear Regulatory Commission

One White Flint North

Rockville, Maryland

Monday

March 03, 2003

The Commission met in open session, pursuant to notice. Chairman Richard A. Meserve presiding.

COMMISSIONERS PRESENT:

GRETA J. DICUS, Member of the Commission

NILS J. DIAZ, Member of the Commission

EDWARD MCGAFFIGAN, JR., Member of the Commission

JEFFREY MERRIFIELD, Member of the Commission

(The following transcript was produced from electronic caption
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Commission.)

STAFF AND PRESENTERS SEATED AT THE COMMISSION TABLE:

Secretary

General Counsel

Mr. William Brach, Director, Spent Fuel Project Officer

Ms. Margaret Federline, Deputy Director, NMSS

Mr. John Greeves, Director, Division of Waste Management

Dr. Carl Paperiello, DEDMRS

Dr. William Travers, EDO

Mr. Martin Virgilio, Director NMSS

P-R-O-C-E-E-D-I-N-G-S

CHAIRMAN RICHARD MESERVE: Good morning. The Commission is meeting this morning to discuss the status of activities in the nuclear waste program. Since the last briefing, a number of events have occurred that will significantly impact the activities of the Commission in this area. Foremost, of course, was the completion of Congressional action concerning a potential geological repository at Yucca Mountain. Although this project is the subject, as all of us know, to many legal challenges, the size and complexity of the review of the license application for the repository will be a considerable challenge.

In addition, last year the Commission signed a memorandum of understanding with the Environmental Protection Agency to address the finality of decommissioning for NRC licensees. It is hoped that this MOU will provide a stable and predictable environment with respect to EPA's CERCLA program and how it intersects with our activities. This was an accomplishment.

The Commission is appreciative of the contributions made by the staff in the management of the waste program. This is an area where, as Yucca Mountain indicates, there is a large amount of public interest. And this is an area that's an important one to the Commission. We therefore look forward to this morning's briefing in which we'll discuss the accomplishments and challenges that are before us. With that, Dr. Travers, you may proceed.

DR. WILLIAM TRAVERS: Thank you, Chairman. Good morning. Today the staff, as you've indicated, will brief the Commission on its nuclear waste activities. These activities are certainly diverse and include, but are not limited to, high level waste, low level waste, radioactive material transportation,

spent fuel storage and transportation, and decommissioning. They present some unique challenges for us. All illicit significant stakeholder interest and challenge us to communicate effectively.

Many of the waste programs also share the common challenge of our selection of realistic and appropriate exposure scenarios for long-term safety assessments.

Finally, there is a large international dimension to waste activities. Spent fuel transportation and disposal are frequent topics in our meetings with other countries. And we are very involved in international standards setting work in the waste area.

Many countries who are proceeding to develop geologic repositories face the same challenges that we do in seeking a robust technical basis for our decisions and in developing effective approaches for stakeholder involvement in our regulatory programs.

For economy, our presentation today will focus on spent fuel management and disposal and decommissioning of sites. But we are prepared to address any of the issues that you wish to discuss from the various programs.

I'm going to turn it over to Carl for a few introductory remarks, and then Marty will introduce the other members of our team.

DR. CARL PAPERIELLO: Thank you. The waste safety arena will require a high level of Commission attention in the foreseeable future due to two significant overarching challenges. The first is the high level of public interest with almost all aspects of radioactive waste; high level waste, low level waste, waste transportation, decommissioning, and clearance.

In addition, holders of such waste have a significant interest in final waste disposal from financial, safety, and security viewpoints. Of importance in connection with this are the efforts by the Environmental Protection Agency to revise the public dose limit.

The last proposal, presented about a year ago, was to replace any numerical limit with a process that would set limits on a case by case basis. While this may work under CERCLA procedures, the need to set limits for a wide variety of licensee radiation sources and the need to ensure sufficient funds are provided for future decommissioning requires a quantitative limit.

The second challenge is the fact that the dose limits or dose constraints on waste activities, actual or proposed, both domestically and internationally, are a small fraction of natural background and comparable to or below the variation in natural background. Consequently, on an empirical basis, one can neither demonstrate directly, compliance with a selected dose level, nor demonstrate an adverse health effect. In both cases the results are calculated from models.

As the staff implements the Commission goal of risk informing the waste safety arena, some of the current assumption, particularly bounding assumptions in the models, may require Commission review for policy decisions.

Now I'll turn the staff presentation over to Mr. Virgilio who will address a number of highly visible challenges in this arena. Marty?

MR. MARTIN VIRGILIO: Thank you, Carl. Good morning Chairman, Commissioners. First let me start off by introducing the support team here for today's briefing. On my right, Margaret Federline, the Deputy of NMSS.

And then on Carl's left, I have William Brach, the head of our Spent Fuel Program Office, and John Greeves, the Director of our Division of Waste Management.

Also behind me, in support staff, we have Ellis Merschoff representing all the regions who have a significant piece in the waste arena. Andy Murphy is here to support us from Research, Paul Bollwerk from ASLB, Ed Baker is here from IP, Joe Holonich from NSIR, and Bill Reamer from NMSS is also here to support us today.

If we go to Slide Number Two, this is just an overview of what we're going to be doing today. Represented here by the staff are the offices and the regions who conduct activities in the waste arena. The Office of Nuclear Regulatory Research plays a very active role in supporting the development of standards and the basis for our regulatory actions and in conducting confirmatory research for us on a wide variety of topics and activities.

In the Spent Fuel Program, Research is, today, confirming the adequacy of our current programs around fuel burn up and cladding materials. Research has the agency lead for conducting the package performance study. And we'll talk about that in a little bit more detail. And they've also contributed to our understanding of the potential mechanisms that could cause movement of residual radioactive material into the environment from the sites under decommissioning.

Also with me, not directly behind us, but Paul Lohaus is in the audience from the Office of State Programs. They continue to provide support to us in Waste Arena and Materials Decommissioning and also in transportation

activities.

And we have a new active partnership with the Office of Nuclear Security and Incident Response. They support us today on spent fuel storage, reactor decommissioning, and transportation security related matters.

We're also highly reliant on the support we get from the Office of the General Counsel for policy development, rulemaking, licensing action, and other activities. In addition, NMSS continues to work very closely with our Office of International Programs, furthering the U.S. agenda, and also learning from other countries in the area of waste and transportation safety.

Finally, the Center for Nuclear Waste Regulatory Analysis provides us excellent technical support in the High Level Waste Repository Program. Today's meeting purpose is to inform the Commission about some of the higher profile activities that we have underway, the objectives for those programs, and some milestones that will be coming up in the near future that will involve the Commission, particularly on policy issues. Our objective here today is just to have an open discussion with the Commission on the various waste activities.

As Carl mentioned, I'll briefly present a few high priority activities and then we'll have questions and answers, which I hope you will engage us on all the waste activities.

Slide three just touches on the three areas that I wanted to spotlight today; the waste program, decommissioning, and spent fuel transportation. Slide four then takes us into the first program area, the high level waste area.

Starting with the key technical issues, I just want to point out that

it's a priority for NMSS and for the agency to maintain both the quality and the schedule for resolving issues, such that all the identified issues are addressed prior to the receipt of the license application. This is now currently scheduled for December of 2004. Success in our addressing these issues for us will ensure that we have a sufficient application to begin our review once it's tendered by DOE.

There were, when we started into this process of identifying what information we needed, 293 agreements, which we established with DOE for providing information to us. These are tied to and surround the nine key technical issues that we developed as part of the prelicense application process.

DOE has come forward. They've presented a schedule for addressing all of the 293 agreements. Some of them go out into FY-05. Approximately 70 of these 293 agreements are now completed. And that means no additional information is needed from DOE on those topics. We have forty more currently under review today. And if you step back and think about, again, the nine key technical issues that establish the framework for us, all of those nine key technical issues now are closed, pending the receipt of this information. So I think we're making good progress around the issues and the sub-issues that we have to address.

We will, at this point, be increasing our interactions with DOE to provide timely feedback on the agreements. I think this is very important. They send us information, we need to give them timely feedback on what they've provided to us. And we need to continue discussions so they understand clearly what our expectations are around each one of these agreements, that

they understand schedules and we understand and have agreement about what constitutes adequate progress in completing the remaining agreements.

We'll continue to have public meetings with DOE to review and discuss the agreements. And consistent with the use of risk informing, we will continue to refine and use risk insights that come out of our performance assessment. We will use these risk insights to help focus our staff on what the more important issues are that come out of these agreements.

We refer to this as our risk insight initiative. And again, it draws heavily on the information that comes out of our staff performance assessment.

Stakeholders. We continue to act with the state of Nevada and others representing very diverse public groups seeking assurance that the high level waste repository will in fact be safe, and that our prelicensing and licensing activities will be conducted in a thorough manner. We have many challenges in this area. I think one of our greatest concerns today is the DOE budget constraints that may have an impact on DOE'S focus and schedule for completing these agreements.

You read in the paper statements made recently by Secretary Abraham indicating that the budget short falls that he's experienced will have an impact on their ability to deliver a license application.

I would like to now move on and talk a little bit about post closure performance assessment. NRC continues to evaluate DOE's efforts in this area. They're responsible for developing a post-closure performance assessment in terms of models, tools, data, and expertise. That's used to enhance their understanding and our understanding of the repository performance. Part 63 requires DOE to use this performance assessment to

demonstrate compliance with post-closure performance requirements for the repository.

NRC has developed its own models, its own total system performance assessment tool, to guide its regulatory activities and support an independent review of DOE's compliance demonstration.

We completed our system level performance assessment of the post-closure repository system using Version 4.1 of that code in December of 2002. And today we're revising that code. It's currently under test. And we'll be doing additional assessments with our tools.

We have conducted reviews of DOE's performance code, focusing on consistency between the code and its supporting documentation. In addition to using this performance assessment code to define regulatory and repository performance, again, we've found value in it in helping us prioritize our efforts, helping our staff focus on what are the most important agreements that we have to resolve. So I think this has been very beneficial to us.

And we'll continue to monitor DOE's total system performance assessment work in order to verify the quality of their code and also that their inputs are consistent with the available data.

I would like to move on now to the preclosure safety analysis. DOE design, in this area, is evolving. It's evolved considerably from the time when we first saw it through the viability assessment phase of this process, and it's continuing to reflect changes. Today what we're seeing is new surface operations buildings, new on-site surface aging facility, revised subsurface layout with phase development of emplacement panels. We're seeing changes in the waste package. We're seeing changes to the initially proposed

replacement drift ground support system.

These proposals were briefly rolled out to us in a November 2002 technical exchange that we had for DOE. And as we understand it, the design is continuing to evolve. So we will continue to have exchanges with DOE as the design continues to evolve.

This is one of their top priorities. We speak frequently with DOE about solidifying the design details to help us move forward in our review. And we expect them to do this in the very near future.

We continue to have meetings and interactions with DOE. Additional meetings are being scheduled to discuss the resolution of the pre-closure safety analysis and technical topics. That's all I wanted to say about that.

I would like to move on now to talk a little bit about performance confirmation. Performance confirmation in itself is a broad set of activities that include field laboratory tests, monitoring, and computer models that will be conducted by DOE and NRC to confirm the performance of the full ensemble of barriers relied on for the repository. DOE activities will be overseen by NRC through an integrated program of independent technical work that will conduct inspections. If approvals are granted for DOE to construct and operate the repository, the Performance Confirmation Program will become a major part of NRC's oversight activities and extend on for decades.

DOE is required to submit a Performance Confirmation Plan as part of their licensing application for the proposed repository. We've had technical exchanges with DOE, most recently this past month in February, where DOE presented their strategy for developing risk informed and

performance based confirmation program. We'll continue to have follow up technical exchange. Some are now planned for May where we expect DOE to present additional details around their Performance Confirmation Program.

We've developed, the staff, we have developed our own performance confirmation action plan. This provides guidance to our staff and to the Center staff on the requirements and planning assumptions governing these performance confirmation activities. And we'll continue to monitor the development of DOE's Performance Confirmation Plan to ensure it's sufficient in scope, and depth, and detail to address all of the relevant issues.

I would like now to move on to quality assurance program status. First, it's important to note that DOE is responsible for the success of the QA program. And they're making some progress. But they're continuing to have difficulty in implementing an effective quality assurance program. They've developed a plan, they call it the Management Improvement Initiative, to improve the effectiveness of their quality assurance programs. A key element in this Management Improvement Initiative are changes that they see that they need to make to their safety culture and safety conscious work environment.

DOE's ability to self identify problems and implement effective corrective actions is a very high priority, both for the NRC and for DOE. But the new DOE initiative, this Management Improvement Initiative, has not yet provided tangible results.

NRC continues to monitor and verify the performance of DOE's Corrective Action Plan. We continue to perform observations in the field, audits of DOE activities, as they implement this Management Improvement Initiative. Its routinely discussed during public quarterly NRC management meetings as

well.

There are two challenges, I think, facing DOE in this area. One is creating an environment where their staff and contractors believe that they have the freedom and expectations to identify problems. And secondly, for DOE to develop and implement meaningful performance indicators for quality. This will help us and DOE, I think, measure whether they are making progress in this area.

I would like to move on to talk a little bit about compliance with high level waste proceeding, including the Licensing Support Network. NMSS staff, in conjunction with the Office of Chief Information Officer, OGC, ASLB, SECY, we are working to address a significant number of issues relevant to the potential waste proceedings, including requirements to certify that the document collection is identified and made electronically available through the Licensing Support Network, as required by Part 2, Subpart J.

We have a number of activities underway. LSN testing is in progress. Software and hardware upgrades are underway for the high level waste document server. And software upgrades are in place for the electronic document hearing process.

We have issued a draft regulatory guide, topical guidelines for the Licensing Support Network comments. And that reg guide was issued back this past summer. The comment period closed in September. We've got over 60 comments that are currently being addressed. And we hope to have the comments addressed and response this month, in March.

Two electronic submission technical exchanges have been conducted in this past year, 2002. And we are in the process of electronically

capturing all of the relevant, high level waste, NRC and Center documents. A paper will be coming up to the Commission to outline what our activities are around the high level waste proceedings.

I think we have challenges to face in this area. We've got over fifteen years of information, some in paper form, some in electronic form, that we need to capture for this process. And we also have challenges around some of the very large documents that we have and anticipate receiving. And including these electronically into the system and proving electronic accesses is another challenge that we face.

Those are some of the highlights for the high level waste program that I wanted to touch on. And now I wanted to move to decommissioning and license termination. That comes up on slide five. There are a couple of bullets I wanted to touch on there, as well as slide six.

Back in October, the staff completed its assessment of identified issues related to the implementation of the Licensed Termination Rule and our plans for addressing some of these implementation issues. We're conducting an evaluation of these issues today and have committed to provide the Commission a paper in March of this year, 2003.

We're looking at conducting this analysis with an objective, or a desired outcome if you will, of ensuring that decommissioning is conducted in a more timely and efficient manner, consistent with the intent of the License Termination Rule, and that we maintain safety and public confidence in this process.

We've got some experience using the License Termination Rule today. This rule was finalized in 1997. And we've got a number of issues that

we're going to be bringing forward to the Commission as part of this evaluation. As a matter of fact, we'll be bringing forward issues and recommendations in eight separate areas that will include policy considerations and options.

The first of the eight involves options to make restricted release more viable by removing certain implementation impediments that we've seen as we've moved forward with the rule. The second area is to ensure that there's a clear relationship or consistency where it's appropriate, of the various site release limits and the License Termination Rule limits that we deal with. The third area is clarifying that unimportant quantity limit that appears in Section 40-13 of our regulations that's used to define source material that's exempt from regulation. It's not to be used as a decommissioning criteria.

The next issue, the fourth area, is to clarify appropriate dose limits for approving on-site disposals that would then be reconsidered as you move forward to terminate the license at the site. The fifth area is the termination of the appropriateness of regulating uranium and thorium differently than other materials under the License Termination Rule. The sixth area has to do with clarifying the relationship between the License Termination Rule's dose constraints and the existing guidelines and path forward for controlling the release of solid materials.

The next area, the seventh area, is providing clear guidance for selecting more realistic land use scenarios for dose modeling. We've had some discussion with the Commission about that already, whether we should move away from the resident and farmer scenarios where it's appropriate and consider industrial use scenarios. The eighth area is how we're going about preventing future legacy sites by insuring adequate financial assurance and

effective and safe facility operations.

Our challenges are to develop a comprehensive set of recommendations that satisfy our objectives with the desired outcomes that I spoke of just a few minutes ago and that are responsive to our stakeholder's interest. Another challenge is going to be effectively communicating that complex set of issues, evaluations, options, and recommendations, to the Commission.

As I mentioned, the Commission is going to have a number of policy issues to address around the staff recommendations, and we look forward to continue interactions with the Commission on these issues.

The last area I wanted to spotlight was the spent fuel transportation and storage area. There are three topics within that area that I'll touch on. The first is the high stakeholder interest. As you well know, there is very high stakeholder interest in spent fuel transportation. We believe that the shipments of spent nuclear fuel are safe and secure, based on the adequacy of NRC's regulations, the design requirements that ensure that the casks are robust, and the excellent safety records that we've seen here in the United States and abroad. In support of NRC's strategic plan performance goal of improving public confidence, we have developed a transportation communications plan, and we're implementing key elements of that plan. Part of that includes supporting public meetings in the state of Nevada. As a matter of fact, when we go out for the high level waste meetings, oftentimes the focus turns to transportation issues. They are of more interest to some of the stakeholders out there.

We make presentations at regular regional meetings to the

Council of State Governments, and we participate in international meetings dealing with the transportation of spent fuel, all as part of our communication strategy.

Our challenge is keeping our message current, keeping our message effective, and understanding and making it understandable to all the stakeholders that are out there. And ultimately, our challenge is gaining public acceptance that spent nuclear fuel transportation is in fact safe and secure.

We have a number of studies underway in support of this. We've completed studies and have transportation studies on-going, two of which I just wanted to mention to you today. The first is the package performance study. This is an important part of NRC's spent fuel transportation cask research program. And it will extend out over the next several years. Our study will focus on the performance of casks and their contexts in transportation accidents. It's expected to involve both analysis and physical testing of both truck and rail casks.

The package performance study is another example of how we interact with Research where we do confirmatory research to support the adequacy of our regulatory programs. In this regard, Research has the technical lead for the confirmatory research, and NMSS has the programmatic and public stakeholder outreach lead for this package performance study.

We have issued our test protocols and have now scheduled public meetings. The first of the public meetings takes place this week here in Rockville. We'll be meeting next week in Las Vegas, and the following week We'll be meeting in Chicago. The test protocol report itself describes, at a conceptual level, what the tests are going to conduct, both in terms of impact

loads and fire tests, both. And the tests are currently scheduled to be completed over 2004-2005 time frame.

We also have a National Academy of Science study on-going in support of this area. The National Academy of Science Board of Radioactive Waste Management is going to be studying high level transportation risks. Their objective is to develop an independent high level synthesis of the key technical and societal concerns for spent fuel and high level waste transportation. We see this study as complementary to the package performance study. And time frames are relatively consistent.

In terms of cask availability, we continue to conduct our reviews of designs today, looking at both multiple storage and transportation cask applications. Currently, we have seven dual purpose casks certified by the NRC. This provides the vendors and the licensees multiple options. And we currently have approved over ten dry cast storage systems for the storage of spent nuclear fuel. Our challenge is continuing to meet the national needs for safe storage and transportation of spent fuel.

And I want to talk a little bit now about some of the technical challenges that we will have to deal with around both spent fuel transportation and spent fuel storage. There are three areas that I want to touch on: high burn up fuel; burn up credit; and moderator exclusion, the first of which is high burn up fuel.

The acceptance criteria for the storage of all spent fuel licensed by NRC, including high burn up fuel, has been developed and is now contained in our staff guidance document. This guidance is being used by the staff to help guide our reviews of spent fuel storage cask applications. While we have this

guidance in place, we don't have acceptance criteria today, generic acceptance criteria, for spent fuel configurations that have been for transportation of high burn up fuel. So this is an area of emphasis for us.

We continue to review spent fuel cask transportation applications on a case-by-case basis. This is not the most efficient and effective way to approach this, and that's why we're looking to solidify our guidance documents in this area. But to do that we're going to need additional data, and we are going to need additional analysis. That I'll touch on in just a few minutes. But what we want to do is ensure that, in the transportation area, the geometry of the fuel is predictable, that's it's in tack after postulated accidents. And that's a key assumption that we used in our criticality, our shielding, and our thermal analysis.

So our guidance on cladding considerations for the storage and transportation of fuel was issued back in July of 2002. It's a significant milestone for us. And we're using that guidance. That guidance was developed with support of Research and by searching publicly available information and data. But there is currently a limit to that information that's available, particularly in the area of high burn up fuel. This area is an issue of high interest to the industry. They are developing or are in the process of developing refined methodologies and information that we believe will likely lead to revisions and solidification of our guidance in this area.

The second technical challenge area is in burn up credit. Burn up credit, as you know, entails taking credit in the criticality safety analysis for the reduction in radioactivity of the fuel that occurs during the irradiation of the fuel in the reactor vessel. The use of burn up credit will help increase the

capacity of spent fuel storage and transportation casks and minimize the number of casks that are needed and reduce the operating costs and, importantly, personnel doses and exposures. Revisions to our burn up credit guidance were issued back in September of 2002, another significant milestone for the staff.

The current body of publicly available data for further expansion of burn up credit, though, is limited. More data is needed. We believe it exists in other countries, particularly France, but this data is proprietary in nature. And we're working with the French to get access to that data and also working with other countries as well. We'll continue our analytic studies to increase the use of burn up credit where it's appropriate.

The last of the technical challenges I wanted to touch on is the use of moderator exclusion for spent fuel transportation. We are exploring, today, the technical viability of granting moderator exclusion or the use of moderator exclusion in the licensee's transportation analysis. We've got a number of on-going efforts today within the staff to quantify the risk of events leading to water intrusion into spent fuel transportation casks as well.

So it's looking at what can happen, how likely is it, and what are the consequences. Research is helping us in this area to develop programs to confirm the computer models that we have now for structural integrity calculations. And SANDIA Lab is helping us in completing risk studies around transportation accidents and the frequency and severity of those accidents.

Industry is also very interested in using moderator exclusion because it can reduce operating costs. If an applicant does not have to consider moderator in leakage as part of their criticality analysis, it certainly

simplifies the analysis and leads to cost saving, allowing package designs to change in a way that they no longer need as much or extensive poisons or other special arrangements for criticality control within the casks.

I now want to summarize. In slide eight, this is very similar to the slide that we used when we met with you back in January on the materials side of NMSS activities. Within NMSS, we continue to strive to implement a common set of NMSS values and a vision for all of our staff actions and programs. For example, a key element in our visions and values, in achieving our objectives, is fully using the creativity and potential of the staff in NMSS. For us, this involves recruiting, setting expectations, training, and providing feedback on performance, creating an environment where different perspectives are valued.

There are a broad range of critical skill disciplines needed around our core competencies. You've heard about some of the technical challenges, both in the materials arena and today in the waste arena. They are needed to carry out the various activities that we have as part of our mission. Some of the more unique skills needed include the criticality safety technical reviewers and inspectors that I mentioned in the spent fuel program area, and transportation experts as well. These are difficult to attract and hire. And there's a limited pool of experienced people or candidates competing in this area.

Our high level waste program also presents challenges in this regard. For example, the Commission is going to need assistance in adjudicatory matters. We've developed a strategy for meeting that need. Also of importance to us is ensuring that we have the continuity of qualified staff to work on the application and work through the hearing process that, as you

know, will extend over several years.

And if a license is granted -- I'm thinking about the performance confirmation program that I talked about -- it's going to extend over decades. To offset this difficulty and to maintain the core competencies that we need, we're using a variety of strategies to increase our organizational capacity and improve our capabilities and readiness.

We're increasing our emphasis on recruiting. We're using what we call double incumbencies, putting two people in one staff position, anticipating that people will retire or move on to other positions. We're increasing the number of senior level expert positions within the staff. And we're using other options that are a part of HR's portfolio of tools that we have available to us to attract and retain good people.

I think one of our success stories is the intern program. We've been very successful in attracting very competent staff, filling that pipeline for critical skills, and maintaining our core competencies. Today we have seventeen new interns on board, and we're in the process of bringing nine more into the NMSS program. So I think that's very significant, and it's been a very successful program.

In closing, I want to highlight some of our efforts to work more efficiently and effectively. And by that I mean just using less staff and contract resources to accomplish the right work. I attribute most of the progress that we've made in this area to our efforts to risk inform our programs. Making our programs more risk informed and performance based pays tremendous benefits in terms of efficiencies and effectiveness. And also by striving to embrace continuous improvement and learning within our staff programs. The

decommissioning area, I think, is a good example where we've streamlined our decommissioning process, we've consolidated our guidance, we've drawn on lessons learned from implementing the License Termination Rule, we've rebaselined our plans for decommissioning sites, we're implementing program evaluations around the decommissioning process that we expect will lead to even more efficiencies.

In the high level waste area, I mentioned the fact that we're using our insights from the performance assessments to focus our energies on what's the most significant issues to repository performance. We're categorizing and reracking the agreements that we have with DOE to close on the KTI's.

With respect to the spent fuel storage area, we've streamlined our rulemaking process for cask design certification, and we've used the results of the research analysis, as I've mentioned earlier, on high burn up fuel along with risk insights that we've gained to revise our guidance documents so that now we can allow storage of all spent fuel that's currently being licensed by NRR.

Technical issues associated with storage of high burn up fuel is an area that NEI identified as one of the most important issues facing the industry. And I think we've made good progress in resolving those issues, not only making our programs more efficient and effective, but also reducing the burden on the industries that we regulate.

We've also used risk informed insights in the transportation area. A good example around that, I think, is decisions that we've made approving transportation cask designs that allow shipment of spent fuel from West Valley. So we've already gained, I believe we've already gained significant efficiencies.

And we're optimistic that we can achieve more efficiencies in the future. Today the risk task group and the ad hoc group that we have on business process improvements are working together to further streamline a licensing approach for spent fuel transportation and storage.

This concludes my prepared remarks. We're now ready to answer any specific questions that you might have on any activities in the waste arena. Thank you.

CHAIRMAN RICHARD MESERVE: Thank you. It's clear that you have a very wide range of very important activities for the Commission. I think it's Commissioner McGaffigan's turn to go first.

COMMISSIONER EDWARD MCGAFFIGAN: I get more than my fair share of these firsts because I'm always caught by surprise. That's okay. I'll take it.

Let me start by asking about the adaptive staging. We have this Academy report that we received in early February. And I found, as I read it, many elements of it problematic, the way they define adaptive staging. I believe that there is the opportunity for something akin to adaptive staging in our rules. But I'm not sure the Academy bothered to understand what the regulatory process and the adjudicatory processes of these agency are as they drafted this. And indeed, there are factual things that are wrong in this report, and it's internally inconsistent in terms of understanding our licensing process. But in case somebody from the Academy actually does any homework any longer in preparation for these reports, let me try to just have a discussion with you as to what adaptive staging means to us. And then maybe somebody some day in the Academy space will, you know, figure out what the regulatory process is.

The Academy report, one place where it's inconsistent -- I just want to make clear with the staff, we are expecting an application maybe in December 2004, maybe later, in light of the Secretary of Energy's recent comments, that unless they get some additional money, for a construction authorization. That is not a license to receive and emplace waste. A license to receive and emplace waste will involve a second adjudication following the potential receipt -- obviously, they would have had to receive a construction authorization, they would have had to have done some construction, and then there's some additional information they provide with a license request to receive and emplace. Am I correct on that?

MR. MARTIN VIRGILIO: Yes, you are.

COMMISSIONER EDWARD MCGAFFIGAN: If they get a construction authorization, there's a provision 63.32(c) and then a provision 63.33 that lay out when, in case of the 63.32(c) it requires that we, in our construction authorization granting, if we grant it, define three categories of potential amendments to the construction authorization.

The first category would require a prior hearing. The second category requires prior notice to the Commission in the possibility of a hearing but not necessarily a prior hearing. And the third category simply requires notice to the Commission.

So it would strike me that the degree of flexibility for adaptive staging depends on how we categorize things into those three categories at the time we grant the construction authorization. Would that be correct?

MR. MARTIN VIRGILIO: Yes.

COMMISSIONER EDWARD MCGAFFIGAN: So there's a

possibility of amendments, amendments without a -- one of the authors of this report, without being named, blithely told Nuclear Fuels that the NRC could handle such amendments, presumably both with the license to receive and emplace and the construction authorization, quote, "in an expeditious manner".

I think our ability to handle license amendments in an expeditious manner -- let me stick with the construction authorization amendments. Our ability to handle construction authorization amendments expeditiously will depend on how many DOE requests in the first category, those that require prior hearing, and those that fall in the second two categories, either a following hearing or just notice and go ahead.

And so the degree of flexibility for adaptive staging will depend on, you know, if DOE asks for something that requires a prior hearing and the state of Nevada is continuing to oppose, then I would imagine that any hearing would take, at a minimum, two or three years. I'm not aware of a whole lot of hearings around here that take less time.

MR. MARTIN VIRGILIO: Can I respond to some of the things that you've said? Then I'll ask John Greeves to pick up on a few additional details. I've read the report. And I can't argue with the merits of looking for continuous improvement.

COMMISSIONER EDWARD MCGAFFIGAN: Nor do I.

MR. MARTIN VIRGILIO: That's really important. And I think the report promotes an approach for continuous learning and improvement through periodic assessments of how things are done and is that the right way to do things in light of any new information that emerges. But as you point out, the downside is, with adaptive staging, end points and paths to the end points are

not abundantly clear at the beginning of the process.

COMMISSIONER EDWARD MCGAFFIGAN: There's nothing in our process that would preclude DOE from asking for a construction authorization and then building the facility in phases. I hadn't gotten to the license to receive and emplace. The license to receive and emplace could be for a limited area which then grows with license amendments consistent with 6344 -- or 6344, test and experience, 6346. Any major changes in what they initially proposed require a license amendment pursuant to 6346. It isn't clear from our rules how many of those are prior hearing versus post hearing. I think that's an ambiguity that someday we'll have to clarify. But there's nothing in our rules that would preclude them from taking a sort of initial cut and then a different cut and then a different cut and potentially learning throughout that process. And the need to obtain a license amendment for a major change will sort of force a decision point. Isn't that correct?

MR. MARTIN VIRGILIO: That's correct. The authors of the report believe that it could be done within our regulatory framework, and so do we as we read the report. But as you point out, it's going to require the accommodation of more changes if in fact DOE -- and it's really up to DOE, they've got to decide how much of this they want to adopt.

For example, the report calls out for pilot programs, demonstrations, and tests that are not currently in the DOE program. I mean, that, as you point out, could have an impact on us in terms of amendments that we might need to review or, to the extreme, if DOE proposes to license in individual stages of the process.

COMMISSIONER EDWARD MCGAFFIGAN: If I take their report

-- this is a comment more than anything. If I take their report and just take the timeline for what I assume the DOE actions are, let's assume they apply in December 2004. Let's assume, for the sake of argument, we meet a three year deadline and assume although I don't assume it, that we grant, apriori, that we grant a construction authorization. That's December 2007 or December 2008 if we use the extra year if we need to.

Let's say they do a modest amount of construction and then come in December 2009 for a license to receive and emplace. It isn't clear from the statute whether the three year time period -- this is not the prior hearing, according to our rules. Let's assume it takes three years. It's now December 2012. If all they've asked for is what the Academy suggests in the way of not emplacing -- it's almost like a surface facility where they will be doing nonradioactive stuff within the mountain, and that's all they request and then they come in with a license amendment to receive and emplace actual waste, as I say it's probably ambiguous in our rules as to whether that's a prior hearing. But it would be a pretty substantial change if all they had asked for the first time was not to put radioactive material in the mountain.

So you might have yet another prior hearing, maybe in 2015, and you might possibly put the first waste in the mountain in 2020. They're adding an extra step. I personally don't see how waste can get in the mountain if everything goes smoothly for DOE until about, you know, 2012 or 2013 or 2014, given that there are two prior hearings. Everybody seems to forget there's a prior hearing on construction authorization, there's a prior hearing on license to receive and emplace. If you have three prior hearings before you actually place waste into the mountain and each of those proceedings takes three or four

years, it's going to take a very, very long time. And the Academy's strength is telling us whether there are technical problems in approach. When they start trying to describe processes -- and one of the other things in this report is a bunch of stuff about safety cases. It's almost like they're creating an extra regulatory requirement which isn't in any regulation, and I don't think needs to be in a regulation. But when they get into processes, it strikes me that they mess up. They say, on the one hand, geologic repositories should be doable; on the other hand, if you ever want to do one, we can create a process that will take fourteen decades to do anything. I find them in between.

Mr. Chairman, if anybody wants to say anything more, we may want to have the Academy come in here. I would be happy to talk to these guys as to what the quality of their work is lately and give them a chance to rebut. But if staff wants to say anything more, fine. I just find these reports frustrating. I found the clearance report frustrating when it got to process. God help us on some of these other Academy reports that may be in process. Bob Bernaro was on this panel. You would think they could figure out what our rules state, but they don't seem to be able to do that, or they just sort of likely assume everything goes away, that all the problems can be solved with a magic wand.

CHAIRMAN RICHARD MESERVE: Commissioner Merrifield?

COMMISSIONER JEFFREY MERRIFIELD: Thank you, Mr. Chairman. I've got four areas I want to see if I can get the staff to touch on. The first one relates to reactor decommissioning. And I signaled during our last meeting that this was an area that I wanted to talk about. Given the fact that the responsibility for decommissioning has changed from NRR to NMSS, this was not an area that -- and I know you were limited in your time, but an area that you

really didn't get into in the presentation you made this morning.

To the best of my knowledge -- I would stand corrected, we've got, at this point, five sites: Big Rock Point, San Onofre Unit 1, Maine Yankee, Yankee Rowe, and Haddam Neck, which are all very active in the decommissioning area with significant activities underway. My further understanding is that that's probably the most active decommissioning program that this agency has ever undertaken. Given that, I just want to have a very high level sense of how it is going.

And I would also like to have an understanding, if we had a chance to look back on both our technical interactions as well as our public interactions to see if there are lessons learned from what we have done.

An example of this, I think, is the recent activities associated with the Saxton reactor in Pennsylvania which is, I think, at the end of its process or has completed its process. I would be interested in learning if you had taken a look at what happened there, the interactions we had with the public and whether there are better ways we can do things.

MR. MARTIN VIRGILIO: Let me ask John Greeves to answer that. But let me just say from sort of a top level perspective, the project management responsibilities for the thirteen reactors that were in NRR have now been transferred to NMSS. We have the procedures and programs and people in place to conduct the decommissioning reviews. And with that, I would like John maybe just to touch on the status of some of the programs and the technical issues and some of the lessons learned as you've asked.

MR. JOHN GREEVES: Okay. Just a little backdrop. This has been a very active program for actually the past few years. We in fact

completed the Trojan License Termination Plan. We approved it. We did learn some lessons along the way there. I'll go over that in a minute. Maine Yankee was just completed recently, so that's two.

Haddam Neck, CY, the SER was done for that also recently. And Saxton is just about done. We've actually finished the SER. So we've got a first wave of these reactor sites. We have gained quite a bit of experience. You mentioned the ones coming along as sort of the second wave where we're taking advantage of these lessons learned. That includes the SONGS facility that you mentioned, Big Rock Point, and Yankee Rowe.

We've done less on those sites because they are not in an amendment stage. But they're coming in, and we have used various vehicles available to us to communicate with them.

You asked specifically about Saxton. As I said, we've brought that along. We've learned some things. There have been some good lessons learned. Saxton, really like virtually all of the other utilities, set up an advisory group. It was not required by our regulations, but they voluntarily set up a citizen's advisory group. In fact, all the utilities did this. And we found that this was quite useful. There were a number of meetings held in conjunction with this group. In the Saxton case, the notes I have is that there were 15 meetings held. A number of these were at the location of the site.

The utility there actually went to Penn State and asked for a professor, a former professor there, to serve as sort of an inspector for the advisory group and give them reports. I found that that was a useful lesson learned. The project manager actually is in NRR and now runs a test reactor, Al Adams. Al spent a lot of time with these people, explaining NRC activities to

them. Our NMSS staff went to these meetings and explained our role. The regional inspectors, Tom Dragoun in this case, was actively on the site.

So one of other things we learned specifically at that site, is they set up a process where the local official did the moderation of some of these meetings. That worked out well. He had credibility with the local people, and just rounding that out more generally for this first wave of four license termination plans that we completed. The staff last year put together a regulatory information summary in January of last year, putting together the lessons learned, the technical lessons learned that you asked about. They covered things like communications. We found that the licensees really ought to be coming in the door early and visiting with us. The second round of people are all doing that to kind of smooth things out, also ground water.

COMMISSIONER JEFFREY MERRIFIELD: I'm sorry. John, I don't mean to stop you. I've got some other areas I want to get into. Let me sort of put an end to this question. You're going to have an information paper that will come to the Commission documenting some of this activity in terms of what you've done in capturing that information?

MR. JOHN GREEVES: Yes. In fact, the LTR analysis paper that Marty mentioned earlier is coming up. And it will explain some of the problem areas we had in terms of things we need to do a little differently. I think that will address a lot of your --

COMMISSIONER JEFFREY MERRIFIELD: I would suggest -- this is for future consideration of my fellow commissioners -- that that may be a good. We talk a lot about cradle to grave responsibilities in this Commission.

And I think this is an area where perhaps a meeting might be useful to look at what the staff has learned, maybe bring in some public officials and others to get their sense of how we're doing and give the Commission a good sense of changes that we might need to make.

Switching to a different area, license termination. The Commission has been actively engaged with the staff on that issue. I know from my part I have raised my own concern that increasingly we need to think about this differently as Congress and the President are, in terms of brown fields. We need to make sure that these sites can get back into beneficial economical reuse consistent with protection of human health in the environment.

I'm wondering where we are in getting a paper on that up to the Commission, and if you can give me, briefly, some general discussion of where you think you're going to go, particularly in the nature of institutional controls.

MR. MARTIN VIRGILIO: I'll start off. And then John if you can provide a little bit more detail on the institutional controls. But we owe the Commission a paper in March, this month. So we'll be addressing the range of issues, those eight issues that I spoke of earlier. And John, if you can give us a little more details about institutional controls.

MR. JOHN GREEVES: Marty identified, actually eight areas, one of which, restricted release, includes institutional controls. This is the one that's been quite troubling. I gave you a paper before and you said come back and give us more details. What is not working is the mind set of institutional control that automatically reverts to federal control or state control. It's just too difficult to achieve that. We've had some interactions with the Department of Energy, you're familiar with that.

So the staff has gone back and looked at, is there a graded approach? Can we, for example, have local institutions put in layered effects like county ordinances, things like that, layered systems of institutional controls.

We've looked at what EPA is doing. We've looked at what the ASTM recommends. We've done a study of this, all of which you will get in this paper that's coming up. But in a graded approach, you might have something like a general license for low contamination issues as something we want to talk to you about. You might have a specific license, which is a possession only license. For example, what Ohio does in a site that they are not going to terminate.

And then on the extreme range, you may in fact have to have some form of federal control over this. It turns out that the Department of Energy is looking to a new legacy management organization. And Marty's made inquiries over at DOE, when can I talk to those people. So we're looking for a graded approach. And we would enjoy coming back to the Commission and discussing the recommendations that we have.

COMMISSIONER JEFFREY MERRIFIELD: This is an important area. And I look forward to the staff's paper and recommendations in that regard. Back in September of 2001, I was involved in a meeting in Las Vegas, Nevada, with a group of Indian Tribes along with staff. Those Tribes were those that were potentially affected by a proposed high level waste repository, Yucca Mountain. There were a number of action items that came out of that meeting. Without going into detail on all of the action items, I'm wondering generally if we have completed the action list for the most part and if you can briefly summarize a few of the examples that we took and whether any activities

are still open.

MR. MARTIN VIRGILIO: We came out of that meeting with over a dozen action items. If you can bin them up in four areas, I think they were around communication, participation in meetings, computers, and training for the Tribes. And John, if you would like to hit on a few examples on any of those areas.

MR. JOHN GREEVES: The Tribes wanted a contact mailing list. That was completed. So that's in place. They wanted some specific documents like the final environmental impact statement. That was provided. They wanted to participate in meetings. I'll point out that the spent fuel program office specifically invited the Tribes to participate in the package performance study meetings that are on-going. So they will be engaged in those meetings. If there was time, I could tell you who had signed up for it, but I'll just keep moving.

As far as the computers, it's been plus and minus. Several of the Tribes, in fact, have computers that were shipped to them. It's a question of what they can use. So one of them is still pending on that.

The last example I'll give is the training for the Tribes. They asked for some training on the development of the high level waste program and an outline. That training program is set up. We went over a draft outline with the Tribes, and they agreed to that. And I understand in late '03 we'll look forward to actually conducting that training class. So that one's not completed.

COMMISSIONER JEFFREY MERRIFIELD: A quick follow up. Clearly coming out of that meeting there was a commitment to the Tribes that this would not be a one time only interaction, but the staff envisioned an on-going dialogue with the Tribes on a government-to government basis to

provide them with assistance and training and having an on-going dialogue.

Are we fulfilling that commitment?

MR. JOHN GREEVES: I think we are. For example, Marty reached out specifically and Ellis made a trip to the site. We reached out and tried to set up an arrangement to meet with the Tribes or their representatives. In part that was fulfilled. I think reaching out to the Tribes for the spent fuel operation meetings is going to give Bill and his staff an opportunity to spend some time with them. So I think we're following up on that.

COMMISSIONER JEFFREY MERRIFIELD: I encourage the staff in that regard. The last question, very quickly. Marty, you talked quite a bit about many of the challenges you have and the interactions we have with the public.

There's a lot of voices out there on the material issues that we deal with. Obviously, there's the industry, which has a certain degree of self interest in those issues. There are a variety of different stakeholders, some of whom have strong feelings about the use of radiological materials and provide, sometimes not always accurate information.

Obviously, there's a role that we play as an independent agency, neither promoting nor discouraging the use of radiological materials, to make sure that the public we serve obtains accurate information about radiological materials and the risks associated with them. Are we doing enough in the communications area to fulfill this public expectation?

MR. MARTIN VIRGILIO: It seems like we're forever doing more. I don't know where you draw that line. Especially as we get closer to having an application come in for the high level waste repository, I see us stepping up our

efforts, not only with regard to the repository but also with regard to transportation in this area.

MS. MARGARET FEDERLINE: I just wanted to add that I think one thing in the communications area we have to look at are, how effective are the efforts that we're conducting? Are they really resulting in public understanding of our processes?

One thing we're trying to do internationally is learn, go to local communities where communication has been effective with the stakeholders, and learn what the processes are that they're using, you know, realizing their cultural differences. We're trying to reach out and look at the effectiveness of communications and designing that back into our own program.

COMMISSIONER JEFFREY MERRIFIELD: I'm glad to see the staff is doing that. As you know, I've been interested in the issue of communications quite a bit, particularly over the last year. And I would certainly suggest and encourage the staff to rededicate itself to thinking outside of the box, making sure that we are providing accurate unbiased information to the public for whom we serve.

Thank you, Mr. Chairman.

CHAIRMAN RICHARD MESERVE: Marty, when you described the efforts to close these various agreements on the key technical issues, I was sort of struck by where we are in terms of completing that work. I went through the background materials. It looks like we've completed 67 of 293 agreements. We believe that about 60 will be done this year. And I don't know whether that's optimistic or realistic. But even if that really is accomplished, that leaves 170 that will have to be completed in about a year before the license application is

received if we really intend to have that happen. I wonder if that's really realistic to expect, that we're going to get all of these agreements resolved by the time a license application is filed; and if it isn't, whether we're starting to think about how we'll deal with that situation.

MR. MARTIN VIRGILIO: It is a significant concern to us. I'll let John add on in a minute. From our perspective, what we're trying to do is increase our interactions with DOE, make sure that their expectations, up front, are clear, that we define success for each one of these agreements early on, that we have very focused interactions around the agreement. So we're trying to step up our game in order to ensure that we in fact address -- not necessarily closed, but you're right. You look at the timeline, and there's 60 this year, 90 the year after. I mean it is daunting, it really is, given where we are today. But we're trying to look at, how can we do this a little bit better, how can we be a little bit more effective in our interactions.

We haven't gone to where I think you just went with regard to what's plan B, what if we don't do this. I mean, as far as we're concerned, in order to have a successful, complete application for our review, each one of these have to be addressed, not necessarily closed, but each one of these have to be addressed. John, did you want to comment?

MR. JOHN GREEVES: You hit on a subject we expected a question on. You take a look at these numbers, and you wonder how it's going to happen. I don't want to put a good face on it that's unrealistic. The thing that the staff has been working -- Janet Schlueter and her staff have an eye on these agreements and know exactly when they're supposed to come through. One of the things we're concerned about is that a large bulk of them are due

between April and September of this year. The majority of the ones that are due are actually due in the latter part of the year. So it certainly begs the question, how is this going to work.

A response that I look at is, one, the department has recently increased the gain in terms of their interaction. There's a whole series of technical exchanges that have been set up very recently. This will go a long ways toward testing this premise, can we get through these. Also, Margaret Chu has her team in place now. John Mitchell is on board. So I would look forward to that team being able to produce their end of the deal. But again, you struck on a point that I certainly expected we would get a question on.

This is going to be a challenge. And we're trying to build quality into the process. I think it's incumbent upon us, if we foresee it isn't going to work, that we would have to get back to you and talk to you about that.

CHAIRMAN RICHARD MESERVE: Have we made any effort to go through the agreements that remain to be resolved and tried to do some prioritization and signal that to DOE to say, look, it's absolutely essential that you get these 50 done and we can live with an indication as to some of the others, but to really lay out for them the ones that we feel that we really need to have control of early in the process?

MR. JOHN GREEVES: The quick answer is, yes, we have gone through them. In fact, the ACNW reported to you our process. What the ACNW pointed out is that we need to be a bit more quantitative in how we address those. And we've got an action followed up on that. We've talked to the advisory committee on that, and they seem to be comfortable with where we're headed on that process.

Separately, the Department of Energy wrote us a letter and said, some of these issues, we think, are not risk significant. So they sent us in their case on that. In writing back to them, we said, we think you can probably close some of these issues out with a risk significance issue, but you're going to have to provide some data and show us what the uncertainties are. So we've corresponded with the Department on managing that issue. These techniques, the tune-up of the technical exchanges give us a chance. But I think, you know, we're just going to have to take a look at what happens over the next four or five months. The tale of the tape is going to reveal itself this year.

COMMISSIONER EDWARD MCGAFFIGAN: Mr. Chairman, there is just one clarifying thing. I'm trying to add up the staff's numbers. 67 are complete, 40 are under review. Is it 63 more are expected by September 30th this fiscal year? It's a little ambiguous. The Chairman interpreted the 40 to be included in the 63 to get his number. It's still 120 plus left for fiscal year 2004. But I just would like a clarification as to whether it's 67 done, 40 under review, 63 more expected this fiscal year, and 120 or so left as opposed to 160 left?

MR. BILL REAMER: Bill Reamer, NRC staff. Sixty three is the total for this year. They've submitted a small fraction of that number. I don't have the exact number that they've submitted.

COMMISSIONER EDWARD MCGAFFIGAN: It says 40 agreements are under review. It says 63 is the total for this year, 40 of which are under review at this point.

MR. BILL REAMER: Forty includes agreements that were submitted last year. We haven't completed our review. Agreements where we've had an open item, and they've provided that open item, and we're still yet

to review that and get back to them.

COMMISSIONER EDWARD MCGAFFIGAN: I'm just reading the document. Sixty-seven of 293 are complete, no additional information is needed. Forty agreements are under review. Twenty-five requests for additional information have been sent, presumably with regard to those forty. Sixty-three agreements are expected from DOE in FY-03. That would imply that there's either 63 more that we expect or 40 of the 63 have already been submitted.

MR. BILL REAMER: I think maybe the data is a little confusing. But the assumption that you're making, that the 40 under review were all submitted this year, is not accurate.

COMMISSIONER EDWARD MCGAFFIGAN: Some of those were submitted last year?

MR. BILL REAMER: Yes, that's correct.

COMMISSIONER JEFFREY MERRIFIELD: Perhaps the staff can provide to us a clarification.

MR. BILL REAMER: I will take that opportunity to do that.

CHAIRMAN RICHARD MESERVE: It sounds like my number is closer.

COMMISSIONER EDWARD MCGAFFIGAN: Your number may be closer but, there's two interpretations to the data. I'm just trying to understand.

MR. BILL REAMER: If you want to restate the question, I would be happy to try again.

COMMISSIONER EDWARD MCGAFFIGAN: The arithmetic,

from your numbers it is impossible to determine how many, if DOE does what it says it's going to do, how many will be left, whether it's 160 or 120 or whatever?

After they do what they do, is it 160 left, 120 left?

MR. BILL REAMER: I think I would like that opportunity back again, if I can have it, to provide you a more definitive piece of data.

MS. MARGARET FEDERLINE: Can I offer a quick comment? I'm a little bit concerned about the focus on the numbers. We have to remember the KTI's were derived as the framework for precicensing interaction. They were highly dependent on the strategy that DOE chooses.

DOE is looking at some design changes. Some of these agreements could change. In fact, some of the agreements require only documentation. In other words, we have agreement on the information now. So I would just be a little cautious about, you know, relying too heavily on the numbers.

What we're trying to focus on is what is the real important information that needs to come in before the license application.

CHAIRMAN RICHARD MESERVE: That was really the thrust of my comment and question, that rather than focus on the numbers we ought to make sure we get the important things and have a clear understanding with DOE what we really need to have in hand, at an early stage, in order to fulfill our commitments.

MS. MARGARET FEDERLINE: And we're working with that through a risk insights initiative with DOE.

CHAIRMAN RICHARD MESERVE: When we were also talking about Yucca Mountain, again this year, quality assurance issue came up. And

you were quite careful in your phraseology, Marty. You indicated we were making, quote, "some progress". Then you went on to say we are "continuing to have difficulty". This is a continuing theme that we have had on several of the briefings on this. Is there anything that the Commission needs to do to help get appropriate attention on this matter?

MR. MARTIN VIRGILIO: If you could, as we do consistently in our discussions with DOE management, we've been trying to challenge them to develop performance indicators. How do we know it's getting better? I think that in our discussions with Margaret Chu and John Arthur, they understand this. But we're trying to step away from the program itself and review of the program and now say, let's focus on results, how do you know that this Management Improvement Initiative is working?

So consistency of message would be something that would be helpful to continue to urge them to develop meaningful performance indicators so that we could actually assess where they are relative to the improvements that they're hoping to achieve.

CHAIRMAN RICHARD MESERVE: Well, I think some continuing interactions on things we can do to help you in that area -- because we're moving into a critical phase obviously in being able to deal with Yucca Mountain. And if there's some communication at various levels we need to have with DOE, let's not miss the opportunity to have things corrected if it's possible to do so?

In light of the time, I'm going to pass it on to Commissioner Dicus.

COMMISSIONER GRETA DICUS: Thank you, Mr. Chairman.

Given the some current forty agreements that you're now reviewing, compared to the first set, or earlier set I guess I should say, since the 40 seems to include both, are we seeing any improvement in what we're getting from DOE?

MR. MARTIN VIRGILIO: Let me ask John to answer that.

MR. JOHN GREEVES: I'm going to give Bill Reamer a little time to think about this.

Frankly, Bill and Janet have the hand on the throttle with this issue. So I express disappointment when I talk to DOE. But the real knowledge base is Janet Schlueter and Bill in terms of are they improving.

Did I help you out there, Bill, with timing anyhow?

COMMISSIONER GRETA DICUS: You gave him a little bit of time. I'll give him another thirty seconds. But it has to do with comments that you made about timely feedback. And timely feedback depends a whole lot on the product you get.

So I don't need a lengthy answer. I've got four or five questions. I want to go through them pretty fast.

MR. BILL REAMER: I'm going to give you a tentative yes to that. One thing I'm quite clear on is that we have gotten DOE's attention on the quality issue. And we've gotten it because we've, early on, given them responses to point out where what they've provided is not meeting our expectations.

In addition, we've told them and continue to tell them, and I think they're believing the importance of interacting with us, to understand what our expectations are in agreements. So a tentative yes. And I see the potential for this to work. But I'm not sure it will. I can't guarantee it will.

COMMISSIONER GRETA DICUS: That's fine. That answers my question. I know that concerns -- the is question Number 2 -- have been raised that DOE's security policies and procedures are together, perhaps with ours, regarding the use of foreign nationals, might have an effect on the staff that's employed at the Center in San Antonio. Certainly this could have a negative impact on the NRC's ability to do some of the work that we need done, particularly with some of the agreements. Do we have a contingency plan for that?

MR. MARTIN VIRGILIO: I don't know that we need one at this point. We did have, exactly as you pointed out, some concerns where they were not allowing some of our Center staff access to certain information. We elevated it up the management chain, and they have responded positively. They have changed their approach to this. And now our staff has access. We're continuing to monitor this to make sure this doesn't become a problem in the future.

COMMISSIONER GRETA DICUS: And DOE is comfortable with this?

MR. MARTIN VIRGILIO: Yes.

COMMISSIONER GRETA DICUS: That answers that question quickly. I know that both us and DOE are working parallel with each other in this, at least, precicensing stage with respect to the performance assessment modeling which we have been discussing. There has to be a point in time -- or is there a point in time when we converge what they're doing and what we're doing? And are DOE's efforts focusing on the areas of concern that the staff does consider critical in this modeling process?

MR. MARTIN VIRGILIO: As a general rule, I would say yes.

We've done and continue to do confirmatory audits of where they are in terms of their performance assessment and provide them feedback. But I do think that we're on a common path, and we are on a path that will converge.

You know, the results, comparing results, looking at what drives any differences we have as a result of the modeling differences, or the difference as a result of assumptions and data that's being used. But we're continuing to challenge it. To the benefit of our program, we have an independent tool. We're not relying solely on our audits and assessments of DOE's performance assessment tool. We have our own tool, we're able to do our own independent calculations. And I think that's a tremendous benefit to our program.

COMMISSIONER GRETA DICUS: Well, the communication is very important. I agree with Commissioner Merrifield of the importance of communication.

I have five questions, this is the fourth one. DOE continues to work on their QA Program, on their management improvement initiatives, et cetera, to try to get QA up where it needs to be. And I know that Dr. Chu is very much aware of her problems in QA. And I know that she's addressing them. But that might mean we would have a lot more audits and surveillances that might come in for us to have to address. Are we where we need to be to be able to address those?

MR. MARTIN VIRGILIO: Yes. We're planning and scheduling the audits. We have the staff that can do that with the talent and skills necessary. But again what I'm pushing for from DOE is meaningful performance

indicators that would supplement those audits so that we would be able to see changes in quality, be able to measure changes in quality, as well as to go out in the field and independently assess the quality by our review of their documents and the processes.

COMMISSIONER GRETA DICUS: And we're prepared to do that?

MR. MARTIN VIRGILIO: Yes.

COMMISSIONER GRETA DICUS: I want to actually follow up on one of my earlier questions. It has to do with the agreements and how many are left and whatever the numbers are. I'm not sure myself what the numbers are. But I think in response to a question I either asked of this panel at another briefing or maybe it was DOE -- I think it was this panel or maybe it was ACNW, I'm not sure. But I asked, you know; we've got X number of agreements left, are they saving the hard ones to the end, and is that going to be a problem? It's not just the numbers. But if we have the hard ones at the end, schedules can go awry.

MR. MARTIN VIRGILIO: I think that's a significant concern. John, did you want to comment?

MR. JOHN GREEVES: There's not a good story about these agreements and the schedule. We certainly are engaging them, all of these, in terms of what the agreements are. And I think what Margaret pointed out earlier, that we're trying to do this risk informed approach of the agreements which helps focus our activities. And the notes that the staff gave me was that one of our concerns is that there's a healthy number of these that will come in late '04, early '05, and there's no time for us to do much with them when they do

come in.

So even if they are not the hard ones, even if they're medium ones, it's hard for us to do much of a turn around with those.

COMMISSIONER GRETA DICUS: But if they're the hard ones, we have problems. And have we prioritized that? I think I goes to one of the Chairman's questions. Do we know what's hard and what's medium?

MR. JOHN GREEVES: Yes, we do at a level. We need to do a better job of that as the advisory committee indicated, a more quantitative approach would be helpful, and we're in process on that.

COMMISSIONER GRETA DICUS: I think that might be good feedback. I think this Commission would need to know.

Finally, last week Dr. Chu and I were invited to present at a committee meeting of NARUC. They were interested, and their questions to me were, the process. They didn't really understand who the licensee was and what the process was. And we got that, I think, pretty well clarified.

There were a lot of issues on transportation. So that continues to be something we're going to need to deal with. But there were questions mostly to Dr. Chu on the funding for DOE, and enormous concerns about short falls from Congress.

And she handled the questions extremely well, I thought. She seemed to be very, very, very cautiously optimistic that they could handle, if they don't get cut anymore. So I just thought I would put that in.

But if DOE has more funding problems with the program, I think we have to relook at our schedules. I think that's a given. But she was cautiously, very cautiously -- and I want to really emphasize that. Thinking she's

struggling, she's trying to find efficiencies and effectiveness. She's trying to make it work to get through these funding shortages.

Thank you, Mr. Chairman.

CHAIRMAN RICHARD MESERVE: Commissioner Diaz?

COMMISSIONER NILS DIAZ: Thank you, Mr. Chairman. Let me start by saying that I support Commissioner Merrifield's request that we should know better how decommissioning is going. I think it's an area that is important. I think we would like to be abreast of that.

Going to Yucca Mountain and the KTI's, but let me become specific, igneous activity. There continues to be differences between some of the staff opinions and some of the ACNW. I think, to summarize the issues, the low probability attached to this might not appease all of the concerns with the consequences.

And I would like to know how is the staff trying to resolve these major differences in an area, that, of course, attracts significant public attention?

MR. MARTIN VIRGILIO: Let me start off, and then I'll turn it over to John. I think we in the committee are in agreement at this point, that we need to do more around the new U.S. Geological Survey aeromagnetic data, and we need to do more around consequence models. So I don't see there's a disagreement between us and the committee at this point.

Now I think it turns to DOE and whether they see it the same way that we do. And I'll ask John if he can add any more insights.

MR. JOHN GREEVES: I think it's important for us to stay in touch with the committee on this issue. We've met with them several times.

We're going to meet with them again to share insights in that process. We're also monitoring DOE's activities to assess this new information Marty talked about. A key part of this is the consequence model, what is the right model.

The magma interaction with the packages is the problem. I mean, you're talking about predicting something nobody's ever seen before, so it's a challenge to do that. We have provided our information to the Department of Energy, how we see things. A good thing that has been in front of us, the Department has impaneled a peer review to advise DOE on this approach, associated with the consequences of igneous activity. They met last month with this peer review. They're talking about magma interactions and discussions. And we're getting information on that.

So this is an issue that's going to be with us for a while. We need to run down this consequence issue, and what the model is, and what the uncertainties are. You know, somebody asked earlier, well, what are the key issues. Well, this is the one that's on everybody's front burner in terms of trying to come to closure on it.

COMMISSIONER NILS DIAZ: Are we on the path to resolution or -- pardon the pun -- is this going to blow up in our faces in the future?

MR. JOHN GREEVES: Well, it's not going to blow up in our face.

COMMISSIONER NILS DIAZ: Erupt.

MR. JOHN GREEVES: This issue is going to be one of the key issues discussed in the safety evaluation process.

COMMISSIONER NILS DIAZ: But it's a low probability issue. We need to be able to manage the probability and the consequences.

MR. JOHN GREEVES: We are looking at it. But even given the low probability, the consequences are large. So when you add the two together, it's the one that pops up on the radar screen.

Several Commissioners asked about what is risk significant. If you run the map, this is the one that has some risk significance. And I would look forward to coming back to the Commission in the future and telling you how we're converging on this.

COMMISSIONER NILS DIAZ: Commissioner Dicus touched on interactions with DOE. I noticed the background material notes that the staff believes that they need to increase their interactions with DOE. The Center feels the same way. There's an issue -- what is the right number? You know, we've been concerned about how much interactions there are and the quality of the interactions.

How do you plan to successfully determine what is the right number of interactions that you need to have in a period to resolve issues? Do you have something in place to determine how you're going to succeed in that?

MR. MARTIN VIRGILIO: We have periodic meetings scheduled. And we schedule meetings as issues arise, as we get more information from DOE. I would say it's the quality of the interaction that I want to focus on. Margaret and I, and John and the staff have all been thinking about defining success for these meetings, making sure that the expectations are clear.

It's the quality of the meetings, I think, that we really want to focus on now, as well as the quantity, to make sure that we get the most out of the meetings, that there's no confusion on DOE's part about what's expected to close these agreements, what information do we need, what constitutes

success. I think that's really important to us right now.

COMMISSIONER NILS DIAZ: Going to spent fuel transportation and the issue of communication that Commissioner Merrifield raised which, I think, is an issue.

Let me bring another angle to it. You know, I've always been concerned with the fact that, you know, we look at issues and establish contracts to try to help us resolve these issues. I noticed that we have a new proprietary agreement with the University of New Mexico for public outreach. We're looking at the European chippers and trying to determine what is going on. We supported a symposium. Are we really making a concerted effort to, every time one of these things happens, that the results are actually put into an effective, you know, program of communicating with the public? Is this being done systematically?

MS. MARGARET FEDERLINE: Yes. Let me address that. What we've tried to do is develop a proactive strategy for communication on transportation. And we've tried, in that strategy, to set down our objectives, what are we trying to achieve with the communication.

And our interactions with the folks that you've seen identified are driven by the objectives that we've laid out in this strategy. So we are trying to be very focused in what we're doing and feed it back into strategy to say, does this satisfy the objectives that we've laid out for ourselves.

COMMISSIONER NILS DIAZ: Going quickly, because we're running out of time, to your slide seven and the technical challenges; burn up credit, high burn up fuels, and moderator exclusion.

Let me introduce a technical bias on this. I don't see that burn

up credit is a major issue. There is a physical phenomenon that exists. It should not take ages to resolve this. We've been going for a long time. I think there has to be a realistic finality to this in which we say, questions are there, you know, this is how much it is and this is the credit.

Same thing is with high burn up fuel. I mean, once you get to a certain point, it's a reality. You have to do it. The same thing with moderator exclusion. These are technical facts that we need to be able to deal with and resolve them. They're not really rocket science, I'm sorry. They are nuclear engineers which are very, you know, pedestrian type problems for a nuclear engineer. And I would encourage you to go ahead and try to resolve this because I don't see them as major roadblocks. They should be resolved.

Having said that, let me go to the package performance study, and let me align myself with one part of Commissioner McGaffigan's statement of the National Academy of Sciences. It is important again, when we issue contracts or studies and so forth, that whoever it is becomes very cognizant of our regulatory processes. Because if not, they can be misaligned. I don't care whether it's the National Academy of Sciences or whoever it is. The fact is that these things need to take into consideration the way we conduct our business. This should be present in any one of these analyses, contracts, or studies.

Now, I look forward to Chairman Meserve, when he retires from the NRC, to exert his influence on the Academy in this regard.

MR. MARTIN VIRGILIO: Commissioner Diaz, we agree.

COMMISSIONER EDWARD MCGAFFIGAN: At least there will be somebody at the Academy who actually knows what our rules are.

COMMISSIONER NILS DIAZ: Having said that Mr. Chairman,

thank you very much.

CHAIRMAN RICHARD MESERVE: We better bring this to a quick adjournment.

I would like to thank the staff for a very helpful briefing. This is an extraordinarily important area for the Commission. And this has been helpful to us in understanding the challenges that are in front of us. So thank you very much. With that, we're adjourned.

<Whereupon, at 11:40 **a.m.**, the

Commissioner's Hearing adjourned.>