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COMMISSION MEETING -BRIEFING ON STATUS

OF NUCLEAR MATERIALS SAFETY

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TUESDAY

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CHAIRMAN RICHARD MESERVE: Good morning. The commission is meeting this morning to on important and developing issues in the materials safety strategic arena. This is the first of the arena briefings which we have every year in a variety of different areas. This year we're doing something different than we have in the past and it's in the nature of an experiment. This year we are seeking in the arena briefing to focus on a variety of the issues that the staff contemplates will be important over the coming year, not necessarily for the purpose of resolution or option development at this time so much as an opportunity for us to have an exchange in the background, learn some of the background on those issues have something in the nature of an educational program. As I'm sure everyone recognizes, the nuclear materials safety strategic arena encompass a broad range of activity, everything from uranium recovery sites to fuel cycle facilities and thousands medical, academic and industrial licensees that are regulated by the NRC or the 32 agreement states. This arena is one that is the principle responsibility of the Office of Nuclear Materials Safety and Safeguards. But it also has important contributions from the Office of Research, the Office of State and Tribal Programs and

the regional offices. We very much look forward to your presentation this is morning. I know that this is an arena in which there are a diverse group of activities that are underway and I understand that we're going to be focusing on four areas of particular focus this morning. Dr. Travers, would you like to proceed?

WILLIAM TRAVERS: Thank you chairman and good morning. As you pointed out, we are here to participate in the experiment, this is the first in a series of arena briefing this year and consistent with commission direction as you've indicated we intend to focus on policy issues that are likely or could come before the Commission in the coming year. A few of those include in key policy areas, in this arena, that we intend to discuss include control of radioactive sources, general guidance on dose, to members of the public, clearance and commodities, and evolving materials issues. Carl Paperiello, the materials manager for the arena will begin the presentation and make the introduction to the staff who are here to support us.

CARL PAPERIELLO: Thank you. Mr. Chairman, commission, with me at the table I would like to introduce Paul Lohaus, the director of the

Office of State and Travel Programs, Martin Virgilio, the director of the Office of Nuclear Materials Safety and Safeguards, who will make the bulk of the presentation and Bruce Mallett, the acting Region II Administrator. Also behind me, to answer questions that you may have in various offices that all contribute to the materials program are, Shuk Fidana, from the Office of Research, Cheryl Tradier, from the Office of Research, George Pangbern, from Region I, Dick Wessman, director of the Incident Response Office, Guy Caputo, director of OI, Frank Hongel, director of OE, and Don Cool, director of the Division of Nuclear Material Safety and Safeguards, director of the Division of Industrial Medical Nuclear Safety. I'm sorry. As requested by the Commission, the briefing is going to be primarily covering the policy issues that the staff expects the Commission will deal with in the next year. We've got to recognize events such as the September 11th event that can cause changes. So if I was doing this four months ago, it might be a different set of topics then we are concentrating on now. And six months from that I can change. And while part 35 is not specifically addressed in this briefing, we do note that Congress has asked for a report on this rule. The report is

now up at the Commission.

And just recently, Friday, we received a letter on the rule that we're responding to. And we will be relaying information to you about our response. And that's being developed right now from the society of nuclear medicine and the American college of nuclear physicians on the rule. And we also recognize in this area, there are policy issues that are currently before or right, for example, I saw a paper yesterday going to you that discusses the internet sales of radioactive products. Your papers on the regulation of ARM, the use of, and how we're going to use, ICRP 60 and I always call it IcRP 60 plus because it's not just one publication, it's a number of them, revisions to part 40 and jurisdictional issues related to source material.

And lastly, I do want to note that most of the resources in this arena are devoted to bread and butter work, including licensing, inspection of event evaluation and other activities related to control material to ensure the protection of the public.

And as the chairman mentioned in his opening remarks, it is supported by a lot of offices. The office of state and tribal programs, which the agreement states regulate almost 80% of the material

licensees in the United States, the office of research, developing to technical basis for much is what is done in material, the work on the clearance, the technical basis for clearance, risk assessment from various materials and exempt materials, and the office of investigation who is constantly revealing and had a very interesting report the other day that I think we're going to have to deal with on a generic sense and that it deals with medical personnel practicing medicine on each other without a doctor's prescription.

But, you know in the course of investigation you do get issues coming up like that. And of course the support from human resources, not only in a recruiting area but training, which is important.

And I will, at the end, go back and talk a little bit about capital, human capital investment. And of course the office of enforcement or -- yes, the office of enforcement. We've lumped the topics under control of radioactive resources, federal guidance, clearance and commodities and a whole host of issues under the evolving materials program. Marty Virgilio will make the continuing presentation.

MARTIN VIRGILIO: Thank you Carl, good

morning. I'll start my presentation on slide three of the handout we provided. That's on the control of radioactive sources. One of the topics we'll address today.

And what I want to do is talk about the accountability, physical protection and international issues that we're dealing with. By way of background we've been working both at the national and international level to improve the accountability and security of sources. This involves licensing, inspection of the use of material, event evaluation and analysis and improved ability to track sources and ensuring the safe final disposition of sources. NRC has supported efforts to have DOE take possession of greater than class C sources as well as orphan sources. We've been working with the states and the CRCPD as well to expand their orphan source recovery program. We've been working on a general license registration program. And that program is completing its first phase of activity and moving into the second phase. In the international arena, NRC has been helping shape the IAEA's action plan and code of conduct on safety and security of radioactive material. As far as the policy issues in this area, our objective is the prevention of radioactive source

incidence due to loss of control. In addition, since September 11th, the control of sources has become an increased issue because of the risk associated with radiological terrorism. Our efforts in this area have involved coordination with other government agencies and other organizations to deal with disposal of greater than class C sources, orphaned and unwanted sources of radioactive material, and controlling the influx of radioactive material from outside the USA. The NRC continues to implement the general licensing program in order to increase the accountability for possessors of generally licensed sources. In light of recent events we've increased licensee security and control over radioactive material. This has raised policy issues associated with the security responsibilities of our licensees and other government agencies. In parallel, IAEA is pursuing initiatives in all of these areas and proposing additions to it's action plan and code of conduct on the safety and security of radioactive material. We do intend to engage the Commission over the next year as Carl indicated on a set of targeted actions to increase the accountability for physical protection of sources. These recommendations are being developed today for commission consideration.

For example, we'll be looking at additional security in control of portable sources, the methods with which they must be secured, the areas in which they must be stored. The staff plans to continue to offer recommendations to the Commission on the proposed changes to the IAEA action plan and code of conduct as they engage in responding to the terrorist activities of September 11th. These will consider the cost benefit of mandatory return of disuse sources and also increasing the rigor around export of sources from the United States. We've got a lot of stakeholder interest and interaction, some of which I've already spoken to. Our objectives need to be balanced here, I think in terms of burden, safety, and realistic expectations for the folks that we regulate. The beneficiaries of the use of the materials could be affected if we don't make sound decisions in this area. We could preclude and actually cause safety problems if in fact we were to not allow medical use or in some way restrict the use of radiography in ensuring the safety of construction activities. So the NRC will continue to interact with state, federal, international agencies and organizations to address the control of radioactive sources and including the Department of State, DOE,

CRCPD, EPA Customs, Canada, Mexico, and other organizations.

The next area I wanted to talk about is shown on slide four. That has to do with federal guidance on dose to members of the public. What I wanted to touch on was the update of current guidance that we operate under today, talk a little bit about dose limits and optimization as well. By way of background in this area, federal guidance is meant to provide the federal agencies with a common basis from which each agency could set its own limits and operate. Until 1970, the federal radiation control council provided this guidance.

The currently effective guidance on dose to members of the public was issued by the federal radiation council in the 1960 - 61 time frame. In 1971 there was authorization to develop federal guidance which was transferred from the federal radiation council to the environmental protection agency. The radiation quantities used in this current guidance that was developed back in the 60's are no longer used in radiation protection today. The guidance currently recommends a dose limit of 500 millirem per year which we now consider an unacceptably high value for doses to members of the

public. Therefore the guidance we seek needs to be updated to reflect current practices and the current philosophy in radiation protection. The latest draft of this guidance document was prepared by EPA in the year 2001 and sent to ISCORS as a mechanism for reaching agreement across the federal family on a set guidelines. Some of the stakeholders raised concerns about this guidance that was provided in 2001 because of the absence of clear numerical standards. Efforts are now underway to produce a second draft. And we're using that ISCORS as an opportunity to continue to coordinate federal agreement around a set of guidelines. With regard to the policy issues embedded in this, the drafting of the new guidance will require us to address a number of issues including what are the roles of dose limits, what are the appropriate dose limits, how does one go about optimizing around those dose limits and what are the adequate levels of optimization, what are the roles of constraints in this process and how does the guidance reflect different styles and different standard setting procedures within the federal agencies, particularly if you look at the Department of Energy, Environmental Protection Agency and the NRC and the differences in which they regulate their industries. If you think

about examples in this area, you could think about a dose limit that could be set under these guidelines on the order of 100 millirem per year and a constraint set lower for a class of activity such as decommissioning. An optimization around decommissioning, looking at ALARA, and a goal to achieve a better performance on a cost benefit basis. As I mentioned earlier, there are differences in approaches being exercised by the different federal agencies. And this has been a challenge in terms of coming to agreement about how to format the federal guidance.

But, nonetheless, I think that the bottom line is consist desirable dose and consistency in protection of the public. And so I do see that there is opportunity for success in this area. With respect to commission engagement, we've drafted a set of suggestions as starting points to develop this guidance. Once this draft has been developed and run through the ISCORS subcommittees -- and we have something that we believe is acceptable -- the Commission will be requested to review and approve a draft before we do any further work on that draft or before it goes to higher levels in the ISCORS organization that we've established. So that's one of

the issues, again, that we come back to is what will be the appropriate numerical values, how will they be used this process. In terms of stakeholder issues, we've worked with this draft guidance internally. Within the NRC we've established a subcommittee involving representatives from research, from NRR and from NMSS so that we get a consist view internal to the NRC. We recognize that there's related work ongoing within the Department of Energy, looking at the World War II Japanese dosimetry. We recognize there are updates going on and a revision to BIER 7 is also on the horizon and we also see that ICRP has ongoing revisions beyond where Carl talked about, looking beyond where we are today on ICRP 60. So we're continuing to work with federal and international counterparts along these areas. And it will inform our decision making as we move forward in terms of establishing new federal guideline on doses to members of the public. That's all I want to say on that issue. If we turn to the next slide on clearance and commodities I want to briefly touch on release of materials and some stakeholder issues and what's happening in the international front. By way of background back in this area back in June of 1999 the Commission invited public comments through a Federal

Register notice indicating that we were examining approaches for control of release of solid materials containing very low levels and concentrations of radio isotopes. In late 1999 and in 2000, NRC held a series of public meetings on this topic and solicited extensive stakeholder views and interest in this area. In May of 2000 the staff briefed the Commission on the results of these public meetings and the status of the technical basis development project and some of our international interactions on this topic of control and release of solid materials.

In August of 2000, the Commission directed the staff to contract with the National Academy of Science to do a study in this area of alternate approaches and report back to the Commission. The National Academy report is due in February of this year. And the staff will be providing additional recommendation to the Commission subsequent to the receipt of this study.

But the policy issue that we have before us is the Commission adopting an approach for controlling the release of solid material that is both protective of public health and safety and that is implementable, that will not decrease public confidence and is consistent with other standards.

We will be engaging the Commission in this activity, as I just previously noted. What we expect is the National Academy study due to the Commission in February. And subsequently, probably within three months of receiving that National Academy study, the staff will be providing recommendations to the Commission on a proposed path forward on the control of solid materials.

In parallel with what we're working on, we see a lot of progress being made in the international community around setting standards for materials being released from various countries. We have issues -- and I think the Commission is going to face issues -- on an increasing level, in terms of defining the safety and legal basis associated with materials that are being imported and possessed in the United States. For example, we had a recent case where finished steel was imported from Poland into the U.S. It contained a small amount of cobalt 60. It was manufactured into a barge. And only when some scrap was being released did we realize that this material was even in the country. These are the kinds of issues we're following up on now and present policy issues around the fact that here we had a state, Poland, exporting material that they felt was safe and suitable for

export and being received into the United States. And now we find that it's here and somewhat problematic. So these are the issues that we'll be dealing with in this area.

There are lots of stakeholder views and interests in this area of course. Views expressed by the stakeholders when we had those series of meetings back in the fall of 1999 and in May 2000 when we had the Commission meeting. The National Academy has also picked up on a number of stakeholder issues as they've moved through their process of developing recommendations. You see a varying range of issues coming up. The licensees that we regulate are expressing the need to see standards for release of material. You see the public expressing concerns over health effects and the liability associated release of material.

And you see the metals industry expressing concern over economic impact, particularly, if consumers are not willing to purchase products made from materials that are recycled. After the review of the results of the National Academy of Science, part of the staff's recommendations for proceeding with this subject will also include recommendations for the Commission on how best to continue to engage the

stakeholders around this topic. We also have various activities on-going in the international arena and with other federal partners. We have DOE preparing a preliminary environmental impact statement on scrap metal that they're proposing to dispose of. And we have the EPA focusing on activities around orphan sources and also import of scrap material. They have a project underway in Louisiana today working cooperatively where they're screening incoming scrap material to determine if there are any radioactive sources in the scrap coming into this country. We have ANSI who has issued a standard, 13-12, containing some clearance criteria. The EC, we understand, has established clearance guidance. And of course we're continuing to work with IAEA who is developing radiological criteria for commodities. Research is providing extensive support to us in this area. Several technical studies are underway. Carl has examples of those studies at his left. What we're looking at is technical information and bases to support our decision making, dose conversion factors for various materials, inventories of materials that exist today in this country and various survey methods around detectability issues. That's what I wanted to say on that issue.

The next issue I want today speak to is on the evolving material program on slide 6 of your handout. I wanted to touch on September 11th and the response to the activities we have there, improving our efficiency, effectiveness and some of our human capital issue. If you asked what are our over all challenges, each one of us will have a slightly different view on this but I think it's very compatible. We're dealing with an evolving program. We're dealing with adding and shedding projects and accommodating new work. We're dealing with a changing environment on a daily basis. We're trying to become more risk informed, and implement IT in a way that it becomes a solution, not a burden on our staff. We're trying to achieve clear and balanced communication, both internally and with our external stakeholders. And we have our challenges around recruiting, developing, and retaining good staff in the materials area.

By way of background, we have a number of factors, both internal and external, that are influencing our materials arena program. As our program evolves, we need to make changes to keep up with changes in technology for the various uses that we have to regulate.

And this will cause us to change, I think, in our focus, our level of rigor, the depth of our review, from what it is today, as the technology continues to evolve. We've begun to risk inform our programs, continued to plan and budget our activities and continue to challenge ourselves to make sure that we're focusing on the right activities, to make sure that we are doing the right work, to make sure that we're optimizing around our strategic goals and our objectives. We continue to identify areas where we can make program efficiencies. And we've begun to affect the work force and skill mix issues. We continue to work to risk inform our programs. We've integrated the results of eight case studies that we started on a little bit over a year ago and who we've considered additional information in terms of risk informing our programs. And we see that that's coming now to bring us to believe that we've identified the right screening criteria and have given us insights on how best to develop safety goals in this area. With regard to external factors, of course we've got the issue of the increasing numbers of agreement states. We have 32 agreement states today. In the very near future we'll be moving to 35 as Wisconsin, Minnesota and Pennsylvania move into this category. So by 2005

our current projections are we'll have 35 agreement states. This will take us to a position where we'll be regulating only about 20 percent of the material licensees so we're talking about roughly 4,000 out of 21,000 specific licensees in the program. That will cause us to move closer to a national materials program.

With regard to policy issues in the area, in my mind it's how best NRC will achieve the proper balance to meet our new responsibilities while continuing the efforts to control our resources, especially as our materials license population tends to shrink. We'll be continuing to engage the Commission on these issues as our programs continue to evolve. We continue to analyze options that are outlined in the NRC Agreement State National Materials Program Working Group report, and we'll continue to work forward in stream lining our program in that area and particularly noteworthy is a study that we've been working on in looking at lessons learned from the IMPEP program that we've had on-going for the last several years. We've completed the first round of IMPEP reviews, started on the second round and we've stepped back and said, what are our lessons learned there. We'll be engaging the Commission on some of

those issues in the near future. We've taken steps to stream line our rule making process We've begun to further risk inform our programs. We intend to build on the phase one and phase two materials program studies and initiate a number of business process improvements in the near future. We'll be looking for Commission guidance on post September 11th activities and also on how best to improve our efficiency and effectiveness initiatives. Guidance in these areas will help the staff address some of the OMB issues we're currently dealing with in terms of work force restructuring. With regard to risk informing our activities, the staff will be seeking approval of some draft safety goals and metrics that we've developed. We expect to send a paper tore the Commission in the spring of this year on that topic.

With regard to stakeholder involvement, our programs continue to evolve. And we'll most likely succeed, in my view, when stakeholders are given the chance to participate. The public, the regulated community, the agreement states all play a very important part of our programs as they evolve in the future. Those are the policy issues I wanted to touch on. And I'll turn this back over to Carl to summarize.

CARL PAPERIELLO: I would like to wrap up a couple important points, all the points that Marty covered are important but I want to touch on a few issues. Slide six -- seven rather. Ensuring the safety of materials. A year ago these efforts were concentrated on greater accountability of sources with the assumption that if we knew where a material was, it was generally safe. And malicious activity, what we had seen up to date, was not life threatening. Of course, as a result of September 11th, I don't think we can hold those assumptions. So now, when you talk about ensuring safety of material, we have to consider the potential for malicious activities and maybe even some of the assumptions about what is self protecting needing to be reconsidered. This is an area where there has been international interactions. And now those interactions have escalated. There are a lot of intra-governmental activities in this area. All of these interactions, what we do in decisions made are all going to involve Commission policy decisions. With respect to the standards, Marty talked about the work that we are doing on standards.

It's -- I break down standards into two areas. There are technical basis and the actual, what is the standard. And I'm going to use clearance as an

example of what's happening. But it's happening in all of the areas. The technical bases have evolved. And you have a paper in front of you dealing with our interactions with other people on ICRP 60 Plus. But this is our report on the technical basis for clearance which is NUREG 1640. We recently sent to you -- we may have sent earlier versions -- the IAEA's guidance and technical basis for clearance.

And yesterday I downloaded from the internet, the European Union's procedure for clearance. And the point is, the technical bases, although the standard is the same, the technical bases are really different because there are different assumptions in the modeling that is used. With our modeling, probably being the most sophisticated of any of it, but the fact is, that's just the tip of the iceberg because I can show you thing, for example, the IAEA safety series, which duplicate some documents both NCRP has put out and we have put out years ago in the regulatory guide series. But they're different. Even though they do the same thing and they're generally the same, they use different bases. Some of our documents go back as far as ICRP 2, some use ICRP 30, some use 60. The practical matter is not all isotopes are covered in 60. So in some documents

mix 30 and 60 and the like. And there are policy decisions that have to be made. You say, well, the Commission, if I set the standard and the staff deals with the technical issue, really technical issues do involve Commission decisions on policies on these assumptions. And of course, the limits themselves are evolving and we interact with international organizations, as well as domestic. In fact, personally, just the sheer volume of the material is a burden, just to keep up with knowing what's there. We talked about the evolving materials program. There are issues that are driven by cost and the fact that we have just a small set of the licensees, at least for by-product material. I think to address the burden, there is a real need, in terms of streamlining, to look at risk because in fact we may put a lot more effort in certain areas than is warranted by the risk. But I think September 11th points out the need to have a national program that can mobilize and move things fast.

And the fuel cycle represents challenges. We don't have a lot of new activity but we -- and probably more of a 2003 issue, a new enrichment facility potentially. And with on the one crosscutting issue, I want to talk about is critical

skills, human capital. The NRC needs in the area of, all our needs, in some ways are unique. But I just want to talk about how physics, radiation protection, our skill needs are broad. The skills I might need to have an RSO for a university or community hospital are significantly different than what we need. When I became a health physicist in the early '70s, we had ICRP 2. I could calculate any thing in those tables with a slide rule and look-up tables. Today, to do the current dosimetry, we need computers, the computer codes to do the calculations are not readily available. You involve Monte Carlo calculations. The computer code STELLA has been a God send to God knows how many graduate students. When I go to health physics meetings people are constantly using new biological models, biokinetic models. Once you build your model, you can plug it into the STELLA box and it will solve all the simultaneous differential equations for you.

But it's a sophistication, a complexity.

This is just an internal dosimetry, a similar as a case in environmental monitoring, instrumentation.

And whereas a person who implements a program in an institution may need superior management

skills, generally, most of the technology is boxed where we're dealing with a lot of things where we're being technically innovative, we are dealing with the appropriate standards and really dealing with going anywhere from the basic health effects through the dosimetry, through the modeling, through the establishment of standards to the management of the implementation.

Now, I guess I'm finished.

WILLIAM TRAVERS: That actually completes our presentation, Mr. Chairman. Thank you.

CHAIRMAN RICHARD MESERVE: I would like to thank you for really a lightning tour through a large area. Let me turn first to Commissioner McGaffigan.

EDWARD MCGAFFIGAN: Let me ask a series of questions, some of which will hopefully be short so that I can get to the latter ones. You mentioned the National Materials Program. We have had recommendations from that working group for some time and had a meeting with the CRCPD and agreement states last summer. When can we expect staff recommendations as to how to proceed when dealing with that report?

WILLIAM TRAVERS: I think Paul is prepared to answer that question.

PAUL LOHAUS: In response to that,

Commissioner, let me first say that what we're doing in look further at the National Materials Program report recommendations is addressing that in the context of the response to the chairman's tasking memo. We're trying to integrate that with the Phase II report and the business process initiative that's underway within NMSS to try to integrate this together. And our thought here is to really look at development of some pilot programs. And we're in the process of flushing that out. We want to work that out with the states. So we don't have a firm schedule at this point in time. But it's an area that we want to address as a part of the response to the chairman's task memo and to sort of fold this together and look at doing some pilot to help demonstrate the ability and the fact that the states have resources to help develop products that is can be used in the National Materials Program as well as, say our ability to accept and use those products, to give us some efficiency gains.

EDWARD MCGAFFIGAN: This summer can we expect an answer?

The chairman's tasking memo asked for something by February.

CHAIRMAN RICHARD MESERVE: December.

EDWARD MCGAFFIGAN: Was it December?

Okay. So by May, June, will we have that?

I personally think you probably are on the right track by developing pilots. But we look forward to seeing the paper is all I'm saying.

MARTIN VIRGILIO: Bruce and others were involved in this. If I look forward to where we were in August, we had laid out a plan back in August looking at the Phase II report, looking at the national materials program, looking at the BPI initiatives we were undertaking in this materials arena. Then we had the terrorist attack of September 11th. It really changed a lot of our thinking in this area. If you want specifics in terms of some of the recommendations in the Phase II report would have had us doing less inspection activities, less oversight activities, whereas, in light of terrorism and terrorist attacks, we may want to rethink some of those activities.

What we have done now is we've gone through the Phase II report and identified those areas that are pretty much independent of what we are doing in order to protect the nation from terrorist activities. What we'll be doing is developing a paper this spring to take the residuals from Phase II that

don't have any impact on the safeguards and security programs, looking at the national materials program, looking at the BPIs and laying out a new course of action that would be responsive to the chairman's tasking memo. Ultimately, our goal is to make sure we've got the right resources focused on the right things, as Carl eluded to, trying to bring risk insights into this and make sure that we're not expending resources on areas that are not warranted from a safety perspective but also recognizing some of the things that we thought we were going to do before September 11th have now all changed. So the answer to your question is, expect a report in the spring to sort over lay out to where we're going on these topics,.

EDWARD MCGAFFIGAN: Let me switch to another topic. Mr. Virgilio you talked about 500 millirem being an unacceptably high value in talking about guidance. My recollection is that the 1994 or 95 guidance that EPA put out had, at least for brief periods of time the notion that 500 may still be acceptable. They had not been dealing with atomic energy acts but dealing with norm. I remember the EPA discussion. Now, clearly, they may have changed. My understanding in terms of the guidance they gave last

year, there were no numbers. But 500 millirems is also, I think where FDA is in terms of implementing the codex alimentarius with regard to after a nuclear event, what is the acceptable level per year dose as a result of consuming food products. So it's a -- and Mr. Clark at the IcRP was talking -- Dr. Clark -- about 300 millirem which is approximately background, being a number where, you know he saw some magic in 3's. I don't think he's Catholic but he saw some magic in 3's, a few years ago. I think he's been talked out of that by his colleagues but 500 isn't that far off. Five hundred is also where we are at least for when I somebody visited a patient and we decide that as long as they're properly informed that they might get a dose. That they might visit a loved one. So I just want to argue with you a little bit that we have come to the conclusion that 500 millirems is an unacceptably high value. It's not the routine value. Most of the ones I've tipped off are cases, visiting a patient, a loved one, you know, brief periods of time I think is what EPA said in its '94 Statements of Considerations, which apparently are going to change. But it's a number we sometimes have to deal with. So I just say that to you: It's less a question unless you have a reaction to that.

MARTIN VIRGILIO: No: I don't disagree with you at all. When you are thinking about intervention, naturally occurring background levels, and doses to family members, I think you've hit all the right points.

And we don't disagree with you at all.

EDWARD MCGAFFIGAN: You've mentioned this cobalt 60 story from Poland, the Polish steel that got manufactured into a barge you said that could be somewhat problematic. Could you tell me, is it really problematic. I remember there was a little bit of cobalt 60 in some knives and forks that I think the navy found down in Norfolk. Our colleagues at EPA basically said don't worry. I don't know whether the Navy threw out the knives and forks or not but they said there was no health or safety issue. This was back in '97 or '8. So is this an issue in this case because the cobalt is a large enough level that you are getting a real dose or is it a case where the calculated dose is sub-millirem year and it's not really an issue?

MARTIN VIRGILIO: It is the latter, as I recall the issue on this we were seeing on the order of 20 picocuries per grams and where we see 500 as a threshold for action. So it's not so much the public

health and safety involved with the barge or the steel that was imported but I think it is more the policy issue. There could be other imports at higher levels.

WILLIAM TRAVERS: This is really emblematic.

EDWARD MCGAFFIGAN: I understand there have been but, I hate saying something is somewhat problematic and it indeed isn't, and in this particular case it may not be. At 20 picocuries per gram it doesn't sound like --

BRUCE MALLETT: The issue is consistency in the approach. If one country or one state entity determines that this amount can be released and then the receiver determines that's unacceptable to receive it at that level, that's the policy question, having consistency in their approach to what level is releasable and what level isn't.

EDWARD MCGAFFIGAN: Carl has all those documents at his desk. What is the EU level for cobalt 60?

CARL PAPERIELLO: The IAEA level is 27 picocuries. The EU level is ten percent of that. I know there's a ten -- ratio. The issue is really not a question of, likely safety. The question really is one of policy and legality. Strictly speaking, as our

rules are now written, the implementation of the Atomic Energy Act material requires the possessor as a general license to import as long as you have a license to possess or the material is exempt. Since we do not have a clearance standard, this material is licensable in any quantity, legally. Because I have an OGC opinion on that.

So the question is, what we have done in the past is we have said it's okay. So we have granted a de facto exemption by way of just a letter. I mean, the Commission has been informed has not been done without the Commission. But it's sort of an irregular -- and with all of the public attention on clearance in the last two year, the issue in this case is that it's not quite what we've done in the past by somebody in the agency writing a letter, we don't have a concern with the safety of this material, and that is the end of it.

WILLIAM TRAVERS: The obvious other issue is public confidence in the face of all of these differences.

EDWARD MCGAFFIGAN: Well as long as the EPA continues to agree with us that something is not a problem, as they did -- for some reason they were in the lead on the navy forks.

But, you know, I think you're all making the case that at some point we need to regularize this. I look forward to the academy report and I look forward to, hopefully, providing a standard a standard in this area sometime in the not distant future.

The last question I have may be quick. We didn't talk about fuel cycle facilities at all today. But we have been talking about a timeliness standard for completing actions on fuel cycle facility licensing amendments. And the NRR standard is goal, it is a goal. It's not 100 percent carried out. I think the NRR is carrying it out 99.7 or .8 percent. But it is to complete licensing actions within two years, provided there is no hearing. Why would NMSS require three years to complete licensing actions for fuel cycle facilities?

MARTIN VIRGILIO: Right now I'm just looking back at the timeliness of a fuel cycle licensing. And activities and inspections.

And as far as licensing activities, our current targets are 75 percent of the licensing actions completed within 180 days from the date of acceptance and completing all of our licensing actions within three years from the date of acceptance. So you can see it's not just three years. There are sub-

tier goals within that. And it's a matter of resources, how you want to dedicate your resources in particular areas. We have a limited amount of resources. To do it faster would require more resources.

EDWARD MCGAFFIGAN: Give me examples of licensing actions. I mean, as I say, NRR is achieving -- they actually get 95 percent done within one year and then 100 percent done within two years. It's taking more than two years to complete a licensing action that is what's troubling me. That two to three year period, you know, when I used to work for Senator Bingaman and we would tend to kick things down the road he would always tell me it doesn't get any easier tomorrow, to tell the staff we got to get on with things. We're carrying out terribly complex licensing actions in NRR space with regard to license renewal etc. within two years, and meeting the goals. I don't know that you have any more complex actions that would require more than two years to complete.

MARTIN VIRGILIO: I agree with you. They are complex. But I mean, not so that if you put enough resources into it you could not accommodate the -- I want to make sure that if record is clear, in 1991 we completed 94 percent of our licensing actions

within 180 days.

EDWARD MCGAFFIGAN: In 2001 you mean.

MARTIN VIRGILIO: In 2001. So it is not that there's a lot of those licensing actions, there are some, they are complex, and they take a little bit more time. And again it is a trade-off with the resources.

EDWARD MCGAFFIGAN: So 94 percent get done within 180 days: They're talking about the other six percent and how much time do we give you to get those, and you're asking for two and a half years.

MARTIN VIRGILIO: I don't have statistics in front of me with regard to when we completed those. More resources would help.

EDWARD MCGAFFIGAN: There must be dead periods in those three year -- the ones that do take three years or more than two years. There must be dead periods during that consideration where somebody isn't working on it. But I cede the floor Mr. Chairman.

CHAIRMAN RICHARD MESERVE: Commissioner Merrifield.

JEFFREY MERRIFIELD: Thank you Mr. Chairman. I have four questions but first I'm going to precede it with a comment. Immediately after the

events associated with September 11th, President Bush went on television.

And while I can't quote him, said something to the effect that we should all remain vigilant on issues associated with terrorism but we should as a nation try to carry on with business as usual. And I want to compliment the staff for meeting both of President Bush's goals. I think the staff has been working exceedingly hard to try to identify ways in which we can improve our response to terrorism and we, as a Commission, have been actively engaged with the staff in terms of trying to bring some resolution to some of those suggestions over those issues.

Similarly, however, in light of the presentation we've had today I think the staff has done a good job on keeping its eye on the ball in making sure we are meeting our health and safety mandates as an agency. And in fact we are conducting business as usual, keeping those things moving forward. So I want to compliment the staff on both of those regards.

The first question that I have goes to a recent issue we've been involved with with some of our international partners and with our agreement states. That was the issue of the iridium 192 source that had

some issues during a shipment from Sweden, through France, through Tennessee and ultimately ending up, I believe, in Louisiana.

While we are still in the midst of working with those countries and with those agreement states to identify what happened and what we can do to protect the individuals who may have been exposed, for me it raises a potential for a policy issue for how we might reassess the way in which we interact with agreement states especially as it relates to international shipments and the interaction between ourselves and our counterparts on a bilateral basis in the international community. And I didn't know initially whether the staff had any insight, any thoughts in that regard or whether it's something you may be looking at down the road.

MARTIN VIRGILIO: First I would like to say that when that event occurred our attention just immediately went to, could that possibly be a terrorist incidence. That was one of our first question that we asked and one of the things we focused on to make sure that we had off the table immediately, as what was the cause of this and was there some terrorist activity involved in this?

We started interactions with Department of

Transportation, with the agreement states, with international counterparts. And we're still in the process of trying to understand the root cause of that event.

Are there policy issues involved?

That is your question.

And I think we need to continue to focus on that and see if, as a result of this event, there are not policy issues associated with further protection involving international shipments in light of terrorist activities.

JEFFREY MERRIFIELD: I think the harder part of my question is, obviously -- as we should -- and I'm very supportive of out agreement state program but it gets more complicated when we get into an international arena, in attempting to have the states fill our shoes vis-a-vis international partners, be they Sweden, France or others.

Without you commenting on it, that would obviously be something I would be interested in, understanding the staff's perspective on that as you do an assessment on what happened with this effort.

The second question I think would be directed to Carl and/or Marty. About a year, year and a half ago, I had a series of conversations with you

that have continued up to know about a pattern that I perceived was developed down in the southwest where we had a number of Troxler gauges that were going awry, they were stolen out of the backs of various pick up trucks and construction vehicles. There's a lot of work the staff has done to track that down and try to get a better understanding with the FBI and others as to what was happening.

But it raised the issue that I had questioned at the time, should we reassess our policy, only requiring those folks to chain Troxler gauges to the back of those pick up trucks. Or should we think about requiring a more vigorous methodology for protecting those as they are taken from job site to job site?

And presumably, there may be a further policy consideration for the Commission on that I didn't know if you had some further thoughts given what has happened over the last few months.

CARL PAPERIELLO: I've had a lot of thoughts. I have directed NMSS to develop a policy and procedures on how we're going to change what -- It's a question over policy. The rule says, part 20 says you will secure materials against unauthorized removal. That's the basic rule. It's a very

performance-based rule. You secure it against unauthorized removal. We have accepted up to now, the chaining of gauge to the flat bed of the truck as meeting that requirement.

And I have directed NMSS to particularly, in light of the events, and particularly in light of what happened and the potential for malicious use of material to develop criteria, guidance, that would frankly, make that practice unacceptable. But of course we'll have to give people opportunity to develop alternative storage means. I have checked out on the internet, there are devices you can build into flat bed trucks which offer greater security. And any way, I'll let Marty take it from here. But I issued a green ticket to NMSS to develop a guidance on what now, essentially tell people the chaining is unacceptable and what would be acceptable. This will have to be phased in. And Marty, do you want to talk about what you're actually doing?

MARTIN VIRGILIO: Actually this predates the September 11th terrorist attack when we started looking at these activities.

And in response to Carl's direction we had in fact been developing some additional guidance and policy changes for commission consideration. Then we

had the terrorist attack of September 11th. As part of our response to the terrorist activities, we have developed a set of interim compensatory measures that are being brought to the Commission, I think in the materials area, this week. As part of that package you'll see additional requirements along the lines of the issues Carl has raised trying to get to those underlying interests. So there is within that package additional requirements in this area. That's the first step of continued efforts to further control the sources.

JEFFREY MERRIFIELD: I'm pleased to hear that. As I mentioned in our conversations a year and a half ago, this performance-based standard doesn't seem to be operative any more. And I'm supportive of the staff taking these efforts to more appropriately secure these sources with our licensees.

Marty, you brought up the issue of Poland. And I want to follow up in a little different perspective than the way Commissioner McGaffigan had regarding the issue of steel imports. Obviously, there are areas in which we have authority. You mentioned a little bit about the EPA programs down in Louisiana, those in which they are using grappling hooks that have embedded devices which are used to

identify contaminated materials right at the source as those are being taken out of ships as they come to our ports. There's a pilot which seems to be very successful in that regard. Similarly, there have been enhanced efforts and reviews on the part of the Customs Service to think more about how they may go and do a better job over identifying imports, you know, given the huge number of cargo boxes coming into our nation's ports now. And a limited ability of doing identification or inspections of those, is there a way to enhance the ability to do so?

The policy question I have coming out of this is, is there given these separate issues by the different federal agencies, does it make sense -- or perhaps the staff is already doing this -- does it make sense to try to have a more holistic approach interagency-wide to come up with a national policy to identify and appropriately resolve the issues of radiological materials being imported into the United States, be they commodities, be they scrap metal, or be they finished products at our nation's borders. So we can avoid having these materials get into commerce where they are not appropriate and having to try get the horse back in the barn, so to speak, as it has already gotten out.

MARTIN VIRGILIO: Yes, as a matter of fact, what underscored that was a somewhat -- I think it was probably in the month of October we had an event where the response center activated. We had the Chairman, myself, Carl and many other people involved in a shipment that came into Port Elizabeth in New Jersey, and got misplaced on the docks for some period of time. That to me underscored the interfaces and all of the different federal agencies that are involved in this, as you pointed out, Customs, the Department of Transportation, and the NRC, all engaged around trying to identify where this material was, making sure it wasn't in the hands of some terrorist and that we had it under control. So clearly, yes, there is a need for, I think, a holistic approach to this that bridges across all of our federal family in terms of control of material being imported into this country.

And we'll be working on that as a part of our response to the tasking memo on responding to terrorist activities. We have some interim corrective compensatory measures that are being brought forward on transportation this week. They're not complete with respect to this issue. They go to a number of issues, but not as holistically as I think we need to

in the longer term assessment around this topic.

CARL PAPERIELLO: There are some efforts, by the Office of Science Technology Policy, in detection and coming up with detection methods and uniformity and the like.

I would like to, you raise two questions in the same general area dealing with the importation.

I think we had our priorities right. In other words, we insured the material was safe and that people are not getting exposed. And right now we're meeting the requirement, we need to know what happened. My guess is that it was packaged wrong. Nobody didn't anything else wrong.

But when it was put in a package, I'm hearing a spacer may have been left out and that would certainly make a difference if the material inside moved. We need to know that. We have a procedure, an incident response procedure dealing with material in transit because while it's in transit, it's under the jurisdiction of the Department of Transportation.

And in most case, states are in some kind of an agreement with the Department of Transportation. And we have a normal procedure. We offer them our assistance and the like. This one, when you cross an international border is somewhat different because the

number of people involved, the EPA has responsibility for ensuring protection on what crosses national boundaries. We have a stake because the importation is covered by a general license. The state has a role because it licensed the receiver. Of course DOT regulated the carrier. So there's a lot of people involved.

I think in response to your earlier question, after the dust settles on this and we get the facts we probably need to look at our incident response procedure to make sure there's anything we need to noodle. Right now I think our priorities in terms of the safety and the information are right. But I think you raised a point I wanted to make clear. Yes, we need to look at all of this and some of the newer thing to say, is there something we ought to rerack.

PAUL LOHAUS: If I could too, I would like to comment. I think the state in this case has also been very effective. They've opened the process. And they've welcomed help from NRC. We have had an inspector there, they asked to have an NRC inspector. They've used our operations center and the bridge line. We've had several conference calls involving DOT, the state, NRC staff, and in two cases we had the

licensee and representatives from the international reactor, of the Strevich facility on the line as well. Region four has been in touch with the regulators in Sweden. But it's somewhat akin to a national material's program issue but it has the international aspects weaved in. And I think you raise a very good point.

But as Carl knows, in this case I think that the process and the initial actions to ensure safety have been very effective. And the state, the NRC, and other federal agencies worked very well together to address this issue.

JEFFREY MERRIFIELD: I'm pleased that that level of arrangement with the state has worked out well. As you can imagine, I'm also concerned about state acts which might not be so open with us and the difficulties that may present for us in our agency relationship with our foreign counterparts. And perhaps looking at this, even though it appears to be a success, is there a more formula based system or a more rigorous system we should have in terms of how we interact with the states in the future just to make sure we do have that level of access the state so graciously has provided in this particular case.

Carl, getting back to your point, you

know, it's fair. Certainly, it's worth taking a look at. You also try to see good things coming out of bad. And perhaps this whole effort will give us the ability to interact with our federal counterparts and come up with that easy hand shake that I think Congress would expect of us as members of the federal family.

BRUCE MALLETT: Mr. Merrifield, let me add to that. I believe it's important that communication has improved in this area over the last several years not only between the NRC and the state organizations but between the NRC and the other federal agencies. I think it's something you have to continue to work at. But that's key, how we communicate with each other. And when the event occurs as to who's responsible for what part.

JEFFREY MERRIFIELD: Fair point. Last question I had, quickly. I want to compliment Carl. I know a couple of years ago I had encouraged you back when you headed up NMSS to get a little bit of handle in terms of the universe of areas in which we are involved with decommissioning and remediation and working on some of our legacy issues. I know Joe Holorange, for his part, put a lot of every into that as well when he had his previous position. So I

personally feel a lot more comfortable. We've got a better handle on that. But you didn't really go into any of the remediation issues now. I have an open ended question, are there any policy issues that we would expect that the Commission may have to grapple with this year associated with some of the legacy sites that we have.

MARTIN VIRGILIO: Yes. And we'll have another briefing scheduled for you on the waste arena activities and yes we will get into those issues with you.

CARL PAPERIELLO: There's going to be really extensive -- actually in getting ready for this one I created a whole bunch of yellow stickys and took them off because they deal with waste and not with this. But yes there are a lot of issues.

JEFFREY MERRIFIELD: I'm eager to jump into those as well. Thank you. Mr. Chairman.

CHAIRMAN RICHARD MESERVE: One of the areas we haven't talked very much in the question period was about your second issue, which was the development of the federal guidance.

And I'm curious about sort of how this got initiated and what the implications are for us. And here we had the Federal Radiation Control Council that

issued guidance in 1960 or '61 that apparently we've been able to survive over the intervening period without the benefit of updating that guidance.

And it's come to life again. What was the initiating factor for that?

And secondly, and perhaps more importantly, what are the implications for us when that guidance is promulgated?

I mean, do we have an obligation to conform our regulatory requirements to it?

What are we supposed to do when this guidance is issued?

CARL PAPERIELLO: I'll attempt to address that. I may need some help from OGC on this. It depends on how it's issued because there is two pieces. There is presidential guidance and then there's federal guidance and there's a difference. The last time presidential guidance was amended was in '87 or '88. Don't hold me to the exact date. That dealt with occupational exposures. And that was not coincidental or in support of. And we parallel in time with our amendment or changing of part 20 which did take a number of years to implement that. And that alter the occupation exposure adopted ICRP 2630 for our dosimetry. And right now though, from what I

see, -- and that was presidential guidance. What I see EPA doing right now is issuing federal guidance which is not the same as presidential guidance.

And I think in terms of even presidential guidance, the Commission has a matter of policy adopted it but I don't -- an this is where OGC needs to help me out -- my understanding that since we are an independent regulatory agency, we are now bound by it but we, in the past have followed it.

KAREN CYR: I think that's correct. If EPA promulgates something as generally applicable standard of the Atomic Energy Act, then that's something we're bound by and must implement. But the guidance and otherwise in terms of how the Federal Government approaches it and we've tried to be consistent with that as a matter of policy.

CARL PAPERIELLO: Again there's differences between federal and presidential guidance and what binding on whom. Clearly, federal guidance is at a lower level. You have federal guidance, eleven, twelve, and thirteen. I think it's more, as a practical matter, we use eleven and twelve because all of our models, everybody's models for calculating dose, used dose conversion factors in eleven and twelve, that's what they are. Thirteen is risk

factors for which we had an extensive interaction with the Commission and to which we do not use for any particular purpose at this point.

EDWARD MCGAFFIGAN: In terms of why now, the EPA put out this draft guidance in 1994 and they got substantial comment on it.

And it's taken them many years, I guess, to try to cope with those comments. And now they're apparently coming up with something else.

GRETA DICUS: Well, my understanding is that the '94 guidance, they basically just dropped. An then this was redone.

CARL PAPERIELLO: Right. This effort is a new effort. I almost believe, and I'll have to go back and look at my files that the old guidance was intended to be promulgated as presidential guidance, not as federal guidance. The Commission got a draft version back in October, I think. There hasn't been anything since the last meeting of ISCORS did not discuss it, other than the fact that it's still being worked on. I think that reflects something that Commissioner McGaffigan raised. That is, is 500 millirem acceptable, is 100 millirem acceptable?

And there is, in the old days, we had point limit, so if you had 500 millirem or 100

millirem, but even we have adopted 100 millirem in part 20 for general applicability. We have set 25 millirem for release, you know, decommissioning criteria. We have set 1 millirem for clearance.

And what is happening is that what used to be a point value is tending to be a range.

And I think that's one thing right now that the EPA is struggling with. And that's why it's been made difficult. So that's where it stands. And I don't know where it's going to come out.

NILS DIAZ: Isn't it a fact on the same issue, Mr. Chairman, that the fact that the actual dose limits that people have seen across the nation are way below the guidance impacting on their decision making, whether they get dose limits or not?

CARL PAPERIELLO: I think that's true.

But I think -- where the problem is, I think is the standards have come down and the standards are all below background. I mean, that's your problem. Your problem -- its one thing if background is here and your limits are up here: The use of a point value isn't too bad. And we use it, occupational exposure. You and I know whether a person gets 5.2 rem a year or 4.8 rem a year really doesn't make much a difference. One is in violation,

one isn't. When you start dealing with, when natural background is running at 300 and you're talking about limits of 100 or 50 or 20 or 1, these things are not quite as -- they're not a -- there's not an algorithmic solution to it. It's a policy, all policy. I think that makes it difficult. And trying to regulate norm and norm to the same levels that you'e trying to regulate AEA material from a practical matter is incredibly difficult.

CHAIRMAN RICHARD MESERVE: Let me suggest that one of the things we should think about in dealing with this is if this guidance is something that gets re-examined every 40 years since we have a point estimate that that's been the last time we've done this, that it might be very important for us to have a great deal of flexibility and to set a general framework but not be much in the way of specifics.

As you've noted the ICRP work, there's NCRP work that is always going on, there's Japanese bomb survivor data that's being updated, we have BEIR 7, there's a whole bunch of things that could affect this activity, including thought that is going on in a variety of fora about sort of changing the way we think about these things. And trying to have some guidance that doesn't lock us into specific or lock

the federal government in a specific way may be appropriate.

EDWARD MCGAFFIGAN: Mr. Chairman, did you mean four years or forty years since it since it was ‘61 to 2001.

CHAIRMAN RICHARD MESERVE: I said forty.

EDWARD MCGAFFIGAN: I heard four. I'm sorry.

CHAIRMAN RICHARD MESERVE: Let me say that I recognize that in the issue relating to the evolving materials program that this is a, that you have a bunch of activities that are underway.

And your thought about trying to integrate across the number of things that you're looking for so we have a coherent set of recommendations that come before the Commission. Those seem to be very sensible. I commend you for that. There was one point that Marty, you made in your presentation, that I wanted to follow up on. I'm not sure I understood exactly what you were saying. You said one of the challenges you're having to deal with in the evolving materials program was changes in technology. That could cover a lot of things.

And I do understand that changes in technology could effect things but I didn't know

specifically what you see as something that is a major challenge for us in that arena.

MARTIN VIRGILIO: One of the examples that we have before us is in the medical area, constantly changing technologies, new technologies, new methods for diagnostic and therapeutic treatment is an example where we're having to adjust as a result of that changing technology, adjust in terms of scope and depth of review or maybe even stepping back and looking at different approaches so that we've bounded in some way so that we don't have to go back and individually review new applications of that technology. That's just one example that came to me right offer the top of my head.

CARL PAPERIELLO: In medicine the obvious area is intervascular bracula therapy.

CHAIRMAN RICHARD MESERVE: There was an implication that maybe this was a more comprehensive problem than just that one set of licensees.

MARTIN VIRGILIO: I could go on to each of the different areas I could think about in the fuel cycle facilities, what we have coming in now is centrifuge technology being proposed by URENCO and USEC, while it's not brand new, we've reviewed this before for applications here in this country. And

it's in use in Europe.

There are new issues that we're going to have to engage our staff on. They're not particularly, it's not day in day out bread and butter work for them today. So it's going to require some retraining, some adjustments, we're have to look at our review guidance and make sure that it is sufficiently comprehensive and flexible enough to address the new technologies as we move forward. I could almost look in each area that we are regulating in the materials and there are examples of the evolving technologies that we face.

CHAIRMAN RICHARD MESERVE: My final question is sort of the inverse of some of the questions you've gotten here, having to do with imports of the materials into the United States.

You mentioned in passing, in dealing with sources that there have been, there are efforts you're contemplating having to do with exports from materials from the United States, which I understand now are mostly done under a general license. I understand there's been some concern that's been expressed in an international arena at least about whether we ought to take more responsibility for exports. What are you contemplating that that area?

MARTIN VIRGILIO: Just to provide a little bit of context, we have been working with the IAEA and I know that several of you have actually been involved with conferences and presentations in this area for an action plan and code of conduct that they have under development for the control of radioactive sources.

One of the provisions of their code of conduct that has been put forward is more structure around the export of sources which we haven't, up to this point in time -- as you've indicated this has been done under a general license. But would we require as part approving an export of a source, ensuring there was an adequate framework at the receiving end, that we knew who was going to be receiving it that the country had adequate regulatory framework around that receiver. These are some of the issues that are being discussed right now.

And I think our views are continuing to mature, particularly, in light of the terrorist attack of September 11th: But as of right now we have still not concluded but that this is worthwhile in terms of public health and safety or necessary for public health and safety.

CHAIRMAN RICHARD MESERVE: Is this an area where you're waiting the development of an

international consensus to then provide the foundation for what we do or are you plan to move out, make a decision before that.

MARTIN VIRGILIO: We will not make a decision but we're very actively engaged in formulating the international consensus. We have been working with the IAEA on their action plan, on their code of conduct. We have been providing comments. We will be engaging the Commission as we move forward in this area. But it is a n area where I don't believe at this point we would move out independently. I think the approach that we're on right now is to continue to work with the IAEA and engage the Commission on these kinds of policy issues.

CHAIRMAN RICHARD MESERVE: I urge you to do that.

Commissioner Dicus?

GRETA DICUS: Let me go and continue on with the code of conduct: And one of my questions was, when is the Commission going to get involved in this?

Because I know you are formulating comments. I understand that the comments being formulated, going through the Department of State as the U.S. position on the code of conduct, how is that,

is that the way it's being done or where are we.

MARTIN VIRGILIO: Where we are and most recently is, in response to the terrorist attack on September 11th the IAEA developed a proposal moving that was moving forward to the Board of Governors in the March time frame. As part of that proposal they've made changes and their thinking is continuing to evolve. But they've made changes in the action plan and the code of conduct to increase the control of radioactive sources associated with protection generally and protection from terrorism. It's those comments that are currently being collected by the Department of State.

And I believe we are engaging the Commission. It's not been formal, but I will have to go back and check. I'm sensing that we haven't been engaging as much as you would like to be engaged.

GRETA DICUS: I don't think you have.

MARTIN VIRGILIO: I got it.

GRETA DICUS: A little message going forward there. What I understand of the code of conduct is that some countries may not be able to meet it.

Is this going to be problematic to put something out or is it going to be able to have some

flexibility for countries that are going to struggle?

Or is it going to mean for example, maybe in what it is intended to mean, that if you have a country that lacks the framework, a receiving country that may lack the framework to ensure some security or safety of the material, the exporting country won't export?

Is that where we're going with this or am I jumping forward from where you're going.

MARTIN VIRGILIO: No: I think you're forecasting where this could go. Right now I think the underlying interest everybody agrees to in terms of ensuring that sources are adequately protected. At one point, we believed that they were very good. And I think we still do believe there are good provisions within the code of conduct but we didn't see these as needing to be mandatory. So we are arguing around flexibility, ensuring that where these provisions were imposed that they were imposed and it was providing a safety benefit for the cost associated with imposing this kind of structure and requirements. So our approach was to ensure flexibility, to ensure that we were not going to mandate a very prescriptive structure on top of the United States or on countries receiving the material unless it was necessary for

public health and safety.

But it could, as you forecast, it could go down a path where very prescriptive requirements are imposed in a mandatory way and we currently oppose that.

GRETA DICUS: Hopefully there's nothing in the code of conduct that we couldn't meet. That would be embarrassing. Let me go now to the draft federal guidance radiation protection that's floating around from EPA.

We have read it. Of course staff has read it and I know we had some concerns about some of the provisions in it.

And those, I guess, are in the process of what is under discussion through ISCORS. Is there any chance that the EPA will look at, as they did with the '94 guidance and say, let's not go there, let's not do this, let's just not take the document forward at all?

Is in any chance with what we're looking with now that they may in fact back off and say, no, we'll stick with what we have.

CARL PAPERIELLO: Well, I know there's somebody from the EPA in the audience. But I won't put them on the spot.

WILLIAM TRAVERS: We'll welcome them.

CARL PAPERIELLO: I would say that's a possibility. I'm speculating.

GRETA DICUS: We won't go any further with that. I'll leave that one there: I'm going to -- actually I'm going to switch gears quite a bit and maybe neither one of these questions, there's isn't any preparation to be able to answer it. And so if there's not, I will gleefully put it back down but I will pursue it at another time.

One of the things that is beginning to be discussed -- I've seen it, had it discussed with me and I've seen it cropping up here and there in the literature, on control of sources of radioactive material, looking at the control from the point of view, do we have gauges, for example, that contain radioactive material that we really don't need those gauges because there's a good alternative, X-ray machine, EMF, whatever that can do the same job and doesn't contain radioactive material?

To what extent at all have we thought about this and thought, when we get an evaluation sheet for a sealed source or a device that we look at, is this device really necessary, is there not an alternative, or do we have any statutory authority that we could even say something along those lines?

When we do an evaluation, do we encourage the agreement state who do an evaluation of a source or device, is part of that evaluation is there an alternative that does not use radioactive material?

MARTIN VIRGILIO: Today that is not part of the criteria in our evaluation process. It is something that I think some of us have thought about in terms of alternatives but it's not part of our program today.

GRETA DICUS: Should it be?

I mean it's controlling sources from another perspective.

CARL PAPERIELLO: I understand. I think that raises -- you're very much into heavy policy and law. I'll have to ask OGC to find out whether or not we would even have that authority to do it. To a certain extent we have. We have banned the frivolous use of material. Now the question is alternative. Although I have heard it discussed in the case of gauges, but you could also do it in other areas, for example, medicine and say, Why would we license a use of radioactive material when there is non-ionizing radiation ways of getting the same information. You can obviously see a lot of issues you get into if you do that, you can do the same with electric power, are

there alternative ways of generating power other than nuclear electricity and the like. Although it's been discussed in the past in gauges, I think there are legal things we would have to settle first and there would be a lot of commission policy in the other. It's actually a very profound question.

PAUL LOHAUS: Commissioner, I'm not aware of the states having addressed this issue. It's certainly in the area that’s talked about periodically but no concrete action that I'm aware of.

GRETA DICUS: I think it's probably going to become an emerging issue at some point. At some point we may need to get into it. The final thing I want to get into has to do with human capital. And this is where maybe the answers are not ready available. But do you have a feel, if we consider like NMSS, Research, wherever, how many FTE we actually expend on this course?

Cheryl, try to control yourself back there.

MARTIN VIRGILIO: It is a budgeted line item. I’m trying to remember if it's on the order of one or two FTE. We’ll get that.

GRETA DICUS: That's fine. That's a fair answer.

MARTIN VIRGILIO: It's budgeted at 1 FTE.

CARL PAPERIELLO: I want to clarify something on that. What we spend on ISCORS, the practical matter, if we didn't have ISCORS, we would have to spend the same resources accomplishing something very similar. It's really a very good platform for comparing things.

And I really think it's worthwhile, extremely worthwhile to bring convergence to issues.

GRETA DICUS: I'm not saying it isn't. We obviously need some sort of platform for this kind of communication. I think it's fine. I was just curious.

CARL PAPERIELLO: We could give you the formal number. But there's an awful lot of informal interactions that would go on regardless.

GRETA DICUS: And then the final question again, I don't think we have an answer to I, but do we have a way of determining how many CHP's we have at the NRC?

Certified health physicists?

MARTIN VIRGILIO: Yes we can certainly get the number, I don’t have that off the top of my head.

WILLIAM TRAVERS: I think the new HR database should have that kind of information.

GRETA DICUS: And then to what extent, this is back to the comments that you made about getting, retaining the kind of health physics, the radiation protection specialists that we need to accomplish what we have to do.

Do we have any program -- and I may not have if right people here to answer this question, do we have a program in place to encourage or help folks that are health physicists who want to become certified in the training and preparation for certification?

Because it's no small effort, as those who are certified know, to become certified. And to what extent we're doing something formally?

MARTIN VIRGILIO: There's a health physics society program not in the NRC itself. But we're very supportive of that program. Susan Woods, I believe this year, an NRC staff member is the coordinator for that effort. We've had a lot of our people take that course. It's a very, very good program.

WILLIAM TRAVERS: You may have seen some emails to that effect. We've been reminding staff of the upcoming educational opportunity of participating in that. So it's something we're cognizant of.

GRETA DICUS: Thank you Mr. Chairman.

CHAIRMAN RICHARD MESERVE: Commissioner Diaz?

NILS DIAZ: Thank you. Let me start with something that was mentioned several times in the briefing. It is the challenge that security of sources is posing to the nation and the NRC. This came to me in a very, say, lively meeting that I had at the end of the year where everybody in my family and a few friends started questioning me about the security of sources.

And of course there's a physician who runs a nuclear medicine lab said what will happen now if one of the moly cows that comes from my lab was to drop off a truck. The last time it happened in Tampa, the interstate was closed for several hours, multiple emergency programs in there, the whole thing was disrupted for hours, people questioned about what was happening. I mean it was just a simple moly cow whose substance is going to be injected in people's veins a little bit afterwards and there he was. Tremendous problem. So the issue is not only the security or the health and safety but the social disruption that comes with it. And most of the sources in this country are really at a level in which their potential health impact is very small. So the question is, as we bound

the risk and hazards of these sources -- and I'm not asking for anything that goes into the large sources or sensitive materials, have we made an effort to start planning for discerning whether this is a terrorist, which people will tend to think, what is the immediate things we can do to avoid social disruption from this small accident that is normally happening and could contribute to a climate that would increase radiophobia and create more problems. Have we been able to really bound these issues in matters that are amenable to solutions, if they happen?

Can we guide our federal colleagues into bounding the consequences in a manner that we actually are protective of public health and safety in the large sense?

MARTIN VIRGILIO: One of the things that we've done in response to the terrorist incident is work with the federal family through the Federal Radiation Protection coordination Committee. One of the products we've developed through that effort is just that, how basically to control and avoid social disruption. If there were a spill or some sort of event involving radioactive material, we agree with you, the health consequences would be small if any at all associated with some of the scenarios that we've

been evaluating. But the impact would be in terms of the public response.

And so we thought it was important to make sure that we had a coordinated approach to address these issues for communicating with the public around the real risk associated with some of these activities.

And we've developed some paper, some guidance, some communications plans quote unquote, if you will for dealing with this issue.

NILS DIAZ: But are you satisfied that we really have them developed to the point of implementation or should we be there?

MARTIN VIRGILIO: There's always room for improvement. But I think where we are right now is, I think we have something that's usable, that's workable that, should we have an incident or event, puts us in the position for communications with the public around risk in a better place than we were several months ago.

NILS DIAZ: I think this needs to be a finished product, I really do: Because you know like you questioned Marty when the source from Sweden, the first question you ask is, is this a terrorist. So this is going to happen. There's nothing that we can

do about it. People are going to question.

I think we need to be able to have a very effective plan in place to avoid social disruption as I'm sure we have a plan to avoid the health impacts. But I think this is an important part of our responsibilities. We need to be able to be effective in dealing with these issues. And I will look forward to having this, you know, really put out in a manner that it could be implemented as needed at any time soon.

Comments?

CARL PAPERIELLO: I would like to respond to this issue because there's been a lot written about it. But I frankly don't have clean answers.

Obviously, as you're aware, we have done internal calculations and developed some information for the Commission and for the national security people about things that we license that, you know, could be a risk versus things which are not, in terms of a real health risk.

The problem is, everything I have read -- and let's deal with the things that we all know, again one of the calculations I've done is for a fairly large moly tech generator. I satisfied myself that one, trying to spread the material, if you do it with

an explosive, is far more of a problem than the radioactive material. If it's spread, the best thing to do is close the door and take a vacation for a few days and let the material decay. I don't want to be a facetious, but it is short lived.

The problem is there's two issues. One is a policy issue because the question is, it will be a national policy that we're going to ignore contamination that gives you doses below a certain level. The problem is, all the papers emphasize the people's psychological reaction to contamination, period.

And I don't know -- everybody in the papers I read, the public has to be educated. Well, you know, with all the talking we've done about low level radiation, I don't know what more can be said. So the question is, whether or not you have a public reaction, I mean we've dealing with clearance, clearly the doses are an infinitesimal part of the natural background yet you have tremendous controversy over low levels of contamination. So what you're dealing with is, are we going to have a problem with levels of contamination from malicious use over radioactive material that we would think would not have a public health, you know, consequence.

Yet, the reaction to this contamination as in any other contamination exceeds what we really believe is the health effects. I don't have an answer for you because I don't know how to solve that problem.

BRUCE MALLETT: Let me add something, if I may, Mr. Merrifield. When you look at the response organizations, however I think it's important to focus there and communicate to those organizations how you respond to these various things. And I'm going to use an example. Years ago when we lost Troxler gauges, or I should use another manufacturer perhaps, but you lost portable gauges on the highway: I remember people cordoned off the highways and shut them down. Now when you lose the gauge I think people are educated enough that they remove it, as long as it's in its stored secure position, move it to the side of the road or get it to an organization that can respond. So I think that's a testimony to communication to the response organization. So I think that's a place to start. I'm sorry for interrupting.

JEFFREY MERRIFIELD: I would say this may be, we've been fond once in a while to say various things about EPA but I think this is one over those

areas we have something to learn from them. Under the Safe Drinking Water Act there is a requirement on a yearly basis every individual who is on a public drinking water system has to receive a notice, this is the level of materials that are in your water and it sets out various things including arsenic. This is how much arsenic is in your water. And I think that level of education and what the EPA is doing has sensitized people that yeah, there are things in the water but there's a limit to which we believe things are safe. That may be an area we have some things we need to do there where we can say, yes, this there may be a level of contamination here but it's a level that we don't have to worry about the public health consequences worthy of our, perhaps having a dialogue about that matter.

NILS DIAZ: I think one possible partial answer to these things is to really bound consequences because it's not an issue of risk or probabilities. You know, people are looking at it. And that's where we lose, you know, the public communication when we start looking at this like this. But fundamentally, you know our licenses should have a reasonable idea, and maybe that's our job, I don't know. I think that's an issue for the Commission to decide. But

should have a reasonable idea what are the consequences from accidents, okay, that would occur during normal use and for accidents that could be from misuse.

And this would bound consequences.

And I would believe it would probably eliminate as a major, major source of concern, a significant amount of resources that are continuously used and that are really in the day-to-day life. I think this is an issue that obviously will require some additional things. So let me go to my next issue because we'll lose our time here.

I am always very much aware that the efforts to improve effectiveness and efficiencies can become rather specific or some of them not as specific. So trying to be specific, what NMRA says, the pros and cons to increase effectiveness and efficiencies today?

MARTIN VIRGILIO: Well, in terms of pros, it's the right thing to do. Let’s start right there.

NILS DIAZ: What assets do you have that are effective, that’s what I mean?

MARTIN VIRGILIO: There are -- well, of course I tried to set the stage earlier in a way that we have fewer licensees today. Today I think the

number is on the order of 5,000 specific licensees being managed by the NRC.

And we have on the order of 17,000 being managed by the agreement states. The NRC, however is responsible for the infrastructure, developing and maintaining that program.

Those 5,000 licensees, soon to be 4,000 licensees bear the cost of that infrastructure.

So there's a strong desire on the part of us and those stakeholders to see this done in the most efficient and effective way possible.

NILS DIAZ: What processes, Marty, do you have in place that you consider assets to make NMSS more effective and more efficient?

MARTIN VIRGILIO: In terms of processes what we want to do is start a business process analysis to look at the licensing work that we're doing, to see if there are possibilities. And we understand from NRR and others that have been through this that you can extract on the order of 10 or more percent efficiencies by going through such a process. That's one thing to do. I think you've got to start though. You've got to step back and start with, are you doing the right work?

Those things tend to go to are you doing

the work right. But you've got to stop and ask yourself are you doing the right work. Carl eluded to this earlier, using, I think, some more risk-informed thinking, do we need to be investing the resources we're investing in certain areas, in the materials arena. Do we need to be doing it? I think the Commission made a decision around this. Do we need to -- a good decision -- do we need to have rules associated with in situ mining or can we do this with guidance?

Is that a more efficient way of addressing this process?

So we step back and move from a rule making approach now to a guidance development approach. And that was one area where we said, hey, there's a more efficient and effective way to do this. So there are processes in place in terms of -- or processes we want to put in place in terms of business process analysis, looking at licensing, looking at the way we do our contract management, there’s the National Materials Program, looking for opportunities there to work more cooperatively with the states to kind of shift that burden that we have. We've got the 4,000 or 5,000 licensees really paying the cost for the national program. What we would like to do is

share that cost with the agreement states more today, more in the future than we do today: That's another piece of this process.

NILS DIAZ: What are the difficulties or the problems or the cons that you're finding in your everyday search for effectiveness and efficiencies that, you know, the Commission should be aware of.

MARTIN VIRGILIO: I'll start with the one that took us off track with regard to this, the terrorist attack of September 11th. We were on a path to go back and look at what I thought were relatively stable programs and processes to extract efficiencies. We were on a path around the National Materials Program. And we were on a path around the phase II recommendations that is came out of the study headed by George Pangborn.

9-11 disrupted that. It's a major challenge because now our thinking about our programs is not the same any more, about in terms of what we want to do, in terms of assuring the safety of radioactive sources. So that was a major challenge to us in terms of now shifting our thinking. Other things that we have to deal with as we move forward in the National Materials Program is the ability of the states to fund these activities, to get more involved.

They're operating on limited budgets like we are.

And to expect them to engage more thoroughly in the process is a challenge given the resources that they have available to them.

NILS DIAZ: Well, I see that Mr. Travers is sitting very comfortably there: And I would just like to bring you into the issue. Are you satisfied that NMSS is doing all they can to improve effectiveness and efficiency in the programs?

WILLIAM TRAVERS: We're always trying to do more but there are a number of challenges. I mean, not too long ago we looked at a project that we thought that we were going to be dealing with at Hanford, you know, vitrification. There are challenges of changing work, shuffling of resources. There are a host of issues. In the main though, we think the strategy we're employing as an agency in the planning, budgeting, and performance management gives us a real good tool to develop a strategy at the outset of any given year, to set measures in place, and to reassess and reallocate going forward.

We find that, in a practical sense, we really have to do that more often than just at the end of any given year because of the dynamics that Marty eluded to. So I think it's a challenge for us but

it's one that the chairman has asked us to look at with commission support for how we might better adapt to that sort of changing landscape going forward in a way that focuses our resources in the most cost effective way, given some of the lessening number of licensees who are accountable to pay for those.

NILS DIAZ: Is that a yes, a no, or a maybe?

WILLIAM TRAVERS: It's a yes, but caveated with the understanding that we're challenged with doing an even better job in this.

NILS DIAZ: I see. Thank you. You have covered a lot of the issues that we know are in there. But the questions always come. Are there any emergent issues that are really popping their ugly head out, besides security, that could impact the NMSS and should be brought to the attention of the Commission?

MARTIN VIRGILIO: I don't think there are any that you are not aware of.

NILS DIAZ: You don’t realize how ignorant I am.

MARTIN VIRGILIO: I see the emerging issues around the new technology in Richmond being very significant for us.

It was somewhat of a surprise, not a major

policy issue but significant resource that we had not planned on. We had been looking toward receiving one application from USEC and we've been engaging with them around that application. But URENCO's decision now to accelerate their program, we were looking at possibly receiving something from them in the out years.

And now what they've told us in writing is we can expect an application in this calendar year. So there are those kinds of emerging issues that we're dealing with.

PAUL LOHAUS: If I could mention one. It is not an overly significant issue but I think it is an issue we are going to be dealing with this IMPEP space. Marty had mentioned the lessons learned from IMPEP. And one of, I think, the bigger issues that came out of the work the team did in going back and looking at the experience is that the periodic meetings that we conduct between our annual IMPEP reviews. We normally go out and do a periodic meeting. We spend a day with the state and sort of touch base, see how things are going, et cetera, in some cases we've asked ourself the question, when we've found problems within a program at the IMPEP review point, we're saying, why didn't we identify

those or why weren't those identified earlier during our periodic meeting process. And our thought is to take a look at that process, make that process more meaningful in terms of trying to flush out issues early so that when we do the IMPEP review they're not a problem at that point in time. And one of the thoughts is whether we shouldn't establish a more formal process. I won't use the word requirement, but a commitment to look at doing a self assessment between the formal IMPEP reviews and sort of use the process and the criteria but do your internal assessment, and see where there are some weaknesses and deal with those ahead of time as opposed to having them be issues at the time we do our IMPEP review. But I think that is one important area or significant area that came out of that lessons learned process that we'll be taking a look at over the next year. I think that self-assessment process is an area that we may want to see Commission consideration review prior to implementing that.

NILS DIAZ: Thank you. Dr. Mallet, any emergent issues in the regions regarding nuclear materials?

BRUCE MALLETT: I would say we have covered pretty much on the table the issues. But when

I surveyed my counterparts in the other regions I would just highlight, perhaps, three areas that we would ask the Commission to keep in front of them. One would be that we've done a good job of recruiting staff over the past few years.

And now I think the challenge is to retain those staff, especially given the external environment factors, such as people going to agreement state and how to retain those skills in a fluctuating environment. Second area, I would say, is as we implement information technology, Commissioner Dias you asked about improvements in efficiency, we think there are improvements there but as we implement them be careful that these are used as a tool and it doesn't become a burden to cause more excess resources than were intended in the first place.

And the third, I would like to touch base on Marty's comments about risk. I think using risk information is the way to go. We all support it but we need to take a look at what communication -- and I'll call it a culture shift -- we need to have in the staff, as we take on risk information, decide that this is the new way to go because they spent years maybe in an area that they see as important to them in terms of safety and the new method using risk would

say that it's no longer important.

So I would answer you that way. I see those are three areas I would ask you to keep in there.

CHAIRMAN RICHARD MESERVE: Thank you very much. Commissioner Merrifield I know had one short follow up question that he wanted to ask.

JEFFREY MERRIFIELD: I wanted to see a clarification from Marty. And knowing he's spent a lot of time answering our questions today so I'll phrase it in such a manner that you can simply answer yes or no to take some of the burden off of you. When you talked earlier about centrifuge technology, and you mentioned the applications of both USEC and URENCO. You talked about new issues that had come up and new questions that we may have to resolve in training and things of that nature. I think certainly from my part, and I don't think I'm alone, the issues associated with this agency's review of the LES application were not a model of efficiency or effectiveness for our agency. And for my part I don't think it's one that any of us probably want to replicate. Your comments, I take it you did not mean to leave with the Commission the notion that a review, be it of USEC or URENCO, would not be timely

transparent and disciplined?

You didn't mean to leave that impression did you?

MARTIN VIRGILIO: No, sir.

JEFFREY MERRIFIELD: Thank you very much.

CHAIRMAN RICHARD MESERVE: Was that a leading question?

JEFFREY MERRIFIELD: You're an attorney, you can take it as you want.

CHAIRMAN RICHARD MESERVE: Well, I would like to thank the staff: We covered a lot of territory today. I think this is a very interesting and helpful briefing. I would like to thank you all for your contributions this morning. With that, we're adjourned.