

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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COMMISSION MEETING -BRIEFING ON STATUS

OF NUCLEAR MATERIALS SAFETY

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TUESDAY

JANUARY 15, 2002

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

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

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

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

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

1 now up at the Commission.

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

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

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

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

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

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

25 MARTIN VIRGILIO: Thank you Carl, good

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

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

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



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

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

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

14       The currently effective guidance on dose  
15 to members of the public was issued by the federal  
16 radiation council in the 1960 - 61 time frame. In  
17 1971 there was authorization to develop federal  
18 guidance which was transferred from the federal  
19 radiation council to the environmental protection  
20 agency. The radiation quantities used in this current  
21 guidance that was developed back in the 60's are no  
22 longer used in radiation protection today. The  
23 guidance currently recommends a dose limit of 500  
24 millirem per year which we now consider an  
25 unacceptably high value for doses to members of the

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

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

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

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

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

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

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

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

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

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

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

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



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

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

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

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

1 our current projections are we'll have 35 agreement  
2 states. This will take us to a position where we'll  
3 be regulating only about 20 percent of the material  
4 licensees so we're talking about roughly 4,000 out of  
5 21,000 specific licensees in the program. That will  
6 cause us to move closer to a national materials  
7 program.

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

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

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

1           CARL PAPERIELLO: I would like to wrap up  
2 a couple important points, all the points that Marty  
3 covered are important but I want to touch on a few  
4 issues. Slide six -- seven rather. Ensuring the  
5 safety of materials. A year ago these efforts were  
6 concentrated on greater accountability of sources with  
7 the assumption that if we knew where a material was,  
8 it was generally safe. And malicious activity, what  
9 we had seen up to date, was not life threatening. Of  
10 course, as a result of September 11th, I don't think  
11 we can hold those assumptions. So now, when you talk  
12 about ensuring safety of material, we have to consider  
13 the potential for malicious activities and maybe even  
14 some of the assumptions about what is self protecting  
15 needing to be reconsidered. This is an area where  
16 there has been international interactions. And now  
17 those interactions have escalated. There are a lot of  
18 intra-governmental activities in this area. All of  
19 these interactions, what we do in decisions made are  
20 all going to involve Commission policy decisions.  
21 With respect to the standards, Marty talked about the  
22 work that we are doing on standards.  
23           It's -- I break down standards into two  
24 areas. There are technical basis and the actual, what  
25 is the standard. And I'm going to use clearance as an

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

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

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

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



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

20 But it's a sophistication, a complexity.

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

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

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

9 Now, I guess I'm finished.

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

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

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

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

25 PAUL LOHAUS: In response to that,

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

21 EDWARD MCGAFFIGAN: This summer can we  
22 expect an answer?

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

25 CHAIRMAN RICHARD MESERVE: December.

1 EDWARD MCGAFFIGAN: Was it December?

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

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

6 MARTIN VIRGILIO: Bruce and others were  
7 involved in this. If I look forward to where we were  
8 in August, we had laid out a plan back in August  
9 looking at the Phase II report, looking at the  
10 national materials program, looking at the BPI  
11 initiatives we were undertaking in this materials  
12 arena. Then we had the terrorist attack of September  
13 11th. It really changed a lot of our thinking in this  
14 area. If you want specifics in terms of some of the  
15 recommendations in the Phase II report would have had  
16 us doing less inspection activities, less oversight  
17 activities, whereas, in light of terrorism and  
18 terrorist attacks, we may want to rethink some of  
19 those activities.

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

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

16 EDWARD MCGAFFIGAN: Let me switch to  
17 another topic. Mr. Virgilio you talked about 500  
18 millirem being an unacceptably high value in talking  
19 about guidance. My recollection is that the 1994 or  
20 95 guidance that EPA put out had, at least for brief  
21 periods of time the notion that 500 may still be  
22 acceptable. They had not been dealing with atomic  
23 energy acts but dealing with norm. I remember the EPA  
24 discussion. Now, clearly, they may have changed. My  
25 understanding in terms of the guidance they gave last

1 year, there were no numbers. But 500 millirems is  
2 also, I think where FDA is in terms of implementing  
3 the codex alimentarius with regard to after a nuclear  
4 event, what is the acceptable level per year dose as  
5 a result of consuming food products. So it's a -- and  
6 Mr. Clark at the IcRP was talking -- Dr. Clark --  
7 about 300 millirem which is approximately background,  
8 being a number where, you know he saw some magic in  
9 3's. I don't think he's Catholic but he saw some  
10 magic in 3's, a few years ago. I think he's been  
11 talked out of that by his colleagues but 500 isn't  
12 that far off. Five hundred is also where we are at  
13 least for when I somebody visited a patient and we  
14 decide that as long as they're properly informed that  
15 they might get a dose. That they might visit a loved  
16 one. So I just want to argue with you a little bit  
17 that we have come to the conclusion that 500 millirems  
18 is an unacceptably high value. It's not the routine  
19 value. Most of the ones I've tipped off are cases,  
20 visiting a patient, a loved one, you know, brief  
21 periods of time I think is what EPA said in its '94  
22 Statements of Considerations, which apparently are  
23 going to change. But it's a number we sometimes have  
24 to deal with. So I just say that to you: It's less  
25 a question unless you have a reaction to that.

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

6 And we don't disagree with you at all.

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

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

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

4 WILLIAM TRAVERS: This is really  
5 emblematic.

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

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

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

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



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

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

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

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

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

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

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

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

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

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

21 MARTIN VIRGILIO: I agree with you. They  
22 are complex. But I mean, not so that if you put  
23 enough resources into it you could not accommodate the  
24 -- I want to make sure that if record is clear, in  
25 1991 we completed 94 percent of our licensing actions

1 within 180 days.

2 EDWARD MCGAFFIGAN: In 2001 you mean.

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

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

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

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

21 CHAIRMAN RICHARD MESERVE: Commissioner  
22 Merrifield.

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

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

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

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

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

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

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

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

25 We started interactions with Department of

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

5 Are there policy issues involved?

6 That is your question.

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

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

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

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

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

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

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

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



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

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

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

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

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

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

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

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

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

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

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

1 in the longer term assessment around this topic.

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

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

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

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

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

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

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

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

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

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

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

25 Carl, getting back to your point, you

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

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

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



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

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

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

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

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

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

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

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

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

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

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

13 CARL PAPERIELLO: I'll attempt to  
14 address that. I may need some help from OGC on this.  
15 It depends on how it's issued because there is two  
16 pieces. There is presidential guidance and then  
17 there's federal guidance and there's a difference.  
18 The last time presidential guidance was amended was in  
19 '87 or '88. Don't hold me to the exact date. That  
20 dealt with occupational exposures. And that was not  
21 coincidental or in support of. And we parallel in  
22 time with our amendment or changing of part 20 which  
23 did take a number of years to implement that. And  
24 that alter the occupation exposure adopted ICRP 2630  
25 for our dosimetry. And right now though, from what I

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

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

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

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

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

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

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

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

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

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

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

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

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

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

16 CARL PAPERIELLO: I think that's true.

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

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

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

18 As you've noted the ICRP work, there's  
19 NCRP work that is always going on, there's Japanese  
20 bomb survivor data that's being updated, we have BEIR  
21 7, there's a whole bunch of things that could affect  
22 this activity, including thought that is going on in  
23 a variety of fora about sort of changing the way we  
24 think about these things. And trying to have some  
25 guidance that doesn't lock us into specific or lock

1 the federal government in a specific way may be  
2 appropriate.

3 EDWARD MCGAFFIGAN: Mr. Chairman, did you  
4 mean four years or forty years since it since it was  
5 '61 to 2001.

6 CHAIRMAN RICHARD MESERVE: I said forty.

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

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

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

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

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

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

15 CARL PAPERIELLO: In medicine the obvious  
16 area is intervascular brachytherapy.

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

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



1 it's in use in Europe.

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

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

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

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

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

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

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

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

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

15 CHAIRMAN RICHARD MESERVE: I urge you to  
16 do that.

17 Commissioner Dicus?

18 GRETA DICUS: Let me go and continue on  
19 with the code of conduct: And one of my questions

20 was, when is the Commission going to get involved in  
21 this?

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

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

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

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

18 GRETA DICUS: I don't think you have.

19 MARTIN VIRGILIO: I got it.

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

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

1 flexibility for countries that are going to struggle?

2 Or is it going to mean for example, maybe

3 in what it is intended to mean, that if you have a

4 country that lacks the framework, a receiving country

5 that may lack the framework to ensure some security or

6 safety of the material, the exporting country won't

7 export?

8 Is that where we're going with this or am

9 I jumping forward from where you're going.

10 MARTIN VIRGILIO: No: I think you're

11 forecasting where this could go. Right now I think

12 the underlying interest everybody agrees to in terms

13 of ensuring that sources are adequately protected. At

14 one point, we believed that they were very good. And

15 I think we still do believe there are good provisions

16 within the code of conduct but we didn't see these as

17 needing to be mandatory. So we are arguing around

18 flexibility, ensuring that where these provisions were

19 imposed that they were imposed and it was providing a

20 safety benefit for the cost associated with imposing

21 this kind of structure and requirements. So our

22 approach was to ensure flexibility, to ensure that we

23 were not going to mandate a very prescriptive

24 structure on top of the United States or on countries

25 receiving the material unless it was necessary for

1 public health and safety.

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

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

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

14 And those, I guess, are in the process of  
15 what is under discussion through ISCORS. Is there any  
16 chance that the EPA will look at, as they did with the  
17 '94 guidance and say, let's not go there, let's not do  
18 this, let's just not take the document forward at all?

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

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

25 WILLIAM TRAVERS: We'll welcome them.

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

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

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

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

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

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

10          GRETA DICUS: Should it be?

11          I mean it's controlling sources from  
12 another perspective.

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



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

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

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

19 Cheryl, try to control yourself back  
20 there.

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

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

1 MARTIN VIRGILIO: It's budgeted at 1 FTE.

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

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

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

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

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

21 Certified health physicists?

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

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

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

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

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

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

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

25           GRETA DICUS: Thank you Mr. Chairman.

1 CHAIRMAN RICHARD MESERVE: Commissioner  
2 Diaz?

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

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

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

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

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

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

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

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

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

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

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

1 do about it. People are going to question.

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

11 Comments?

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

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

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

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

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

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



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

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

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

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

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

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

5 And this would bound consequences.

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

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

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

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

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

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

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

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

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

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

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

25 Those things tend to go to are you doing

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

11 Is that a more efficient way of addressing  
12 this process?

13 So we step back and move from a rule  
14 making approach now to a guidance development  
15 approach. And that was one area where we said, hey,  
16 there's a more efficient and effective way to do this.  
17 So there are processes in place in terms of -- or  
18 processes we want to put in place in terms of business  
19 process analysis, looking at licensing, looking at the  
20 way we do our contract management, there's the  
21 National Materials Program, looking for opportunities  
22 there to work more cooperatively with the states to  
23 kind of shift that burden that we have. We've got the  
24 4,000 or 5,000 licensees really paying the cost for  
25 the national program. What we would like to do is

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

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

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

17 9-11 disrupted that. It's a major  
18 challenge because now our thinking about our programs  
19 is not the same any more, about in terms of what we  
20 want to do, in terms of assuring the safety of  
21 radioactive sources. So that was a major challenge to  
22 us in terms of now shifting our thinking. Other  
23 things that we have to deal with as we move forward in  
24 the National Materials Program is the ability of the  
25 states to fund these activities, to get more involved.

1 They're operating on limited budgets like we are.

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

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

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

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

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

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

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

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

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

20 NILS DIAZ: You don't realize how  
21 ignorant I am.

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

25 It was somewhat of a surprise, not a major



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

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

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

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

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

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

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

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

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

1 say that it's no longer important.

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

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

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

1 transparent and disciplined?

2           You didn't mean to leave that impression

3 did you?

4           MARTIN VIRGILIO: No, sir.

5           JEFFREY MERRIFIELD: Thank you very much.

6           CHAIRMAN RICHARD MESERVE: Was that a  
7 leading question?

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

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

16