UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
OFFICE OF THE SECRETARY
***
BRIEFING ON EFFORTS REGARDING RELEASE OF SOLID MATERIALS
***
PUBLIC MEETING

Nuclear Regulatory Commission
One White Flint North
Commissioners Hearing Room
11555 Rockville Pike
Rockville, Maryland

Wednesday, May 5, 2000

The Commission met in open session, pursuant to notice, at 9:30 a.m., the Honorable RICHARD A. MESERVE, Chairman of the Commission, presiding.

COMMISSIONERS PRESENT:

RICHARD A. MESERVE, CHAIRMAN
GRETA J. DICUS, Member of the Commission
NILS J. DIAZ, Member of the Commission
EDWARD McGAFFIGAN, JR., Member of the Commission
JEFFREY S. MERRIFIELD, Member of the Commission

STAFF AND PRESENTERS SEATED AT THE COMMISSION TABLE:

WILLIAM TRAVERS, Executive Director for Operations
DR. DONALD COOL, Director of Industrial & Medical Nuclear Safety, NMSS
MR. ANTHONY HUFFERT, Decommissioning Projects Branch, NMSS
MR. FRANK CARDILE, Rulemaking and Guidance Branch, NMSS
DR. CARL PAPERIELLO, Deputy EDO for Materials, Research, and State Programs
MS. CHERYL TROTTIER, Chief, Radiation Protection, Environmental Risk and Waste Management Branch
ANNETTE L. VIETTI-COOK, Secretary
KAREN D. CYR, General Counsel

P R O C E E D I N G S

[9:30 a.m.]

CHAIRMAN MESERVE: The Commission meeting this morning is to hear from the Staff on the status of efforts to control release of solid materials contaminated with small amounts of radioactivity.

The Staff has provided us in SECY paper with recommendations as to how it suggests that we proceed to address what is a very complex and difficult issue.

This is the first of two briefings that the Commission will have on this subject. Our briefing today is obviously with the Staff, and will focus on the paper that has been circulated to us.

We will also have a public meeting on May 9th, on which the Commission will have the opportunity to interact with a large number of stakeholders who have interests in this matter.

I'd like at the outset to commend the staff for their work on this effort. This is, as indicated, a very complex and intricate task that they have confronted, and it has necessarily involved interaction with a large number of stakeholders, many of whom, it's apparent from reading the SECY paper, have strong and divergent views as to how we should proceed. This issue is not an easy one.

Let me turn to my colleagues and see if they have

any opening statement.

[No response.]

CHAIRMAN MESERVE: If not, Dr. Travers, you may proceed.

DR. TRAVERS: Thank you, Mr. Chairman. Good morning.

As you pointed out, the Staff did send SECY 0070 to the Commission in March, and this morning, we'd like to summarize the contents of that paper, discussing, in particular, results of some of the public meetings that we've had on the issues paper; discuss some of the status of the technical analysis supporting decisionmaking on this issue, and some of the Staff's recommendations for proceeding.

Here with me at the table today are Carl Paperiello, who is the Deputy Executive Director for Materials Research and State Programs; Don Cool, who is the Director of the Division of Industrial and Medical Nuclear Safety in NMSS; Cheryl Trottier, Chief of the Radiation Protection, Environmental Risk and Waste Management Branch in the Office of Research; Anthony Huffert, who is a Senior Health Physicist in NMSS; and Frank Cardile, who is a Senior Project Manager in NMSS.

And with that, I'd like to begin the briefing.

CHAIRMAN MESERVE: Very good.

MR. HUFFERT: Thank you. I want to begin by outlining the briefing that we prepared on the SECY paper. The information we present is based on the contents of the main body and the attachments of that SECY paper.

First, I will discuss the rationale for examining our approach for controlling releases of solid materials. Then I will summarize recent Staff actions in this area.

Frank Cardile will then provide an overview of Attachment 2 of the SECY paper, which summarizes the stakeholders concerns and reactions that we received during the Fall public meetings, and from the letters that we have received to date.

Cheryl Trottier will discuss the status of our technical basis, which is contained in Attachment 3 of the SECY paper, and Don Cool will cover international activities as discussed in Attachment 4, and then he will conclude our presentation with recommendations for proceeding on the control of solid materials.

Next slide, please. The rationale for examining the approach for controlling releases of solid materials is because existing NRC regulations do not contain generally applicable standards for the control of solid materials with relatively small amounts of radioactivity that is either in or on the material or equipment.

Even though NRC does not currently have such

criteria in place to cover the release of solid materials with small amounts of radioactivity, it is likely that licensees will continue to seek to release these materials under recycle, reuse, or disposal when it become obsolete or otherwise unusable during the operations or at the time of decommissioning.

Currently, licensees are authorized to release solid materials and to make specific requests for the release of solid materials on a case-by-case basis.

Licensees' decisions are made using a variety of criteria such as Regulatory Guide 1.86, its equivalent fuel cycle, 8323, and 10 CFR 20.2002.

The current case-by-case approach is adequate to protect public health and safety. Part 20 of NRC regulations requires licensees to survey materials to evaluate their rad hazard. This provides reasonable assurance that elevated levels of licensed radioactive material is not being released from their control.

However, the lack of established logical criteria for controlling solid materials does result in inconsistent release levels. Not all licensees use the same survey instruments and procedures to monitor solid material releases, which can lead to variations in the sensitivities and equipment.

Existing guidance such as Regulatory Guide 1.86 is

based on detection capability of serving instruments and is geared towards the release of solid materials with surface contamination, not volumetric contamination. Thus, a major consideration in the control of solid material is the ability to detect small amounts of radioactivity in and around the material itself.

And there are limitations for reliably measuring such radioactivity, even with state-of-the-art instrumentation and measurement methods.

Dectectability is, therefore, an important issue, not only for the NRC licensees that seek to release this solid material, but also for recipients that monitor radioactivity in their supplies.

There continue to be changes in instrumentation and measurement methods, and the role of detectability for controlling solid materials should be followed closely by the Staff.

May I have the next slide, please? Recent Staff actions include publications of the issues paper on the release of solid materials at licensed facilities in the Federal Register on June 30, 1999.

The issue paper presents a variety of issues and alternatives related to the control of solid material. It also served as a discussion tool for public meetings during the Fall.

Our first public meeting was held in San Francisco in September, which was followed by meetings in Atlanta in October; NRC headquarters in November; in Chicago in December.

At these meetings, we discussed the rationale of why we are examining our approach, alternatives for what should be done with solid materials and what materials should be covered; the context of the dose ranges that we are considering, namely, about one percent of natural background; the technical analyses that have been completed to date; and the health and environmental costs an survey analyses that are still needed.

During this time, we also established a website and a list server for public access to the issues paper, related SECY papers, public meeting notifications, the agendas, Staff summaries of our public meetings, and also the meeting transcripts themselves, as well as the comment letters are in the server and website.

The website address is show here on this slide as it is still active, providing updated information on our activities in this area, such as the information on this briefing today, and the stakeholder meeting next week.

At this time, I'd like to turn the briefing over to Frank Cardile, who will discuss stakeholders concerns and reactions.

MR. CARDILE: Thank you. There were diverse and wide-ranging comments received at the four public meetings and the over 800 letters received on the issues paper.

These comments were received from a variety of different stakeholder groups. These included representatives of the metals, scrap, and cement industries, who are potential recipients of this solid material, as well as from those involved with sanitary waste facilities.

Citizens groups expressed opposition to this process, and did not attend the first two public meetings, although a letter explaining why they did not attend was delivered to the meeting attendees.

Certain citizen groups did attend the latter meetings, and the large majority of the 800 comment letters that we received were from citizen groups and individuals.

There were also a number of comments received from licensees who must deal with issues of handling this material, and from the Health Physics Society, and from persons working in the health physics profession.

In addition, there were comments from federal and state agencies and from tribal governments.

The Commission paper presented in some detail, a summary of stakeholder reactions. The Staff plans to publish a NUREG report in the coming few months to provide additional detail on the wide range of issues raised and

comments received.

The majority of the comments that we have received have focused on specific alternatives for what should be done with the solid material, and, in general, these comments fell into distinct viewpoints by stakeholder groups. At a meeting on May 9, the Commission will hear the views of invited stakeholders on this subject.

Today we would like to provide you with an overview of some of the viewpoints in this area. Could I have the next slide, please?

Metals and cement industry commenters indicated that they were opposed to unrestricted release of solid materials that could come to their facilities for potential recycle. The rationale for this view included that there could be a very large economic impact on these industries if consumers do not want to buy products due to concerns over the presence of radiation in the products.

For example, a letter from the metals-producing industry estimated that a one-percent loss in market could produce a $600 million annual loss to the steel industry. Concern was also expressed over the potential for exposing individuals, both at facilities and in the public.

It was noted that detectors at steel mills are very sensitive and could alarm at levels near an NRC standard that might be promulgated, which could result in

the steel industry rejecting shipments of released material.

The comment letters from the metals-producing industry suggested that they could support an approach that included the major points noted on this slide:

First, metal could be released solely for specific restricted applications that would preclude its use in consumer products. These restricted applications would limit the metal to nuclear-related uses or to disposal in landfills.

Such material would need to comply with labeling and tracking requirements. Also, if could be reasonably shown that a metal was not radioactively contaminated at the licensed facility, for example, perhaps fencing from around the perimeter of the site, and if radiation detectors showed that this metal does not contain above-background levels of radiation, then the metal could be released for unrestricted use, subject to labeling and tracking requirements.

The letter from the scrap industry did not offer a specific approach, but rather suggested that a panel of stakeholders be formed to provide advice to the Commission on various technical and policy issues.

May I have the next slide, please? Citizens groups and individuals generally indicated that radioactive wastes should be isolated from the public, and that they were opposed to releasing materials that could end up in

consumer products.

The rationale for this view included that the risks posed are too high and are avoidable and involuntary and unnecessary; that doses cannot be predicted with accuracy; that releases will not be able to be measured accurately to assure compliance because of difficulties in monitoring; and that licensees and the NRC cannot always be trusted to implement and enforce criteria and regulations.

Because of these concerns, the comments that we received ranged from categorical opposition to any release, to general opposition, unless uncertainties in technical and policy issue are resolved.

In general, these commenters stated that to be protected, releases of solid material should be prohibited, and that, in addition to prohibiting future releases, there should be full reporting on and recapture of material released so far.

May I have the next slide, please?

MR. CARDILE: Licensees in the health physics society generally express the view that setting and unrestricted use standard that is set at a low dose level is both appropriate and needed, and recommended that NRC adopt the consensus standard developed by the American National Standards Institute, ANSI N13.12. Specifically, these groups noted that the doses and risks being considered are

very low and that scientific bodies such as NCRP and ICRP indicate that levels around 1 millirem per year are negligible in risk considerations.

These groups also noted that a level around 1 millirem per year would be well below doses received in the public's routine activities and insignificant compared to variations in background that people are exposed to each day without discernible effect on health.

These commenters also noted that prohibiting releases and sending material with very low amounts of radioactivity to low level waste disposal would be very costful and wasteful of resources, and would not have an accompanying health benefit to send this material to disposal.

For example, it was noted that biomedical research could be curtailed or stopped if all materials have to go to low level waste disposal.

I would like to now turn to Cheryl Trottier of the Office of Research, who will discuss the issues related to technical basis development.

MS. TROTTIER: Thank you, Frank.

Could I have the next slide, please? I am going to speak to you today about the information that the staff believes is needed to help the Commission in decision-making, and the first piece of this deals with doses to

individuals. This work was published as Draft NUREG-1640 in March of 1999, and it describes the scenarios, the models and the calculations of doses for a broad range of scenarios that would constitute the probable fates for various materials, mostly metals. We looked at steel, copper, aluminum, concrete and equipment for reuse that could likely enter into U.S. commerce.

The evaluation was designed to identify groups of individuals likely to receive the highest dose. The NUREG is currently out for comment. Although the comment period officially closed, the staff will continue to accept comments through June of this year. The staff is also developing scenarios for soil reuse that was not included in 1640, and that will be factored into the overall analysis of the individual doses.

The next piece that we are working on is the inventory of materials and equipment. This effort will estimate the types and amounts of material and equipment that might become available for clearance and it is needed to estimate potential population doses, as well as to analyze the costs and benefits.

The next piece deals with the doses to populations. In addition to assessing collective population dose, doses that might arise from exposure to multiple sources will also need to be estimated.

The next piece involves costs. This work is based on the estimates of the inventory that is potentially available and includes an estimate of the costs associated with that collective dose, with surveying, transportation, disposal and certain non-radiological risks associated with the materials that we talked about earlier.

The next piece that will need to be evaluated is the environmental impact. Once all these other pieces, that is the inventory, the dose assessment and the cost data are obtained, the staff will need to look at environmental consequences, both radiological and non-radiological impacts, and socioeconomic considerations.

And the last piece is the measurement methods. This is the major technical challenge associated with the effort that the staff is undertaking, because what we need to do is find a means of measuring residual radioactivity at near or background concentrations.

The information is being developed to address media where the radioactivity is distributed throughout the volume of a sample. The staff is looking at various methods and analyses that are available for different types, sizes, and shapes of material that might be available for release, as well as the cost to conduct these surveys.

Next slide, please. Now, I will speak briefly to some of the issues associated with the development of the

technical basis. Under the first, the technical review of doses to individuals, that NUREG that I mentioned earlier, 1640, the public comments need to be addressed and the NUREG needs to be finalized. The NUREG underwent a rigorous QA process in its development, and during the time that it was being developed, the staff worked extensively with the Environmental Protection Agency and the International Atomic Energy Agency, both who have been in the process of developing similar doses for clearance of material over the last six years in an attempt to harmonize the technical issues.

However, to address concerns recently raised about the credibility of this NUREG, the staff plans on conducting an independent technical review of the models and assumptions used in the NUREG prior to finalizing it.

The other issue that I would like to speak to is the conflict of interest issue. As a result of terminating the existing technical support contract, development of the technical bases needed to support the subsequent Commission decisions will likely be delayed. The staff is proceeding to initiate new contracts, but the existing schedule could be delayed by up to nine months.

Certain work was not impacted directly by the COI, such as the development of information on measurement methods which we are currently undertaking and the

information on dose estimates for soil usage, because the staff is doing this in-house.

And that concludes my remarks. I will turn that over to Don Cool now.

DR. COOL: Thank you, Cheryl.

Next slide, please. The considerations of controlling solid materials are both global in impact and in consideration. This is maybe one of the hottest topics of discussion in the international community and in various regulatory organizations that is going on today. A great deal of the focus of those discussions has been in two forums, the International Atomic Energy Agency and the in the European Union, European Commission.

Let's talk first just briefly about the European Union. A directive published on May 13th of 1996 was intended, is intended to have the European Union countries adopt the new basic safety standards and recommendations coming out of ICRP's Publication 60. So that directive is a broad wide-ranging directive which covers the entirety of radiation protection and brings it up to date with those recommendations of the ICRP.

One portion of that directive does specifically address the topic of clearance. Internationally, "clearance" is the term used to deal with the process for moving material from a situation where controls are imposed

to a situation where no regulatory requirements are in place any time. We have chosen in the purposes of our discussions not to use that term, "clearance," in essence, being a subset of the wider ranges of issues relating to all the things that you might possibly do, including potentials for restricted release and otherwise. But, internationally, the term that you will always hear is the word "clearance."

At this point the directive is to be in place by the 13th of this month. European Union member states are supposed to have transposed their legislation and regulatory requirements to be in line with that directive by that date. I think it is safe to say that there is a variety of places at which those member states are at this point, ranging from a couple of countries who will likely have completed their transposition by that date, to others that will be at various other stages of that situation.

COMMISSIONER DIAZ: Excuse me, Mr. Chairman. That is mandatory?

DR. COOL: It is mandatory, yes. Following that date, and my discussions with folks from the European Commission who are dealing with this subject have indicated that there is not going to be an extension of that date. There is then a process whereby, first, the European Commission would make a prima facie finding, some letters of recommendation, some further fact-finding which might

eventually lead to a further reasoned opinion case, is I think the term which they use. Theoretically, this could end up in the European courts. That process tends to take a fairly long period of time, and, of course, the process will be continuing throughout that, so it is essentially impossible at this moment to predict how those processes might proceed.

Member states, in essence, have a similar sort of situation perhaps to what we have here in the United States in that a member state of the European Union does not have to adopt exactly the pieces of the directive. They can be more restrictive, particularly when you get to the details with regards to concentrations and quantities of material. So we expect that there will be some variations in the approaches that will end up in the individual national legislations and regulations in terms of some of those details.

The European Union directive is a dose-based criterion, the 10 micro-sievert or 1 millirem per year criteria. The directive itself which goes in place has a table associated with it that is the exempt concentration and quantity tables. There is, proceeding in parallel with this, the technical work for additional tables associated with clearing larger quantities, other volumetric quantities of material, and those are at various stages of publication

review transmittal throughout the European Union.

The International Atomic Energy Agency is in a similar sort of situation. The basic safety standards for radiation protection and the safety of sources was published in 1996. It also has the topic of clearance in it. It is also a dose-based criterion at the 10 micro-sievert or 1 millirem per year level. The basic safety standards also have a table associated with exempt concentrations and quantities. Those tables are, in essence, the same between the European Union and the International Atomic Energy Agency's basic safety standards.

IAEA has had in place since 1989 a Safety Series Number 89 dealing with exemption and exclusion. They have had a process ongoing for some number of years now to revise and update that and include the concept of clearance. That document is focused primarily on the philosophy and approach, the definitions, the sorting out of those sorts of details rather than the technical modeling which translates a dose to a particular concentration or a quantity.

At this point in time that document is still under active consideration. It was reviewed by the Radiation Safety Standards Committee of the IAEA just three weeks or so ago, and sent back to the Secretariat for numerous possible changes and considerations. It is not at all clear at this point whether, in fact, that will even remain as a

Safety Series document in that IAEA, in its structure for Safety Series standards and reports, has moved to a format where their safety standard guides are supposed to be very similar to our Regulatory Guides, "should" type statements, and much of what is currently contained in that document is explanatory material, thus, it may not survive as a Safety Series guide when IAEA finally completes that.

IAEA is also working through the process of revising an update technical basis work which would translate the dose criterion, the 10 micro-sievert, to a particular concentration or quantity for any of a large number of isotopes. What is referred to as a Tech Doc, or a Technical Document, Number 855 was published by IAEA back in about '96 and is currently being looked at, revised, updated to bring the models into line, with a view of trying to get harmony between the various groups that are looking at and trying to do this modeling, including the European Union, including the activities that we in the Environmental Protection Agency have been doing in this particular area.

The whole issue brings to light once again the question of, what happens when material which potentially is cleared from controls someplace enters the United States? The fact that there is a great amount of activity going on right now doesn't change the fact that materials are being cleared today under individual legislations and activities

from a variety of places, inside and outside of the European Union, nor does it change the fact that occasionally material comes into the United States and we either, at the point of entry, or actually more often at some later point inside of the United States, detect the presence of some quantity of radioactive material.

We have had over the years to respond to a number of circumstances where material has shown up, and attempt to determine exactly what should be done. The Environmental Protection Agency, under the Federal Emergency Response Plan, is the lead agency for dealing with these types of situations, and they and the State Department, in fact, entered into a Memorandum of Understanding last fall to try and work through some of the issues associated with how to view and deal with criteria for what to do with the import of material when radioactive material is detected.

That is not to say that there is, in essence, a survey program which would survey all material which might be shipped into the United States. The Department of Treasury, Customs people have little radiation pagers. Every once in a while those will trip and tell us something. But more often you have the situation as we had a year, year-and-a-half or so ago, where material will enter the country, some processing or otherwise may happen, and then at some point it finds one of the detectors, and they you

have to try and backtrack to determine what material is in what location and what may have already been utilized in some way, what material may still be in the raw form, or the form in which it was entered into the country.

But the issues remain and will become exacerbated through not only the formalization of standards in the European Union, the IAEA, but the fact that the issues associated dismantling, decommissioning and other sorts of activities in a variety of countries, the former Soviet Union and other places, is accelerating and, thus, the potential for materials moving about in the global commerce is increasing.

If I can have the next slide. That then leads the staff to a set of four recommendations, the first two of which are on this slide. In keeping with the SRM from the Commission of March 8th, we have been working to prepare the appropriate contracting Statement of Work vehicle for the National Academy of Sciences to move forward with that independent examination and attain some recommendations

Secondly, we believe it is important to continue the development of the technical bases work that needed to be done. The variety of issues which Cheryl outlined remain yet to be resolved and the details laid out. That information will be important to us and the Commission, as well as other organizations more or less irrespective of

some of the possibilities in terms of a final direction and recommendation which may come out.

Third, the next slide, please. We would continue to stay informed and actively involved with the Environmental Protection Agency, State Department, Department of Energy, Customs, Treasury, you could run down a very long list of agencies who all have various little pieces and activities in this to try and understand the international activities that are going on, the implications for us, the precedents or otherwise that that may pose for us, as well as the issues of what kinds of materials might enter the United States.

And then, lastly, in view of the fact that we are asking the National Academy to provide us some recommendations, and the current situation in terms of the developments, we believe that it would be appropriate to defer a final decision with regards to the specific direction for proceeding, either in terms of rulemaking or a specific technical approach, until we can have the insights from the National Academy on particular approaches and activities which might allow, not a consensus, but at least a direction where we could gain sufficient agreement to allow the agency to proceed.

And that concludes the staff briefing.

CHAIRMAN MESERVE: Thank you very much for a

helpful briefing.

Let me turn to Commissioner McGaffigan to start off, see if he has some questions.

COMMISSIONER McGAFFIGAN: Mr. Chairman, just to clarify, are we going to try to do two rounds of questions, because obviously you could sit here all day asking questions on this subject but you don't want that either, so how do you want me to proceed?

CHAIRMAN MESERVE: I had envisioned we would follow our normal process of one round in questions --

COMMISSIONER McGAFFIGAN: One round?

CHAIRMAN MESERVE: -- but if there is consensus that people have a lot more to do, we could probably do it.

COMMISSIONER McGAFFIGAN: Okay. I have lots of questions, some of which can go till next week, but I would like to ask a few today and get ready for that.

Slide 6 talks about the metal, scrap and cement industries' concerns with regard to a release criterion for solid materials. Theoretically this could also apply to surface contamination materials that have different case by case rules.

The cement industry, they actually are opposed to release. I haven't read their stuff. I have read the steel industry's. I just want to start with cement.

Do they realize -- I mean isn't coal ash routinely

used in concrete and cement products, and do they realize the amount of technologically enhanced norm that there is already in their material? As I understand it, a building built with that sort of material, as many buildings are -- brick -- brick is radioactive, lots of things are radioactive -- but, you know, you get 20 or 30 millirems a year. If you are unlucky enough to work in the Capitol I think the late Carson Mark from Las Alamos did some work around the Library of Congress building that was well over 100 millirems a year that people got if they spent eight or 10 hours a day in that building, so the question I have, and maybe it is more for the folks next week, although the cement industry is not represented in my recollections, just steel folks, do they realize just how much radioactivity is already in building materials?

MR. CARDILE: In answer to your first question, they are -- they have submitted a letter. We could make sure that we get you that letter for you to review before next week, but in their letter they cite similar reasons to being opposed to this as the steel industry, namely that there would be problems with purchasing, consumers wanting to purchase their product.

They also suggest similar concerns about the transfer --

COMMISSIONER McGAFFIGAN: Is there any building

material that we are aware of that could be used, that could get us a house or a building where we would get no radiation?

MR. CARDILE: Well, they cite, this issue of the fly ash, coal ash came up at the Chicago public meeting where the cement industry representative was there. They also address it in their letter and the indication in the letter and at the meeting was that, yes, this was something that happened I guess in the '80s where this was directed that they should take this material but that (a) that doesn't necessarily justify what we are doing here; and (b) at the Chicago meeting it was discussed that perhaps if these issues, these discussions would have been held then that perhaps this also would have been raised as an issue.

COMMISSIONER McGAFFIGAN: Well, those aren't our issues. Coal ash is regulated or not by the Environmental Protection Agency. I mean it is identified as a technologically enhanced norm, as it should be. It can be quite hot, as we all know, and 500 picocuries per gram of uranium thorium can easily be in it.

Just recently the Environmental Protection Agency decided not to, pursuant to the Bevill Amendment, not to regulate coal ash. There was an article in Foreign Affairs earlier this year about the fact that the old AEC some time in the '50s actually thought about coal ash, defining it as

source material. If the price of uranium were high enough we might actually be mining uranium from coal ash, and part of the discussion as I understand it that went into the coal ash decision at EPA last week was that there are beneficial uses including in agriculture.

I mean this stuff I guess is used in fertilizers as well, so we will have to have that discussion next week, but just for the public listening to this, it is hard for me to understand the notion that one millirem per year, if that is the ANSI standard, the IAEA suggestion, the EC standard, why that is such a dire problem given the tolerance for these materials elsewhere.

Carl seemed to want an answer. Is there a building material? It really goes to the steel industry as well. I mean steel is mostly used, I mean it is partly used in flatware. A lot of it is used in building buildings and then it is surrounded by concrete or whatever, and I assume, number one, steel I suspect has some radioactivity in it just naturally because you can't -- you know, it is mined and has uranium and thorium and radium, whatever, with it, but then the material it is surrounded with has radioactivity in it.

DR. PAPERIELLO: I suspect plastics made with petrochemicals might be the coldest material you can use. I have come across an article --

COMMISSIONER McGAFFIGAN: But even that has radioactivity in it.

DR. PAPERIELLO: Even glass has radioactivity in it. I am -- there's probably nothing if you use the term zero, but you know, you are aware that I met with the metal industry, a separate meeting with the metal industry to try to understand their concerns, and their concerns are very much economic and perception.

They did not represent to me too strongly that the material was dangerous but rather that if I make steel beverage cans, and that is a big part of the industry, and even a small percentage of the public refuses to buy that product, that represents a serious economic loss and their competitors, supposedly in another industry that doesn't use material that is recycled, will then advertise the fact "Our containers are pure."

I mean recognizing there could natural material and it's just --

COMMISSIONER McGAFFIGAN: There is one part of, and I don't want to go on forever here, but there is one part of -- although I could -- there is one part of the stuff I came across recently in, I think it was in Nucleonics Week, that it referred to the Codus Alimentarius, which is apparently a food code that has some standards in it for radioactive material in food, and I am not sure

whether it is the U.N. Food and Air Culture Organization --

DR. PAPERIELLO: Yes.

COMMISSIONER McGAFFIGAN: -- that puts it out?

DR. COOL: It is.

COMMISSIONER McGAFFIGAN: You could get into the situation where easily, as I understand the Codus Alimentarius discussion, where you have these pristine containers and then radioactive food inside it, because we know food is radioactive, right?

I mean the brazil nuts and bananas and the phosphate fertilizers that are used by the farmers to grow the food has radioactive material in it which then gets captured in the food, but have you all looked at the Codus Alimentarius and come up with guesstimates? Does that use a dose criterion or does that use concentration limits in terms of trying to decide how radioactive food should be?

DR. COOL: That has, and I have not looked at it lately to verify this, that has concentration values and was designed to be a level at which you would interdict food supplies following an event.

COMMISSIONER McGAFFIGAN: So it is not for everyday use?

DR. COOL: It is not typically for everyday use. It is for a situation, it was put in place post-Chernobyl for a situation of when you would cut off or restrict food

supplies from the transport system, so it has a slightly different purpose and for that reason has levels which would not necessarily be the same as what you would want to do for a typical what I want to eat every day.

COMMISSIONER McGAFFIGAN: Two more quick questions, I hope.

One of the issues mentioned in the paper, and I could pull out the exact quote, but the industry is concerned about their sensors going off if material is cleared and the big issue, one of the big issues was in Tennessee, this MSC material that was going to have minute amounts of Technetium-99 in it.

Technetium-99 is a beta emitter, a low energy beta emitter that largely self-shields and if it were right there I wouldn't get anything right here. Could their detectors possibly detect the nickel that was going to come out of MSC? Possibly?

DR. PAPERIELLO: I had a meeting down at the Hill last week with representatives of the metal industry and some Congressional representatives. Actually I raised the issue and they acknowledged that they would not be able to detect Technetium-99 with the systems they have.

COMMISSIONER McGAFFIGAN: But they have gamma emitters, right?

DR. PAPERIELLO: They can detect gamma emitters

and a few have a reasonable amount of Strontium-90 they would probably be able to detect the bremsstrahlung from very high energy beta emitters like Strontium-90. If you had a pure alpha emitter, and I don't know too many alpha emitters are really pure alpha emitters, the problem with using detectability is it is not a risk-based standard.

COMMISSIONER McGAFFIGAN: I understand that.

DR. PAPERIELLO: And you would have a drastic range of risk --

COMMISSIONER McGAFFIGAN: But part of the issue, I mean partly I want to make sure that we are dealing with facts as we go through these things, and detectability is not necessarily a good standard but the issue came up with the nickel as to whether it would set off their detectors.

As I understand what sets off detectors, 90 percent of what sets off detectors at scrap yards and steel mills is norm, T norm --

DR. PAPERIELLO: Right.

COMMISSIONER McGAFFIGAN: -- and then there is an occasional orphan source from our regime, but it just strikes me that when assertions are made that the material is going to set off detectors which obviously aren't true we need to deal with that, or in that case maybe the state of Tennessee needed to deal with that because it was their regulatory process that was being challenged.

I have lots of other questions, but I will defer at this point and see if there is a chance for another round.

CHAIRMAN MESERVE: Commissioner Diaz.

COMMISSIONER DIAZ: Yes. Mr. Chairman, see, I want to try to claim my two questions in two separate issues.

First is a policy issue. I understand well the concerns of the industry regarding economics and acceptability, obviously a very valid case, not a safety case, and just want to point out that when the Commission started down this road the clear issue was and still remains that we want to do those things that pertain to the best job that we can do regarding public health and safety and that has not changed and that we are considering those things in the proper priorities and scale.

From that case, you know, and from the time I have been here I have found out, and I hope that everybody agrees but if you don't please let me know, that rulemaking is the best tool that we have, the most comprehensive tool that we have to address an issue that is associated with public health and safety.

When we want to do something that is protective, that considers all aspects we enter into rulemaking.

My concern at the present time is that groups of

all different sorts seem to be wanting not to do rulemaking when rulemaking is the best thing that we can do -- whatever shape it ends up with -- but the process is the best process that we have, and rulemaking by the NRC to me is the most open, complete process we have to address issues of public health and safety.

Therefore, I am a little bit concerned that we are deferring and redoing and doing and I know there are conflicts of interest, but I still believe that there is a pathway that existed that will be the best pathway for protection of public health and safety.

I would like the Staff to answer is rulemaking the best pathway for us to consider an issue or public health and safety, and if so, why are we deferring? Deferring is a word that causes me concern because it seems like we are going be putting things off while I think the development of those technical bases is fundamental to the protection of public heath and safety.

DR. PAPERIELLO: Let me try to answer that question.

If we proceed on a rulemaking starting now, it is not at all clear what the National Academy study would achieve. It is not clear that anybody that we would want the National Academy to engage with would pay much attention to the National Academy and instead would concentrate on

what we are doing, and so if you are asking the National Academy to give you recommendations it almost seems we are precluding or making a judgment. I mean we are giving you our best advice with all the things that we are pulling together, but I would agree with you that to resolve this issue once and for all we ought to go to rulemaking because that is what we did on decommissioning.

I mean we had been ad hoc'ing decommissioning for years through licensing. We went with a rulemaking. I think the way to deal with this ultimately will be through rulemaking. Right now it is just a question of the timing and how does the National Academy work fit in with the rest of what we are doing.

So you are getting out best judgment in trying to put the pieces together, but I guess our view is if we go to rulemaking starting now, the people that we would like to engage with the National Academy probably concentrate on us and not ignore the National Academy.

COMMISSIONER DIAZ: I didn't ask for the timing. I just wanted to clearly establish whether rulemaking is the best process that we have. The timing is the second issue.

DR. PAPERIELLO: Okay, I understand, but I would agree with you. Rulemaking is the best way to go.

COMMISSIONER DIAZ: Okay. Now on the issue of the timing, you know we have the National Academy of Sciences

study. The Commission has accepted to go that route. In the meantime that brings me to the technical basis and the technical issues.

I fully agree that the most pressing issue is the issue of the determining what is measurable and how can we measure it, and there is no doubt about that. In fact, if you look at the Staff briefing at the very beginning we use the words "detectability," "undetectability" and there is nothing in the world, nothing that I cannot detect some radioactivity on. You know, there is absolutely nothing, okay? I mean if you give me enough time and a precise instrument I can detect it -- there is just absolutely no way. Therefore, you know, I think measurability in terms of public health and safety becomes the issue.

My point on timing is that that should not be deferred to the National Academy of Sciences study. That is an issue that we need to tackle urgently. That is an issue that impacts not only on control of radioactive materials but is an issue that is central to the mission of this Commission which is radiological protection, and therefore measurability -- how do we measure and in our case how do we measure doses is an issue of tremendous importance.

Therefore, I would like to ask the Staff what steps are we going to take now up till the end of this process to accelerate and make the very best expedient

efforts to determine the issue of measurability of radiation doses.

MS. TROTTIER: We are in fact continuing to work on developing the measurement methods. That piece has not been impacted by the conflict of interest. Those contracts are ongoing.

While there were pieces from the technical support contract that were terminated that were needed by the contractors working on the measurement methods, primarily the inventory, that would help them assess areas to work on, they have been able to readjust their schedule and they are continuing to work on that.

We are not waiting for the National Academy to do any of the technical bases. We will continue to work on the technical bases. The only thing that is holding us up is the amount of time that we will need to initiate new contracts, because it is not a really quick process, but we are trying to expedite it as much as possible.

COMMISSIONER DIAZ: You know, sometimes on an issue like this just rather than starting it all new, just a validation or rejection of whatever data is there might be the most expedient way. We used to be able to do that.

But I just want to emphasize -- I am sorry -- that this issue is not dependent upon the National Academy of Sciences. That is an issue by itself and it needs to be

expedited. That is, it needs to be done in the most complete, technical, competent manner that we can do.

I don't think there is an issue around that requires more technical competence and depth than the issue of measurability, because it is not detectability. If we go to detectability you might as well leave the earth and go someplace else. Thank you.

COMMISSIONER McGAFFIGAN: That's a high radiation environment outside here, this atmosphere, but watch out.

COMMISSIONER DIAZ: Thank you.

CHAIRMAN MESERVE: Let me just comment, if I may just step out of turn, on one of the focus of the questions, and this is for the benefit of the public, that the Commission has decided to go forward with the National Academy of Sciences study as a vehicle for resolving some of the issues that are confronted with us. There are others, as Dr. Diaz has indicated, that perhaps are ones that -- and the Staff has recommended that there are others that we should proceed with in parallel with the Academy study and I think it was the view of the Commission as a whole that integrating efforts that the Staff would undertake in parallel with output from the Academy would put us in a position, number one, to decide whether to proceed with the rulemaking but also if we do so we'll have amassed a source of information that will enable us to respond to the many

questions that have been raised by the public.

Let me turn to Commissioner Dicus for questions.

COMMISSIONER DICUS: Let me go to -- this is on Slide 6. Most of the recycling in the steel mills, what do they set their detecting levels? Two, three times background -- is that about right? Do you know?

CHAIRMAN MESERVE: Tony?

MR. HUFFERT: It depends on the steel mill and the type of detector they have. They are increasingly using more sensitive instruments. They are using very large area detectors and this can get down to very close to background and they can actually discern by just taking the general counts -- they are not doing spectrometric measurements, they are only taking gross counts at this point -- and they are trying to see how it changes as the vehicle moves through, so as the vehicle moves through they are trying to detect the radioactivity, so it is a very small fraction of background.

COMMISSIONER DICUS: Okay. Then let me go in this direction. If we were to proceed with the rulemaking, and if we set a limit about 1 millirem, and if we included recycling, and I want to emphasize those "ifs" for everybody -- the Staff as well as members of the public -- because we haven't made decisions on this, can they detect that?

MR. HUFFERT: I can tell you what the steel industry has told us. They hired a certified health physicist to do an analysis. He took a look at the concentrations in NUREG-1640 equivalent to 1 millirem. He made some assumptions about the loading of materials in a tractor-trailer combination, and he determined that certain radionuclides at that level were detectable if they were in a large mass and they didn't rig the shipments so that there was a lot of self-shielding, so that was his conclusion.

COMMISSIONER DICUS: It's possible they couldn't be detected as well?

MR. HUFFERT: That's correct. It depends on the radionuclide, the high energy beta gamma emitters.

COMMISSIONER DICUS: The amount, okay, and the self-shielding. I understand all that.

CHAIRMAN MESERVE: Would they alarm at that level?

MR. HUFFERT: His analysis said yes, that certain radionuclides could alarm.

CHAIRMAN MESERVE: Go ahead.

DR. PAPERIELLO: I went to the Mid-Year Health Physics Symposium this year because it was dedicated to instrumentation and between presentations by actually representatives of the steel industry, presentations by individuals just on in situ gamma spectroscopy, and meeting with vendors, for some radioisotopes, particularly those

that are high energy gamma emitters, there are instruments available that could detect concentrations of radioactivity, gamma emitting radioactivity, that would result in a dose at 1 millirem -- in other words, they can get lower.

In fact, one vendor was selling a drive-through Cobalt-60 detector that was based on gamma gamma coincidence. This is a problem with detection again. Some elements for a whole variety of reasons are easier to detect. It's unrelated to dose, so just to back up something that Commissioner Diaz said that was extremely important. The emphasis is -- sampling is important for non-gamma emitters because you don't know whether or not you have homogeneity. If you have heterogeneity just coming up with the sampling protocol is going to be a problem, so it even goes beyond -- but we are working on this.

We are looking at all of these things, but the answer to your question is yes, you can, and the equipment is commercially on the market today, and not just built for the steel industry. The in situ gamma spectrometers that are being sold for the purposes of decommissioning, for some elements can get detectable limits below 1 millirem per year, but it is just certain elements.

COMMISSIONER DICUS: In the presence of background?

DR. PAPERIELLO: In the presence of background,

yes.

COMMISSIONER DICUS: Okay. The draft NUREG-1640, I know you said some of these other documents that we need there will be a nine-month delay due to the conflict of interest. How about NUREG-1640?

MS. TROTTIER: We are anticipating publishing that as a final document in January and that allows us time to do one more independent review, which we hope to complete by September and incorporate our review of the public comments and finalize the document.

COMMISSIONER DICUS: Okay, and one final question has to do with the Customs. I think you mentioned -- of course we are working with the Department of State and et cetera, and U.S. Customs has been involved.

Did they attend any of our public meetings and to what extent are they involved with this?

DR. COOL: I do not believe we had anyone actually representing Treasury, the Customs group. Folks from the State Department and EPA were in attendance at if not all, I think all of the meetings.

COMMISSIONER DICUS: Okay, thank you.

CHAIRMAN MESERVE: When you were discussing Slide 10 that had to do with your development of work on various technical issues you indicated that you had been working with EPA, and IAEA, in trying to develop that approach.

You didn't go on to say whether there had been issues that had been raised by either EPA or IAEA as to the approach we are taking, the questions we are raising and problems, and can you in terms of the technical work you have done, in particular was EPA raising any questions?

MS. TROTTIER: No. In fact, what we have attempted to do is harmonize the results, because both EPA and IAEA have done similar calculations to the ones that are in 1640. I believe we are down now to a factor of about two to three difference between, at least with the EPA and I think that is true with IAEA also.

Bob Meck, the Project Manager, is in the audience. I will ask him.

MR. MECK: My name is Robert Meck, with the Office of Research. Yes, over the last six years we have had an excellent working relationship with EPA on the technical development. We are down to a factor of three in our approach, which is by modelers considered excellent agreement given the uncertainties involved, and with the IAEA we are working towards those same kinds of agreement.

Their needs are somewhat different from those of the U.S. in that they have a spectrum of 129 countries, some of which are more and less developed, and so the scenarios that are reasonable to consider in some of the developing countries may lead us to some more restrictive levels, but

in general the harmonization is remarkably consistent.

CHAIRMAN MESERVE: On a factor of three difference are we more conservative than EPA or not?

MR. MECK: It varies. Sometimes we are more conservative and other times the EPA is more, depending on a radionuclide by radionuclide basis.

CHAIRMAN MESERVE: You didn't mention it in the presentation, but the SECY paper indicates that the Department of Energy has formed some type of a task force that is looking generally at this area. Do we know what that task force is up to? Have we got any connections to it? What is the timeframe for their work?

Is that going to be helpful to us?

DR. COOL: You're correct. They have formed a task group following the Secretary's decision back earlier this year on volumetrically contaminated materials.

We in fact had a meeting with the head of that group --

CHAIRMAN MESERVE: Is that a staff group?

DR. COOL: -- just last week. That is a staff group. It is headed by a Special Assistant to Director Richardson, a blue ribbon panel, if you will. I am not sure I have the exact terminology.

My understanding is that they have had one publicly observable interaction and that at least one of

their next steps involves going and looking at the different practices that are presently existing within the DOE complex.

Many I could turn to Tony or Frank for any other insights because you were at that meeting and I was not. Tony?

MR. HUFFERT: Yes, we met with Frank Costner and Steve Carrier from the Department of Energy last week. We were invited to meet with them to talk about our clearance work.

They as Don said are polling their offices to see what the current practice is. They are also looking into the possibility of having a dedicated melter established for recycling metals.

We did not get into very much detail about the task force and the next meetings. It was a very general meeting in that respect.

DR. COOL: To come back to your last statement, it is not clear at this point exactly what timeline that task group is on. Certainly it is our intention to try and stay in touch with and aware of the thing they come up with, and to the extent that we can mine that for data, insights or other things, we intend to do so.

CHAIRMAN MESERVE: Thank you. When you were discussing the EC and the IAEA efforts, you described them

as both of them having a dose base and then deriving, as I understood it from the dose concentration tables.

I presume that is being done by some sort of an all pathways analysis of the type with which we are familiar?

DR. COOL: Each of those modeling efforts involve a variety of pathways, as we have done. There are some differences in terms of how you reach a particular end-point. When we have done our modeling we have gone through and summed up all the little individual bits and pieces.

My understanding is one of their observations is that for any given radionuclide one pathway is always the dominating one, so I believe at least in some of their cases they have gone with a most restrictive pathway scenario to pick their number, as opposed to a summation, but that they have looked at the wide spectrum of possible scenarios in going through each radionuclide.

CHAIRMAN MESERVE: You indicated I think that they had some of these concentration tables that had been developed and others were still in the works.

Are they having a problem on the volumetric side or surface contamination or is it that they haven't got all the isotopes yet, or what is the state of their technical work?

DR. COOL: I would in fact I think characterize it

almost exactly in the same place as ours. They are continuing to develop, elaborate, verify and harmonize those models between the EC, the IAEA, and things which are being done nationally, the U.S. being one of the principal contributors to that.

In each case, each agency's, each organization's case there is a draft which is out floating around and they are working to elaborate and amplify.

CHAIRMAN MESERVE: What distinguishes the tables they have completed and the tables that they are still working on?

DR. COOL: I am going to turn to Bob Meck to give you that detail, because you have gone about one level deeper than I have.

MR. MECK: Right. Just to give you some context, I have been a consultant to the IAEA on several occasions in terms of the writing of the technical details. The approaches that the IAEA are using emulate those of the European Community and, as Dr. Cool mentioned, the pathway analyses are generally for a dominant pathway for a radionuclide but they take into account assumptions and parameters that would apply to the country -- I am speaking for the IAEA now -- that would apply to the broad spectrum of countries and in making those judgments.

It comes down to ultimately making judgments of

what is appropriate in terms of assumptions and pathways for reasonable scenarios and the differences, the status of where we are now, comes -- harmonizing differences of perceptions between the various countries that are contributing to the technical development and so where we are at today, we worked in February of this year and came to very close agreement with the EC numbers at the IAEA.

it was decided that we needed more clarification of what the process was, and so we anticipate another consulting group in June of this year to finalize those numbers and given that the EC will have passed their deadline for compliance, we expect that we will have some firm numbers to compare against at that time.

CHAIRMAN MESERVE: At the end of this you anticipate that throughout the EC, if I understood you correctly, there will be clearance rules and there will be toleration of release of materials that will lead to small amounts of radioactive exposure to the public?

DR. COOL: Yes. What we anticipate is that each of the member states of the EC will adopt into their legislation a regulation, a provision that deals with clearance.

There may be some slight variation in the exact levels that they select in terms of their translation of concentration or quantity. Some may choose to do it by

groupings rather than a radionuclide by radionuclide basis. The net effect will be exactly as you stated.

CHAIRMAN MESERVE: Now I think we all know that metals are imported into the United States from Europe including in automobiles that some of us can afford and maybe many of us like me can't but -- and other things.

Have we had any conversation with the metals industry about how they are going to handle scrap that derives from imported materials?

DR. COOL: On that specific subject, not as an identified agenda topic per se.

The scrap industry I believe would represent to you, and you can check this next week, is well aware of this issue of incoming materials and is equally concerned about that potential for material coming in from offshore versus material that has been generated here within the United States.

CHAIRMAN MESERVE: Do they have a proposal on how to deal with that? Bar all imports?

DR. COOL: I don't believe --

COMMISSIONER McGAFFIGAN: It's hard to find a purely American car manufacturer anymore.

In the old days Detroit might have liked that.

DR. COOL: I don't believe they have suggested a particular proposal in any of the interactions they have

with us.

I expect, absent anything else, that they would behave in a very similar manner. If the alarm goes off, I sent it back. End of discussion.

CHAIRMAN MESERVE: Commissioner Merrifield?

COMMISSIONER MERRIFIELD: Thank you, Mr. Chairman. I want to focus first on pages 6 and 7 of the briefing materials.

On page 6, in characterizing the opinion of the metal scrap and cement industries, it states that they oppose free release because of the potential for economic -- and I would underscore health impacts, potential for health impacts.

Similarly, on the presentation or the characterization of the citizens' groups and individuals, one of the items, the second one is that the risks are too high.

What scientific evidence was provided by either the metals and scrap industry or the citizens' groups to back up those particular claims?

MR. HUFFERT: I'll go ahead and address that. With regard to the letters that were received from the metals industry, most of the focus of the letters were related to economic issues and perception that people would not buy the products, and that this could potentially cause

a shift or a loss of market. That was the focus of most of their letter.

The health impacts were not done -- or the discussion about the health impacts were not scientific, with supporting analysis accompanying the letter, but rather the concern was that -- with regard to the cement industry letter, there was a concern that, in general, cement is used in a variety of public uses, and this would increase exposure.

That was a concern expressed there. With regard to the metals industry, the concern that was expressed was a kind of industry concern that if more scrap started coming in which had the potential to set off alarms, which we have discussed, which might lead to perhaps raising the level of the alarm, which then might lead to some inadvertent meltings of actual sealed sources.

So the concerns expressed, the health impact concerns expressed in the metals and the cement industry letters were of a general nature.

The concerns expressed in the letters from the citizens groups and individuals were of varied nature. There was one type of concern expressed by NRDC that, in fact, what they wanted to see was better analysis of the various potential health impacts, the ability to detect the material, and with regard to uncertainties and regard to

effects from risks.

There was a variety of concerns and comments expressed in the citizens groups letters that risks posed at a millirem are unacceptable.

MR. COOL: If I could elaborate on just one thing, the interactions that we had did not specifically go to, nor did they end up going down a track of holding a discussion on the fundamental question of the acceptability of unaceptability of a particular dose, the linear dose hypothesis or how you would make those transpositions.

They stayed focused on the issues associated with these materials moving in and out, rather than going to that underlying concern, although it was clearly recognized as being there.

COMMISSIONER MERRIFIELD: Having read the transcripts and seen some of the comments being made, there are a variety of consumer products being raised of being of concern -- frying pans and forks and all manner -- eyeglasses and all manner of things.

Are you saying that there wasn't -- that those groups that raised concerns about released materials getting into those products, that they didn't have -- they didn't raise any kind of scientific explanation for why they felt that even a very small amount of material getting in there would have possible public health consequences?

DR. SCHROCK: In the discussions that we had, they clearly expressed their views. In some cases, they expressed some basis for their view in terms of with regard to policy or an overall position.

As I said, we did not engage, nor for the most part, was anything offered of a specific scientific argument of the type that a set of health physicists or detectability folks would attempt to make in that issue.

COMMISSIONER MERRIFIELD: In his opening question, Commissioner McGaffigan talked a bit about some of the comparative issues of exposure to radioactivity, either from building materials and other forms. One could also make comments about airplanes flights across country and things of that nature.

Did the discussions -- and I didn't see to much of it, but did the discussions in those meetings get to some of those comparative exposure issues as well?

MR. HUFFERT: As Tony mentioned in his remarks, in our opening discussions, as we opened to several different sessions at the meetings, we would discuss the context of the types of potential exposures that we were considering here, the range of around a millirem.

We put slides up with regard to how this compared to, as you mentioned, other actions you might take, the background levels that are involved, and also other health

protective standards that we and other agencies have.

And then the conversation was opened up, and as I say, the conversation and the letters went beyond that and said, you know, there should -- this material should be isolated from public use, and that the levels around a millirem are -- especially, some of the comment letters came in and said, well, if you extrapolate the exposure to a millirem over the number of people who would use the material or over the United States, with this material, there would be potential risks associated with that.

COMMISSIONER MERRIFIELD: Okay, in some of the materials I have seen, one of the examples that was used in getting to the economic issue was relative to cars. We had a little bit of a discussion about cars, and I'll proceed on that a little further.

And the concern was that if materials were released, found their way into the steel products, the steel products found their way into cars, that the American public, upon finding out that their Ford Motor product, their Taurus, had radioactive materials incorporated within it, even at every low levels, they would not want to buy that car, and that would have a trigger effect on the steel industry.

Given the fact that our European counterparts are proceeding along a road to allow a release at a one-millirem

standard, and given the notation made earlier this morning that we have international motor companies -- Ford Motor has significant operations in Europe, as does General Motors, and, of course, we all know Daimler-Chrysler is in that regard as well -- are there similar reactions of the public or to those companies that we are aware of in Europe relative to the decision of the EU to move forward on this basis?

Are there these dire economic consequences in Europe that are being postulated by some of the testimony that you receive relative to the economic issues?

MR. COOL: In talking with several of the representatives from particularly like Germany and the UK, and how they're going through this process, one of the things that they said is that they are seeing now, from steel and scrap industry type representatives, these issues being raised, not necessarily the same words, but concerns about materials entering their facilities, concerns tied to sources and detections and how can I tell the difference, concerns about the marketability of their product.

So, yes, I believe it is safe to say that these issues are being raised. They do not have at this point, the same sort of forum that we have been conducting, but they are coming to light, particularly in the EU.

COMMISSIONER MERRIFIELD: I would say, just as a

final comment, I do want to thank the Staff for what I think was a good presentation.

This has obviously been a difficult issue, and given my review of the transcripts, these meetings have not been the easiest for Staff, and I think they are to be complimented for a lot of hard work relative to those meetings.

As my final comment, I would agree with Commissioner Dicus that certainly we need to take a review of all of these issues of the comments we receive from the public next week. Certainly the National Academy of Science study will play a part, certainly, in my decision as to how we should proceed and if we should proceed.

Thank you, Mr. Chairman.

CHAIRMAN MESERVE: Thank you very much. This has been a very helpful discussion for all of us. It is apparent to me that we will have -- we obviously have a scheduled opportunity to ask more questions next week of the stakeholders, and in the future there will be further interactions on this subject.

As the questioning has --

COMMISSIONER McGAFFIGAN: There is one question I'd like to ask, if I could, of these folks, not the public. It has to do with the definition of radioactive material.

I think it sort of bears on clearance, but there

seems to be different definitions of what is radioactive material in different countries.

We have an export case currently before us where there is some material that a licensee, I believe in the south, wants to export to Canada, and part of their application is that this is not radioactive material once it gets to Canada, although it is here. It's byproduct material here.

Do you have a sense -- I mean, we're looking at clearance, but I think we have to look at clearance in context. Do we have a sense, and could the Staff get it at some point, of how, you know, different definitions -- we have a legal framework that comes from the Atomic Energy Act.

We've testified, we've talked about all these different materials that are almost identical, low-level waste, food wrap materials, exempt source material, exempt NARM, NARM.

Other nations probably have equally messed up codes, although we probably can top the list. We're good at that.

But I think at some point it would be useful -- this is not really a question, but is more a statement -- I think it would be useful for us to have a sense, country-by-country, what gaps there are.

The thrust of my questioning is that there is lots of this stuff around. Our stuff gets treated very, very carefully, and there are big microscopes on it, but there are lots of other things floating around that are not under any regulatory framework whatsoever.

And it varies, country-by-country. So Customs and Treasury must have real problems. But as I say, I just thought of it as we were talking here, that there is a case currently before the Commission that's being handled by Staff. It got a little bit of press notice, which is why I noted it, not because the Staff brought it to our attention.

But it was the -- you didn't need to. It was this notion that this material, whatever export case it is, as soon as it gets to Canada, is no longer radioactive.

And I know that's true elsewhere. I know that in the transportation codes and whatever, there are differences. If you could put in in some context at some point, at least for this Commissioner.

CHAIRMAN MESERVE: Good. With that, I think that we've come to an end. We'll have lots of interactions on the subject, I'm sure, in the future. Thank you very much. We're adjourned.

[Whereupon, at 10:50 a.m., the briefing was concluded.]