

UNITED STATES OF AMERICA NUCLEAR REGULATORY COMMISSION

Title: BRIEFING ON ACCOUNTABILITY OF RADIOACTIVE MATERIAL USED
BY MATERIAL LICENSEES

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1 UNITED STATES OF AMERICA
2 NUCLEAR REGULATORY COMMISSION

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4 BRIEFING ON ACCOUNTABILITY OF RADIOACTIVE MATERIAL
5 USED BY MATERIAL LICENSEES

6 ***

7 [PUBLIC MEETING]

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9 Nuclear Regulatory Commission
10 One White Flint North
11 Rockville, Maryland

12
13 TUESDAY, JULY 5, 1988

14
15 The Commission met in open session, pursuant to
16 notice, at 2:00 p.m., the Honorable LANDO W. ZECH, Chairman of
17 the Commission, presiding.

18 COMMISSIONERS PRESENT:

19 LANDO W. ZECH, Chairman of the Commission
20 THOMAS M. ROBERTS, Member of the Commission
21 KENNETH C. ROGERS, Member of the Commission

22 STAFF PRESENT:

23 S. K. CHILK, Secretary
24 W. C. PARLER, General Counsel
25 V. STELLO

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NUCLEAR MATERIAL SAFETY AND SAFEGUARDS:

HUGH THOMPSON, Director

RICHARD CUNNINGHAM, Director of Industrial and
Medical Nuclear Safety Division

ROBERT BERNERO, Deputy Director

P R O C E E D I N G S

[2:00 p.m.]

CHAIRMAN ZECH: Good afternoon ladies and gentlemen.

The purpose of the briefing this afternoon is to discuss the Nuclear Regulatory Commission's program for traceability and accountability of radioactive materials to assure public health and safety. This is an information briefing, and no Commission vote is expected today. Commissioner Carr will not be with us this afternoon.

In March 1988, the staff submitted an information paper to the Commission Sec'y 88-76, which discussed the accountability of radioactive material used by the NRC licensees and the agreement state licensees. The Commission's interest and concern in this area relate to incidents over loss of control of radioactive material resulting in radiation safety, hazards and/or expensive decontamination efforts.

This leads us to be concerned about the ability of licensees to manage radioactive materials properly and, whether or not the NRC and the agreement state regulatory reform program for accountability and control needs improving. The Office of Nuclear Material Safety and Safeguards will brief the Commission today on this subject.

Do any of my fellow Commissioner's have any comments to make before we begin?

[No response.]

1 CHAIRMAN ZECH: If not, Mr. Stello, would you proceed
2 please?

3 MR. STELLO: Yes, Mr. Chairman. I will turn to Dick
4 Cunningham very quickly. I reflected a great deal on this when
5 we were discussing it before the Commission meeting, that the
6 concept or idea of accountability is one issue. But we find
7 that there is a significant issue related to materials
8 licensees where there is significant contamination and
9 questions related to whether there are or are not adequate
10 resources available to clean up the material for licensees who
11 do not appear to have sufficient funding.

12 As you are aware, the Commission issued a rule
13 recently that will deal with this issue in part but it will not
14 solve the entire problem I have asked throughout the briefing
15 so that we make clear the Commission or we may still have
16 problems and need to deal with this issue.

17 Mr. Cunningham will do that during the briefing.
18 With that, Dick, I suppose we can get started.

19 MR. CUNNINGHAM: Thank you, Mr. Chairman. The
20 Commission was provided a set of briefing charts --

21 CHAIRMAN ZECH: Excuse me just a second, Dick. Is
22 our communication system working? Is the reporter doing all
23 right?

24 REPORTER: Yes, sir.

25 CHAIRMAN ZECH: Go ahead, Dick. Thank you.

1 MR. CUNNINGHAM: You were provided with a set of
2 briefing charts, the title page of which says "Accountability
3 for Radioactive Material Used by Licensees." By
4 accountability, as I use the term accountability here, I will
5 be talking and mean; who has it, where did it come from, where
6 did it go, who is responsible for it, is it secure and is it
7 identified. I think that's the context in which we will be
8 discussing accountability today for the materials program.

9 [Viewgraphs.]

10 On the first viewgraph, we have outlined the purpose
11 of this briefing. What I would like to do first is to provide
12 some perspectives on accountability by describing first the
13 size of the program that we are talking about. Then I would
14 like to describe the relationship of accountability failures
15 and the consequences to public health -- consequences to the
16 public health benefits the materials as well as the
17 relationship of failures and accountability to other types of
18 accidents associated with the use of materials. This gets back
19 to what Dick said about cost of clean up and ability to clean
20 up from accidents.

21 Then I would like to discuss the nature of the
22 accountability problems and where they appear to be greatest,
23 where we need to concentrate our effort. Finally, I would like
24 to summarize by summarizing what we are going to do to improve
25 accountability as well as some of the other initiatives to

1 upgrade the program in general.

2 On Chart two, I have summarized briefly the size of
3 the program to get some idea of the size that we are talking
4 about. We have 8,000 NRC specific licensees. These are the
5 materials licenses for nuclear medicine, industrial radiography
6 and what have you, and about 16,000 agreement state licensees.
7 They are almost in direct ratio to the number of agreement and
8 non-agreement states that we have. It is just a scaling factor
9 that we are looking at there.

10 These licenses cover both sealed sources and unsealed
11 sources. The radiography sources are sealed, of course, and
12 unsealed sources in nuclear medicine for example. There are
13 about at least some two million transfers of byproduct material
14 per year. This number of transfers is probably more important
15 than the number of licensees, when talking about accountability
16 because it is the movement of materials that creates the
17 accountability problems.

18 Of those transfers, about 50 percent are medical
19 licensees with relatively short half-life materials. Hospitals
20 have to be resupplied with isotopes every week; the tenesium,
21 iodides and things like that. The resupply is every week.
22 About 25 percent of those two million transfers are industrial
23 and fuel cycle type of shipments that would include anything
24 from radiography sources to shipments of US-6 or fuel to fuel
25 fabrication plants.

1 About 25 percent are very minor shipments. They may
2 be small check sources, they may be sources in smoke detectors,
3 and generally those things that don't require substantial
4 packaging and labeling requirements when they are put into the
5 transportation system.

6 If you go to slide three, I think it's important when
7 discussing problems associated with the use of byproduct
8 materials and the problems of accountability and some of the
9 other accidents that we will get into, to put this in context
10 of the benefits to be derived from the use of these materials.
11 Most uses are important to public health and welfare. Some are
12 of major importance and very few are trivial. When you get
13 down to the trivial range, it becomes highly subjective. Very
14 few of these are trivial uses.

15 I have given you four examples of important uses.
16 One I picked was nuclear medicine, one simple procedure to
17 locate pulmonary embolisms has been very important. Prior to
18 this procedure becoming available in the 1960's the chief cause
19 of death in hospitals was due to pulmonary embolisms. This one
20 simple procedure reduced the death rate in hospitals from about
21 200 per week to essentially zero.

22 Smoke detectors. When we first authorized the use of
23 smoke detectors, people raised questions about why we were
24 authorizing a \$10.00 device with a small amount of Americium in
25 it to be out in the public sector as an exempt product. Now we

1 know that smoke detectors save thousands of lives a year, an
2 estimated billion dollars worth of property damage. Of course,
3 you have all seen it in codes, various codes that smoke
4 detectors are required. Montgomery County requires smoke
5 detectors in houses.

6 Industrial radiography, certainly very important to
7 radiograph welds on bridges, aircraft, hazardous materials,
8 pipelines and not the least of which is nuclear reactors. Well
9 logging, use Americium resources to help explore for oil in
10 Southwestern United States.

11 These are examples of the benefits. Certainly, there
12 are risks associated with that. Our experience with materials
13 is that the risks are of generally low consequence to the
14 public at large. In other words, there aren't wide scale risks
15 associated with this. When an accident does happen, it is
16 usually of consequence an affected or a few affected
17 individuals.

18 Misadministration is an example of how a risk can
19 affect a single individual. Certainly a therapy
20 misadministration can be serious. The cost of clean up though,
21 can be very substantial. The risks are associated with both
22 operations and accountability. In other words, accidents as
23 well as accountability.

24 With respect to accountability, our international
25 experience demonstrates that there is a potential for serious

1 injury or death. I will come back to those in a moment. The
2 U.S. experience, fortunately, is that we have relatively
3 frequent incidents of low consequence. A source gets lost,
4 mislaid, what have you, it is not very serious. But there have
5 been, as a consequence of this, some high clean up costs and I
6 will come back to those in a moment.

7 [Viewgraph.]

8 If you go to the next viewgraph, number five, simply
9 to add more perspective to this we have listed the numbers of
10 licensees possessing certain types of radio nuclei of 10 curies
11 or more. The largest number is Cobalt-60. These are used in
12 radiators, teletherapy units. Strontium-90 is relatively low
13 number used in some R&D, some source fabrication and a few in
14 specialized gauges.

15 Cesium-137 is mainly in gauges of various sorts.
16 Iridium-192 is used for industrial radiography mainly.
17 Americium is used in fairly large amounts for Americium
18 beryllium sources for well logging.

19 CHAIRMAN ZECH: Before you go off that slide, does
20 anybody else want to make a comment?

21 MR. THOMPSON: I was just going to make a comment.
22 That was for sea licensees. You would expect that agreement
23 states may have, again about 2,000 for maybe like a 3,000 total
24 number of licensees. That says authorized to possess more than
25 10 curies. It doesn't necessarily -- they don't always do

1 that, but they are authorized to do that.

2 CHAIRMAN ZECH: My question was, are these the areas
3 that you are focusing on primarily? In other words, are these
4 the areas of maximum risk reduction as you see it? Are these
5 radio nuclei you think pose the greatest threat? Is that your
6 view, is that why you are showing us these as possessing,
7 perhaps, the greatest threat?

8 MR. THOMPSON: Certainly, that was one of the
9 characterizations that we were looking at, as to scoping the
10 problem and who had the material with respect to the large
11 clean up potential problem or the capability to have fairly
12 large exposure to -- radiation exposure to the individuals
13 involved.

14 It is not the only aspect, but we focused on this
15 just to give you a scope of the magnitude of the number of
16 licensees involved in this activity. When we go forward we are
17 talking in the thousands as opposed to in the hundreds or
18 fifties, that it is a fairly substantial effort on our part.

19 CHAIRMAN ZECH: Do you see this is area you are not
20 only focusing on to bring to our attention but is this the area
21 where you are putting your resources on primarily?

22 MR. CUNNINGHAM: No, sir. I think that in this area,
23 this has potentially the greatest risk if you lose
24 accountability. I think we have better accountability
25 regulations covering these types of things.

1 CHAIRMAN ZECH: Are we focusing on this area; do we
2 give this priority then if it has that kind of --

3 MR. CUNNINGHAM: I would like to go on to the general
4 license things that I think have the greatest accountability
5 problems that exist today. There are two aspects of the
6 briefing. One is what are the risks, so that you have an
7 appreciation for the licensees who pose a risk. The other one
8 is, where do we have our major regulatory weaknesses in our
9 accountability program.

10 We have certain accountability, inventory control
11 reporting requirements on these licensees. There are those
12 licensees which we have a very weak regulatory program for
13 accountability purposes. Those, we believe, pose the greater
14 risk right now to a loss of control. These, we are looking at
15 in a longer term with respect to making sure the programs we
16 have in general -- make sure that if there are improvements
17 needed, this would be the second area of focus.

18 CHAIRMAN ZECH: Let me just see if I can pose the
19 question differently. My concern is, we have 8,000 specific
20 licensees that you told us. The agreement states have 16,000
21 specific licensees in the agreement states. We have at least
22 two million transfers per year. That is an awful lot of
23 activity.

24 My concern is that you should have some system of
25 priority in covering this large number of licensees and

1 transactions. I would hope that we would be focusing your
2 priority on those areas of the greatest risk.

3 MR. CUNNINGHAM: Yes, sir. That is what I will hope
4 to show later on. There are priorities on these kinds of uses
5 that are a little bit different than the priorities on the
6 general licensees. Some of the problems with these are
7 accountability problems, a little bit different than they are
8 with the general licensees.

9 CHAIRMAN ZECH: Somewhere in the briefing, please
10 focus on the priorities as regards risk.

11 MR. CUNNINGHAM: Yes, sir.

12 CHAIRMAN ZECH: I hope you will be able to tell us if
13 you are trying to focus on those areas where there is the
14 greatest risk. When you are dealing with this many licensees
15 and when you are dealing with this wide a range of
16 transactions, as you have told us, it seems to me that in order
17 to realistically monitor such a system and to provide for the
18 public health and safety, you have to have a system of
19 priorities that shows that you are trying at least to focus on
20 those areas that have the greatest risk to the public.

21 If you will keep that in mind, let's continue with
22 the briefing. Somewhere along the line, I hope you will
23 address that in just a little more detail.

24 MR. CUNNINGHAM: I can do it now or I can do it
25 later, but I would like to bring in the general licensees and

1 show how that fits and then come back --

2 CHAIRMAN ZECH: Do it later, that's fine. Just do
3 it. Thank you.

4 MR. CUNNINGHAM: Materials under general licensing,
5 you will recall that for general licensees that there are rules
6 by which general licensees must comply with but they do not
7 need to apply to us for a specific license. They don't have to
8 submit a piece of paper and get a license from us before they
9 can obtain the materials.

10 These are usually in devices with inherent safety
11 designs so that there is little training or safety facilities
12 required for users. They are supposed to comply with certain
13 basic rules, however. This covers a wide gamut of things.

14 Gauges of various source, industrial gauges, static
15 eliminators, gas chromatograph, exit signs, various pieces of
16 industrial equipment. There are about 300,000 devices out in
17 use. We do get quarterly reports of transfers. There is
18 little NRC effort expended on routine inspection of these
19 devices, due to the large number and relatively low hazard of
20 most of these devices.

21 [Viewgraph.]

22 If you go to viewgraph seven, we have accounting
23 requirements in various parts of the regulations. Remember, I
24 defined accounting as mainly keeping track of where things are.
25 The accounting requirements or accountability requirements in

1 the regulations has grown over the years as new uses have been
2 added to the regulations, or as a particular kind of problem
3 developed and the regulations were amended to cure those
4 problems.

5 We have about three decades of history of these
6 regulations. The requirements are generally related to hazard.
7 However, the concept of hazard, of course, has changed over
8 these years. The idea of what is hazardous and how tightly we
9 should control things has changed over the years somewhat, so
10 that the regulations are a little bit different as these things
11 were added.

12 As I said, they are scattered throughout regulations
13 in parts 20, 30 and 40 and there are, at our count, about 30
14 specific requirements related to accountability as I have
15 described them. Our accountability requirements for byproduct
16 materials are certainly less stringent than the safeguards
17 requirements for SNM.

18 It is worth noting that SNM, I understand, has about
19 20,000 transfers per year as compared to the two million. It
20 costs NRC about \$1 million to keep track of these and \$3
21 million for DOE. So, you get some idea of what would be if you
22 used a simple scaling factor to keep track of these in a manner
23 similar to the way we do for SNM materials that fall under
24 safeguard requirements.

25 [Viewgraph.]

1 If you go to the next slide eight, agreement states
2 operate just about the same way that we do. The agreement
3 states have recognized that there is an accountability problem.
4 One thing the agreement states do more of than we do is inspect
5 general licensees. They put more emphasis on the inspection of
6 general licensees than we do. Some of the states require
7 registration of general licensees and they also charge a fee;
8 we do not.

9 Now getting to examples of problems in the next
10 chart, slide nine. Here is a listing of some of the types of
11 accidents, incidents that have taken place over the last few
12 years that have an accountability problem associated with them.

13 Cobalt-60 contamination in New York. This is in a
14 New York scrap recovery plant. It was found contaminated with
15 Cobalt-60. We estimate that it was 25 curies and it cost about
16 \$2 million to clean up. We don't know where the Cobalt-60 came
17 from. Probably from an old radiography source perhaps, or an
18 industrial gauge of one sort or another.

19 In Mexico in 1984, a teletherapy source was broken up
20 in a scrap yard unknown to the Mexican Nationals that did it.
21 The scrap was sold to various steel fabricators. The Cobalt-60
22 entered into the steel, fabricated into rebar among other
23 things, and was shipped back to the United States for
24 construction of houses and buildings and there was a problem
25 there.

1 Cleaning it up, tracking it down, cleaning it up, and
2 there were injuries in Mexico with people that had direct
3 exposure to the pellets. A radiography source in Morocco
4 somehow lost control of that. We don't have much information
5 on it. We do know it was a 30 curie iridium source. A worker
6 took it to his home -- I think it was a one room house -- and
7 it resulted in eight deaths. Again, we don't have much
8 information on it.

9 There is some cesium contamination found in a
10 California plant, mainly in the off gas treatment system.
11 About a curie and one-half of cesium and a million dollar clean
12 up. We had an abandoned gauge in Missouri involving a curie
13 and one-half of Cobalt-60. The gauge was recovered and we
14 fined the company \$15,000.00. The Americium-241 contamination
15 in Ohio, this is the Wright Patterson thing that I don't we
16 need to go into further.

17 Most recently, the unfortunate incident in Brazil,
18 very similar in initiation to the one that happened in Mexico.
19 A scrap dealer in Brazil took a cesium teletherapy device. The
20 teletherapy device was in an abandoned clinic. It was opened
21 up at the home of the scrap dealer. It had some luminosity.
22 The children painted the cesium faces and several people died
23 of that. There was widespread contamination.

24 I understand thousands of people were surveyed to
25 find out if they were contaminated. The point here is that if

1 not properly controlled, the larger sources can cause death.
2 The smaller sources usually would not cause death, but they can
3 result in expensive clean ups.

4 MR. STELLO: That, I think, is part of the question
5 you asked earlier. The radio isotopes that are listed on page
6 five are, in fact, all of the isotopes that are involved in the
7 major problems where there has been significant injury and
8 death to the public as a result of devices of these particular
9 radio nuclei listed on slide five.

10 CHAIRMAN ZECH: Are we taking the next step then, and
11 using these examples and our recognition that these are the
12 most likely areas of risk to focus our own efforts?

13 MR. STELLO: A short answer is yes, but that's not
14 the limit of the problem because there's more and we will get
15 to it in a minute.

16 COMMISSIONER ROGERS: I take it that these are
17 examples where accountability is a principal problem rather than
18 something else, just knowing where the stuff was and where it
19 should not have been?

20 MR. CUNNINGHAM: Accountability was the precursor of
21 the problem at least, it started the problem. In any one of
22 these, certainly there must have been accountability when the
23 Cobalt-60 went into the New York scrap plant. We don't know
24 where it came from. Somewhere, that Cobalt-60 is missing.

25 The teletherapy device in Mexico, again, that was

1 serious. It was in a warehouse. It had been stored there for
2 years. A question whether somebody forgot about it, gave it
3 away, what have you, but ended up in a scrap yard. All these
4 have an element of accountability in them.

5 COMMISSIONER ROGERS: A breakdown of it.

6 MR. CUNNINGHAM: Yes.

7 COMMISSIONER ROGERS: A breakdown of accountability.

8 MR. CUNNINGHAM: Yes.

9 MR. THOMPSON: Somewhere the system broke down or
10 maybe in the Americium, the system broke down because of
11 actions of individuals that may have been a violation of the
12 rules and regulations. The regulatory system may have been in
13 place, but it was just essentially undermined by people not
14 following the current rules and regulations.

15 Obviously, we are taking certain enforcement actions
16 in these cases to highlight the Commission's seriousness about
17 having control and accountability of these type of materials.

18 MR. CUNNINGHAM: To get to your last question, Mr.
19 Chairman, what are we doing about these kinds of things, I
20 think the next viewgraph number 10 will start the process.

21 [Viewgraph.]

22 The first thing we need to do is have good
23 communications on what happens and good communications with our
24 licensees to prevent it happening. The list of the larger
25 groups of isotopes, I think we are increasing our site visits

1 prior to licensing to be sure that people understand what is
2 going to be required of them and that they have the capability
3 of meeting those requirements.

4 We have put out the NMSS Newsletter. The second
5 volume of that or second issue of that will be out within the
6 next few weeks. It gives information about problems like this.

7 MR. THOMPSON: To go back to that first point, Mr.
8 Chairman, I think that is a real key element that we have been
9 working with the regions to make sure that you don't give a
10 license to a new individual or company out there, that they
11 don't have the capability, the understanding and the
12 appreciation of the importance of maintaining a safe
13 environment.

14 In fact, this is clearly one of the issues that we
15 recognized from the Americium at Wright Patterson. We ended up
16 licensing an individual in a facility that just really wasn't
17 prepared to maintain the appropriate accountability and control
18 of that material. That is certainly something that we want to
19 ensure never happens again.

20 Those are some of the steps that we have taken
21 specifically to address preventing the problem from happening
22 and getting into the type of licensing that could occur.

23 CHAIRMAN ZECH: Disciplining our own process?

24 MR. THOMPSON: That is correct. Our own in the
25 training, the communications with the regions of what kind of

1 problems we are having to make sure that we are aware that we
2 give only -- improve the standards that we are expecting from
3 our licensees.

4 CHAIRMAN ZECH: Fine.

5 MR. CUNNINGHAM: You will notice that I have just
6 described situations where scrap recovery plants have been
7 contaminated. This is one of the kinds of problems we have
8 with that. I would like to provide you -- we worked with the
9 scrap iron and steel industry to develop this information
10 booklet.

11 [Booklet passed to all Commission members.]

12 I think it can be showed on the television screen
13 too. We met with the Scrap Iron and Steel Industry. Working
14 with them, helped them develop this booklet which they sent to
15 scrap collectors and scrap steel processors. We know for a
16 fact that it has paid off, because scrap iron and steel people
17 have found these sources; they have installed detection
18 systems; they have called us and asked about questionable
19 things.

20 In conjunction with that, we also -- and this is
21 rather clumsy, I am sorry to say -- it is a big poster that we
22 made available to the scrap steel people. We borrowed this
23 from the Canadians. Our grievance state people found -- saw
24 that the Canadians were doing this. We borrowed their idea.

25 [Poster handed to all Commission members.]

1 It was modified somewhat and made useful for our
2 purposes. These are, in fact, posted in a number of scrap
3 recovery yards and people do use them. They have looked at
4 these and they have called us and asked about certain types of
5 devices from time to time. Those kinds of things work.

6 It shows an effort cooperating with industry, that
7 certainly isn't one of our licensees but certainly has an
8 interest in what we do, paying off. We do, when we have
9 incidents, we try to publicize those incidents so that people
10 understand what happened, why it happened, and what should be
11 done to prevent it from happening again.

12 Where we find violations, we have taken vigorous
13 enforcement action. That one place where they lost track of
14 the gauge, we fined them \$15,000.00. Again, I think the
15 Commission is aware of the enforcement action that we took in
16 the Wright Patterson case.

17 From time to time in the past, we have mentioned
18 publication in professional journals. When we find
19 professional journals that we have an opportunity to publish
20 in, we take advantage of that because it is professional
21 journals where various groups of people read, maybe more so
22 than they would something that we would send to them directly.

23 We do have cooperation with Federal agencies. We
24 work jointly with Federal agencies. I have listed three more
25 as examples. In the case of FDA, FDA is responsible for the

1 safety of devices; teletherapy devices and the mechanics of the
2 teletherapy devices; we have cooperated with them on a number
3 of things. One of the things we have done is, when they found
4 a design defect we have taken information that FDA has provided
5 us and notified all of our licensees about it, or all the
6 licensees that have a certain model of device.

7 DOT, and we cooperate very much together in looking
8 for loss sources and investigating accidents. U.S. Customs, we
9 get calls periodically from Customs of things being imported in
10 the Country and asking if the consignee has an appropriate
11 license. Customs has been very cooperative with us.

12 International support, we are trying to increase our
13 support internationally so that in developing countries and
14 other countries we prevent these accidents that have very, very
15 severe consequence some of which come back to us like in
16 Mexico.

17 CHAIRMAN ZECH: What kind of a program do we have of
18 exchanging information internationally? Do we have any kind of
19 a formal arrangement in that regard?

20 MR. CUNNINGHAM: On the incidents?

21 CHAIRMAN ZECH: Yes.

22 MR. CUNNINGHAM: We do --

23 MR. THOMPSON: They normally come into AEOD. AEOD
24 does the review and identifies the specifics. It depends, I
25 think, on which agreements we have with the various countries.

1 CHAIRMAN ZECH: Does IAEA get involved in this
2 program?

3 MR. STELLO: I don't believe so, Mr. Chairman. I
4 don't think the IAEA gets into the --

5 CHAIRMAN ZECH: Materials licensing?

6 MR. STELLO: That is an individual --

7 MR. THOMPSON: They are in the safeguarding aspect of
8 it from a liability -- for special nuclear material.

9 MR. BERNERO: Let me interject. Later this year you
10 will be over at the IAEA. They are devoting a special session,
11 the scientific afternoon to incidents like the Glionia, Brazil
12 incident. There is growing interest in the IAEA, especially
13 with respect to relations between supplier and receiver
14 nations. There are a handful of nations that make radioactive
15 sources of this type and ship them to other nations.

16 There is growing interest in the IAEA in getting some
17 sort of international coordination or international program in
18 that.

19 CHAIRMAN ZECH: It seems to me that is an area that
20 perhaps should be pursued, because IAEA is a responsible
21 organization involved in international atomic energy matters.
22 It seems to me that if they are not already set up to
23 coordinate some of these incidents perhaps they should be.

24 If we haven't approached them on that, perhaps we
25 should.

1 MR. CUNNINGHAM: Yes. Mr. Chairman, that is one of
2 the things on the agenda following the general conference.
3 There is going to be input from that scientific session, there
4 is going to be a group of people to go over a series of things
5 that can be done that will be useful. That is one of the
6 things on it.

7 As a matter of fact, if you go to the next slide
8 discussing follow-up from the Brazilian incident, if you go to
9 the last bullet on that slide.

10 [Viewgraph.]

11 The IAEA has prepared a follow-up report on the
12 Brazilian incident to derive lessons learned from the Brazilian
13 incident. We are sending -- NRC is sending Carl Paparilla of
14 Region 3 down there to participate in that report, it's
15 preparation and completion of the lessons learned. Marty Moss,
16 in fact, was down in Brazil a couple of weeks ago on
17 legislation to improve their -- designed to improve their
18 program.

19 IAEA hasn't been in as much in the past. They are
20 getting into it more, and this is the kind of thing we are
21 going to be pursuing with IAEA.

22 CHAIRMAN ZECH: Fine. Perhaps when we are in IAEA at
23 the convention here in a couple of months, we should follow-up
24 on that.

25 MR. CUNNINGHAM: Yes, sir.

1 CHAIRMAN ZECH: Will you be there?

2 MR. BERNERO: No. Mr. Cunningham will be there.

3 MR. CUNNINGHAM: I will be there.

4 CHAIRMAN ZECH: You will be there, fine. Let's both
5 of us make a note of that and approach IAEA officials while we
6 are there at various levels, and see. It seems to me that
7 internationally there should be some kind of coordination
8 effort so that the word on these incidents does get out and is
9 coordinated internationally.

10 MR. CUNNINGHAM: Yes, sir.

11 MR. BERNERO: Excuse me, sir. If I could digress
12 just a little bit. There will be more to it than the
13 information sharing or incident reporting. There will be
14 serious policy questions like if one nation sells high activity
15 sources of relatively long half-life to a less developed nation
16 for use in medical teletherapy say, does the vendor nation have
17 an obligation to take that source back for disposal.

18 In other words, the Glionia source was a teletherapy
19 source that was no longer useful. But, where should they have
20 sent it? Did they have a logical place in which to dispose of
21 that source? We have that very question within our own nation.
22 But in the IAEA context, you will get policy issues like that
23 between nations, the suppliers and the user nations.

24 CHAIRMAN ZECH: As you recall, a couple of years ago
25 the two that were signed in Vienna, one on assistance and the

1 other on notification for reactor incidence. Perhaps this is a
2 natural extension of those international commitments in an area
3 of nuclear materials, especially those that might be more
4 significant events.

5 In other words, a commitment not only to inform but
6 to assist if it looks like there is some very significant
7 contamination problem, a radiation problem. It would be a very
8 interesting subject, I think to discuss in Vienna when we go
9 there in a couple of months to see if they have anything in
10 mind in that regard.

11 COMMISSIONER ROGERS: I wonder if I could just make a
12 point here, because this somewhat touches on a concern that I
13 have. It is a question on the use of the term
14 "accountability." I think what you just touched on was
15 accountability, and what you have been talking about is
16 accounting.

17 They are quite different. They are related, but they
18 are quite different. Accountability is a much broader concept,
19 and one which poses certain kinds of obligations and is
20 something that one holds an individual or corporation or an
21 entity for. That is accountability. Accounting is keeping
22 track of things, keeping records, keeping track of information.

23 I think that it would be a good idea to try to
24 separate the use of those words here, because I think it's
25 useful to do that. What we are talking about is really both,

1 accounting and accountability. But the term accountability is
2 being used interchangeably with accounting and that is a much
3 more limited concept. I think what you are talking about posed
4 the question of accountability.

5 When one produces a sources and sells it, what kind
6 of accountability does one have for that --

7 MR. BERNERO: Yes. The buyer takes the
8 responsibility for those isotopes, for those curies and thereby
9 pledge to hold them for the necessary period of time or to
10 dispose of them. What Dick in his opening remarks -- we are
11 talking about who is responsible for these isotopes, who is in
12 charge of them, who has that burden? That is --

13 COMMISSIONER ROGERS: I don't want to disrupt your
14 presentation, but I would hope that you might think this
15 through a little bit more with respect to separating, and being
16 more explicit when you are talking about accounting and
17 recordkeeping and tracking which is a part of accountability
18 but it's only a part.

19 MR. CUNNINGHAM: That is very helpful, Commissioner
20 Rogers, because it goes back to the question the Chairman had
21 and the difficulty in answering it. What gets first priority?
22 If you are talking about accountability, then the answer rests
23 in the larger sources. Accounting is the smaller generally
24 licensed sources. These two are getting mixed together, and
25 that's why we have such difficulty separating those.

1 When I get back to the summary and try to answer the
2 Chairman's questions, I will talk about accountability and
3 where accounting fits into that.

4 CHAIRMAN ZECH: Fine. Proceed, please.

5 [Viewgraph.]

6 MR. CUNNINGHAM: On slide 11, I just should note that
7 when we did get word of the Brazilian incident, we did notify
8 our broad licensees because of the nature of the accident, that
9 they should really, if they have large sources in long term
10 storage and they are not using them they should really get rid
11 of them. This does bring up a problem though, because if they
12 are above Class C like your radiator sources, there is no place
13 to dispose of them at the present time.

14 We are, of course, working with DOE as a separate
15 matter to try to get them to take Class C waste.

16 MR. THOMPSON: They have the overall responsibility.
17 We just have not developed a disposal facility that is
18 addressed by the proposed rule we had for that type of material
19 would get into a repository, but that's some years off.
20 Obviously, we are looking at the framework of what do you do in
21 the meantime which is kind of a storage arrangement.

22 CHAIRMAN ZECH: All right. Let's proceed.

23 MR. CUNNINGHAM: Proceeding with staff actions,
24 improvement in the general license program. Here, the problem
25 is accounting; who has the sources, knowing where they are.

1 This is the main problem with the general license program. We
2 are in the process of developing a real change that would
3 require accounting of these sources on a periodic basis to NRC.
4 The staff is working on that now and will be submitted to the
5 EDO within the next few weeks.

6 There are other problems with general licensees, as
7 indicated by the 3M static elimination device problem. There
8 are some other things we have been experiencing. The staff has
9 developed a paper which encompasses a larger investigation
10 program into general licensees.

11 Basically, there are a number of questions and we
12 hope to prioritize what we are going to do with general
13 licensing. We are looking over about three decades of
14 experience and growth in that industry since it began. We do
15 have, we think the priorities are probably emphasis on QA,
16 product testing, limits on quantities for general licensees and
17 get back to the thing that Dick had, who is responsible for
18 clean up if one of these gets away and do they have the
19 financial resources to do a clean up.

20 [Viewgraph.]

21 Going to the next slide, summary and future
22 direction. This is where I try to summarize a question -- your
23 question, Mr. Chairman. Use of byproduct materials do have
24 significant benefit to the public. In terms of accountability,
25 there are regulatory improvements needed to be pursued.

1 I think high on these lists in the materials areas,
2 the one that you are very familiar with in this administration
3 rules, to try to reduce misadministration, to upgrade
4 radiography performance, to provide financial assurance so that
5 both in instances when a site is decommissioned there are
6 resources to do it. Also, financial assurance so that if there
7 is an accident there are resources to clean up those accidents.

8 It is one of the more important things we have,
9 because most of our accidents do not result in great public
10 health and safety problems. But they do require clean up to
11 get rid of the waste and make it proper again. Our goal here
12 is to reduce the frequency of incidents with emphasis on the
13 serious or wide scale incidents.

14 [Viewgraph.]

15 Turning to the last slide, the accounting part of the
16 problem with general licensees is as I just said. There, we
17 are trying to develop a rule that would have an annual
18 accounting method. We are also looking at some other
19 improvements in the general licensees. As we discussed, we are
20 going to support IAEA in its program, their initiatives they
21 are current undertaking to improve materials control throughout
22 the world and reduce the risks.

23 That is the conclusion of my briefing, Mr. Chairman.

24 CHAIRMAN ZECH: Thank you very much.

25 MR. STELLO: Let me try now to pick up another

1 portion of this answer that I started the meeting with, and
2 that's the facility's -- and the true word here is
3 accountability -- which are given initial licenses and then
4 over a period of time corporations change names which look like
5 simple name changes. Eventually the assets of the corporation
6 at the beginning when they were licensed are no longer
7 available at some period of time. Hence, you can have a very
8 substantial clean up of a facility once it is no longer being
9 used as an accountability problem.

10 These involve isotopes differently, for example, than
11 those that are in slide five on that table. They are clearly a
12 concern to us and are being given priority, since someone will
13 be faced with substantial clean up of facilities once they are
14 no longer being used.

15 We have had a number of examples of these in the
16 past, and we are still finding that there are other facilities
17 out there and we have made changes to accommodate this. The
18 rule that we have passed covers a number of these facilities
19 but we are just beginning to implement it, so I suspect that
20 there will be -- with respect to getting surety bonds and
21 enough funds for decommissioning and clean up -- I do expect
22 that we will see problems with facilities as we start
23 implementing that rule.

24 I think we will find that there are facilities not
25 covered by that rule, for which there will be inadequate funds

1 available to decontaminate and clean up. That is a true, if
2 you will, accountability problem but not an accounting. We
3 know where the material is and know generally how much of it is
4 licensed to be there. We can go through the arithmetic and
5 show that they are complying.

6 CHAIRMAN ZECH: What would expect to be done in that
7 circumstance?

8 MR. STELLO: We are developing -- we have one now --
9 we are going to be developing a plan for how to proceed dealing
10 with a particular facility. Each and every case is probably
11 going to wind up being custom until we find a way to get some
12 more general process in place like perhaps even another rule
13 to cover other facilities.

14 CHAIRMAN ZECH: We are talking about priorities and
15 accountability and so forth, I guess my concern in this
16 particular area would be with the smaller licensees who may not
17 have the financial strength that would support a clean up
18 endeavor.

19 So, I do think this is something that we should look
20 at very carefully.

21 MR. STELLO: Yes, sir.

22 MR. THOMPSON: We have, in the past, been able to get
23 some support from EPA. Remember on the J.C. Haynes clean up in
24 that activity. That is not, obviously, the best way to go. It
25 certainly is kind of a last resort, but there are those types

1 of resources that are available from the Superfund Clean Up
2 activities which your effort is to try to get the facilities as
3 clean as possible using the current licensees and the person
4 who really is accountable for the licensed activity.

5 COMMISSIONER ROGERS: What is the insurance situation
6 covering this? Are any of these possibilities covered, the
7 smaller operations with insurance?

8 MR. STELLO: We have a new rule now which will
9 require demonstration of adequate assets -- I have forgotten
10 the number of the rule. It was just passed by the Commission.
11 We are in the process of implementing it. With respect to
12 adequate funds, you remember that there was a scale in the rule
13 of money, a scale to the seriousness and expected cost of
14 decontamination.

15 When that is in place, then there will some sort of
16 insurance. Until that time --

17 MR. THOMPSON: I think some earlier studies were done
18 to find out what does the insurance industry have available, if
19 you wanted to get insurance on an accident type of situation.
20 That particular -- I think it is very expensive for getting
21 accident type of clean up insurance.

22 Most people felt that the benefit versus the premium
23 would be not in favor of having that, if they had a mutually
24 run insurance. It would probably take some effort on the
25 nuclear licensees together to form some type of mutual

1 insurance bill to act effectively through that and provide for
2 accident insurance.

3 We haven't quite gotten to that rulemaking activity
4 yet, but it is an important one with respect to the liability
5 of contamination of sites.

6 MR. BERNERO: There is another aspect of the clean up
7 problem that is worth considering. In the past where vigilance
8 has not been exercised over the individual licensees -- I can
9 think of one case in Cleveland. A company that makes sealed
10 Cobalt-60 sources, over a period of years due to casual or
11 sloppy operation, they slowly but surely contaminated the
12 facility very badly.

13 Now, it is not an accident and it's not a normal
14 operation. But it's a major expense to clean up that facility
15 properly and yet, it continues to try to operation. There's
16 that tension that if you make me clean up you bankrupt me or if
17 you let me operate then I don't clean up. If you let me
18 operate I will set a few dollars aside and clean up slowly.

19 We don't want to get into that situation. That is
20 one that should not have occurred. We should have exercised
21 enough vigilance 10 years ago to be able to discover that, long
22 before it got to the multi-million dollar state. We hope with
23 present levels of vigilance, will avoid cases like that.

24 MR. CUNNINGHAM: That is part of the front end work
25 that we are trying to do with licensees.

1 CHAIRMAN ZECH: Again, this is the area that I am
2 talking about, priorities. Sometimes we need to focus
3 priorities on a specific area like that.

4 MR. STELLO: It is beyond those isotopes that were
5 specifically listed in the table. That is why we were
6 struggling to answer the question, because those are important.
7 In addition, isotopes other than that for different reasons,
8 can be equally important and need our priority as well.

9 CHAIRMAN ZECH: Certainly.

10 MR. STELLO: To further answer Commission Roger's
11 question, we have some facilities that go back 50, 75 years --

12 COMMISSIONER ROGERS: Pre-atomic energy.

13 MR. STELLO: They are even pre-atomic energy and go
14 way back.

15 CHAIRMAN ZECH: Is there anything else?

16 MR. STELLO: No.

17 MR. CUNNINGHAM: No, sir.

18 CHAIRMAN ZECH: That is the briefing?

19 MR. STELLO: That's the end of the briefing, yes,
20 sir.

21 CHAIRMAN ZECH: Any questions of my fellow
22 Commissioner's? Commissioner Roberts?

23 COMMISSIONER ROBERTS: I don't have a question, it's
24 an observation. It is a difficult problem, and you give
25 examples of problems. Some of these are well publicized and

1 everybody knew about them. I shutter to think that any similar
2 incidents if not worse, we don't even know about.

3 MR. STELLO: I think the last few years, our
4 bilateral agreements with countries -- if any country knows
5 about them where it's known -- I feel pretty comfortable that
6 we get the information.

7 COMMISSIONER ROBERTS: Okay.

8 CHAIRMAN ZECH: Commissioner Rogers?

9 COMMISSIONER ROGERS: What is the status of any of
10 those recommendations that are relevant here to the 22
11 recommendations made by the Material Safety Regulation Review
12 Study Group? What are their recommendations, relevant to what
13 we are talking about today?

14 MR. CUNNINGHAM: We have a briefing in August on
15 that. The radiography upgrade is one of them, better
16 communication with licensees, better training, more inspection.

17 COMMISSIONER ROGERS: Are all of those essentially a
18 little bit different from what we are talking about here, or is
19 there some overlap?

20 MR. CUNNINGHAM: The recommendations of that group
21 were more focused, I believe, on the staff quality, the staff
22 approach to licensing and inspection than dealing with specific
23 problems out there that might exist. Now, that is not entirely
24 correct. They made recommendations like had more licensing
25 guides out there. They did ask us to look in radiography

1 certification.

2 I am trying to recall the specific ones. There was
3 more our functions vis-a-vis what the licensee does that the
4 MSRRSG recommendations addressed. I think we are pretty well
5 along in most of those. Some of them have no end, because it
6 is something that you have to work at continuously.

7 COMMISSIONER ROGERS: How much of these problems that
8 are out there that we are worrying about in some way have their
9 genesis in the fact that there is no really clearly identified
10 waste disposal facilities for these things? If somebody
11 doesn't know where they are going to send something they will
12 just walk away from it. They leave it on the local street
13 corner.

14 MR. CUNNINGHAM: I think that certainly the clean up
15 of some of these low activity large volume facilities are
16 associated with either no facilities available, high cost of
17 disposal or awaiting something that we could get under these
18 exempt waste treatments. It is a combination of those things.

19 There is a waste disposal problem there, not only in
20 the physical facilities but the high cost that sometimes
21 doesn't make any sense.

22 MR. STELLO: There is at least one case where the
23 coupling is one to one. As I remember the Haynes issue, the
24 reason that wound up where it did is that there is no disposal
25 facility available for it. At least there are several others

1 for which there is, at least, a connection.

2 It is clearly a part of the problem.

3 MR. THOMPSON: As a follow-up, the Brazil when they
4 had the Cesium radioteletherapy unit, we did a survey to see if
5 there were similar type of facilities in the U. S. We
6 identified a handful that were there, not in use and really no
7 place to send it. That is one of the issues that we are
8 addressing with DOE.

9 Obviously, there is some Congressional interest about
10 having to license the DOE facilities. So there is some tension
11 between having a licensed DOE greater than Class C storage
12 facility while we are awaiting to get a greater than Class C
13 disposal facility.

14 MR. BERNERO: Right now, if we identified a
15 teletherapy unit in the state of neglect somewhere that we
16 happen upon, we could declare that or identify that as an
17 emergency condition and DOE would be able to accept that source
18 and take care of it on that basis, as an emergency.

19 There is not now an existing procedure, protocol or
20 fee schedule for DOE in an orderly fashion to identify that
21 handful of teletherapy devices like Glionia to say we are going
22 to take care of that in the long run and here's the way you get
23 rid of it. Here's what you have to do, and here's an orderly
24 way to avoid emergency situations. We don't have that in place
25 right now.

1 CHAIRMAN ZECH: What are we doing about it?

2 MR. STELLO: There is some activity in proposed
3 legislation that we have had discussions on that. We would
4 like to see DOE opened to formal receipt and storage pending
5 disposal in a suitable facility.

6 CHAIRMAN ZECH: In the meantime, what are we doing
7 about it?

8 MR. THOMPSON: We have dialogue with the DOE
9 facilities and the individuals who are in charge of the waste
10 program. In fact, I am having a meeting with them tomorrow.
11 One of the issues that we are discussing is precisely this one.

12 We have not tried to negotiate a memorandum of
13 understanding or anything like that, but I am certainly
14 prepared to explore with them if there are ways that we can
15 assist on having a disposal facility or at least a storage
16 facility.

17 CHAIRMAN ZECH: It seems to me that we have two
18 problems. One is a long range problem, which may require
19 legislation in time. The shorter range problem is if we have
20 problems out there right now with some of our smaller licensees
21 in particular that are causing potential contamination
22 problems, what are we doing about it?

23 MR. STELLO: I think we probably need to go back and
24 look at what more we can do about it. The long term problem is
25 clearly solved with the existence of the low level waste issue

1 being resolved by these things, the high level repository.

2 CHAIRMAN ZECH: Aren't our licensees aware now of the
3 low level waste disposal sites and their responsibilities to
4 not walk off from radiation and contamination areas?

5 MR. THOMPSON: They are. I think like Bob Bernero
6 was saying, there is a question of cost. How much is it going
7 to cost? There is no fee schedule, there's no clear way right
8 now for them to --

9 CHAIRMAN ZECH: Don't they have --

10 MR. THOMPSON: -- existing emergency to really get
11 rid of the material. I don't think DOE -- is not inclined to
12 say just give it to us and we will take care of all the
13 expenses for you.

14 CHAIRMAN ZECH: We can't just, in my view, do nothing
15 about that. First of all, what you said earlier, we should
16 focus more on making licensees more responsible in the
17 beginning. On the other hand, if we have licensees out there
18 now who are not properly handling radioactive materials we
19 ought to do something about it.

20 MR. THOMPSON: I think once we know about them, then
21 I think we take the action -- a measured action.

22 COMMISSIONER ROGERS: Make sure we know about it.

23 MR. THOMPSON: --for example, the facility that Bob
24 was talking about earlier that had contaminated their facility.
25 It was the tension between ordering them to clean it up versus

1 shutting them down and --

2 CHAIRMAN ZECH: I understand that. My question is
3 not the ones that we know about. I think the ones that we know
4 about we are handling responsibly. I think that's what you are
5 telling us; is that right?

6 MR. THOMPSON: Let's put it this way, we certainly
7 are actively addressing each of those in a responsible fashion
8 if there's no public health and safety issues in the short
9 term. Obviously, some of them present a long term problem that
10 is a financial situation. How long are we prepared to let them
11 to continue to monitor the situation to protect public health
12 and safety rather than clean it up.

13 CHAIRMAN ZECH: It's not the ones that we know about
14 that are concerning me as much as the ones that I think you are
15 telling us that we don't know about sometimes. I am saying,
16 what are we doing about that? What are we doing to try to know
17 about the ones that are problems out there and we are not aware
18 of?

19 MR. STELLO: We presented it in the briefing, what we
20 are trying to do for accounting to improve our ability to find
21 those. We still have a problem even when we find them, of
22 whether there is sufficient funds, any place in which to send
23 the material.

24 In most cases it becomes an issue where the
25 significant issue is going to become the availability of the

1 funds. Those become special, case-by-case issues and we are
2 handling them one at a time. I think you are raising a
3 question of isn't there a more systematic and better way to do
4 this in a generic fashion and make it easier.

5 CHAIRMAN ZECH: Right.

6 MR. STELLO: We are looking at that, and I think we
7 probably need to go back and find some institutional way to
8 deal with it that will improve it.

9 CHAIRMAN ZECH: Let me ask the staff to take that one
10 then, and perhaps NMSS can take it for action to get back to
11 the Commission with just exactly are we doing to try to find
12 out if there are problems out there that perhaps have not been
13 reported to us. Can't we establish a better system of at least
14 requiring from our licensees some kind of notification if they
15 are having problems and if they perceive problems as far as
16 radiation, contamination and disposal is concerned with.

17 If you will get back to us with that, I think it
18 would help.

19 MR. STELLO: We will.

20 MR. THOMPSON: The other one, which is really an
21 accounting aspect, we are requesting shortly a rulemaking
22 effort to start on that activity that will give us the
23 capability to know who has the types of devices, where they are
24 and that they are being alert to those, so that they just don't
25 become abandoned which I think is the other key element that we

1 are looking at that led to many of these other major problems
2 sometimes.

3 CHAIRMAN ZECH: Address that too, please.

4 MR. CUNNINGHAM: The important part of that, we know
5 at least a number of these people are supposed to have these.
6 If they don't have them, that gets back to the point.

7 CHAIRMAN ZECH: That's right.

8 COMMISSIONER ROGERS: I want to make the point that
9 you want to head off abandonment, but what about those that
10 have already been abandoned that we haven't heard about?
11 That's the one that we ought to be able to get a grip on.

12 MR. STELLO: We are pursuing -- that one we are also
13 pursuing. You recall -- the Commission, I believe, has agreed
14 and authorized us to use some contract people to go out and try
15 to locate those so we don't have to use our own investigative
16 resources to do it. We are pursuing that.

17 COMMISSIONER ROGERS: You are?

18 MR. STELLO: Yes.

19 CHAIRMAN ZECH: Anything else?

20 COMMISSIONER ROGERS: No.

21 CHAIRMAN ZECH: As I recall in March, Region 4 made a
22 proposal for a pilot program or trial program for improvements
23 in material licensing and inspection. Do you recall that
24 Region 4 proposal, and what is the status of that?

25 MR. CUNNINGHAM: My recollection is that they are

1 implementing most of it. We did have one question about how
2 they were going to use people that visit sites who were not
3 qualified inspectors. We had some question on that.

4 There is a concern about sending somebody out to a
5 site who isn't qualified representing NRC, and supposed to be
6 able to recognize a problem that might not recognize a problem.
7 That is getting sorted out. Other than that, as far as I know
8 the last time I looked, they were in the process of
9 implementing these.

10 They had some very good ideas. It is a start in the
11 direction of getting close contact with licensees and will keep
12 us on top of a lot of these problems that we have been
13 discussing today.

14 CHAIRMAN ZECH: You are following that Region 4
15 program then, are you?

16 MR. CUNNINGHAM: Yes, sir.

17 CHAIRMAN ZECH: All right. What is the status of the
18 rulemaking that I believe -- I have heard about that was to
19 require commercial waste disposal operators to report to NRC
20 information in a computer format on waste shipments that they
21 received? It seems to me if that is some form of rulemaking
22 status, that it might be helpful to try to get a handle on this
23 whole situation.

24 MR. BERNERO: We are not quite right to come to you
25 with that now. For the other Commissioner's, we are talking

1 about a rulemaking which is under development right now,
2 whereby the invoices for waste shipments to waste burial
3 grounds would be coded in a similar way, automated, and we
4 would have a real time or shortly after real time report of
5 everything that goes by isotope, by curie in some sufficient
6 accuracy.

7 MR. THOMPSON: Into the low level waste deposits.

8 MR. STELLO: Yes, into burial grounds. We are not
9 trying to do an arithmetic material balance on the U.S.
10 society. We are trying to get some coherent idea of what the
11 isotope composition and quantity is in a given burial ground,
12 what the sources of those isotopes or different waste forms
13 are.

14 The staff developed that rule. It went through our
15 office level of review and got some rather vigorous comments.
16 It was back to the drawing board. They have redrafted that and
17 are now working a final version that we should be able to get
18 it to the EDO in a matter of not too many weeks from now and
19 will get over to you with that.

20 Basically, I don't want to oversell that, you know.
21 It is not a total material accounting of all radio isotopes,
22 but it is taking the waste to generation and disposal end of
23 it. It would give us, for instance, a good way to know where
24 J.C. Haynes sent his stuff.

25 CHAIRMAN ZECH: At least it's a partial solution to

1 trying to find out --

2 MR. STELLO: It's a start.

3 MR. CUNNINGHAM: It's part of the solution.

4 MR. THOMPSON: It's part of the solution.

5 CHAIRMAN ZECH: Right. While you are here, could you
6 give us a very brief status report of the static eliminator
7 device situation?

8 MR. BERNERO: They are supposed to give the show
9 cause in 13 days. The static eliminator thing, you remember,
10 we had so many thousands of devices there. In effect, the
11 license was suspended by the nature of the orders that were
12 issued. No more distribution unless with very specific
13 constraints on it and so forth.

14 The 3M Company asked for and was granted, a couple of
15 month extension to finish their studies; why did this thing
16 fail and where do you intend to go from here. We still don't
17 know for sure what they intend to do. The deadline is 13 days
18 from today. They will submit their response to the show cause
19 order. It will show cause why we shouldn't cancel this whole
20 thing and stop this, suspend and cancel the license. They will
21 answer.

22 Meanwhile, we have gathered by now, I think all of
23 the FDA jurisdiction devices --

24 MR. THOMPSON: I think it may be one licensee.

25 MR. STELLO: One licensee that was still being

1 tracked.

2 CHAIRMAN ZECH: All the others have been accounted
3 for?

4 MR. CUNNINGHAM: All but one.

5 MR. BERNERO: That is in the FDA jurisdiction.

6 CHAIRMAN ZECH: Yes.

7 MR. BERNERO: The non-FDA jurisdiction, I don't have
8 any chart visible.

9 MR. THOMPSON: I think it's like in the 80 or 84
10 percent, as I remember, have been returned. I did grant an
11 extension, provided they went through a certain procedure to
12 survey their facility on some of the non-critical industries,
13 to allow those people to continue to the life of their lease or
14 another 60 days.

15 MR. STELLO: Mr. Chairman, we are, essentially, up at
16 the point where most of the static eliminators that are leased,
17 the period of the lease is, essentially running out as well.
18 All of those are very close to getting back from all of the
19 users to the manufacturer.

20 CHAIRMAN ZECH: We are not granting an extension of
21 that license.

22 MR. THOMPSON: Not any addition. The one thing,
23 obviously, they were looking -- part of the reason for granting
24 extension is the manufacturer of the other static eliminator
25 device was obviously, his orders were fairly substantial and he

1 had a peak in a timeframe for him to deliver that device. That
2 was the reason for the additional period in there -- one of the
3 other reasons.

4 MR. BERNERO: Remember, we authorized in our initial
5 orders, only for workplace safety, could you continue to use
6 it. If you had economic problems and you just couldn't run
7 your printing press without it, you would have to get the other
8 fellow's device and put it in to replace this. That is where
9 they had this bottleneck, the supply bottleneck.

10 MR. THOMPSON: We did one other thing, by the way.
11 We did a joint Region 3 -- NMSS went and inspected the other
12 3M activities up there recently. They did find some problems.
13 We didn't find any significant issues along the lines of other
14 devices with major failures, such as the ones that we found in
15 the static eliminator.

16 CHAIRMAN ZECH: Thank you very much. Any other
17 questions from my fellow Commissioner's?

18 [No response.]

19 CHAIRMAN ZECH: Let me thank you very much for a very
20 important briefing. I must say the materials licensing field
21 is one that I know we are devoting more resources to and more
22 attention to, but it certainly merits that in my judgment.

23 Our mission is public health and safety. I presume
24 that when you find any issue, even though in these areas that
25 are in low radiation levels or minor contamination, you will

1 look very carefully at it to see if public health and safety
2 could be involved. If you do find public health and safety
3 issues that we are focusing on, with high priority.

4 There is an awful lot of licensees out there. It
5 seems to me in the past, perhaps, we have not given as much
6 scrutiny to some of these licensees as perhaps we should have.
7 I hope that we will learn that lesson for the future and we do
8 two things. One, we are very mindful of the many licensees out
9 there right now and we do everything that we can to improve
10 accountability as well as their accounting procedures, as well
11 as focusing on public health and safety so that if we do find
12 any problems in that area we jump right on them;

13 Second, of course, we learned the lessons from some
14 of these incidents that have taken place and apply them to the
15 rulemaking process, to our procedures and our policies as well
16 as anything that we do plan for the future. This is a very
17 important field, whereas we focus on power plants a great deal
18 of the time here. It is very clear, I think to the Commission,
19 that this area merits a great deal of our attention.

20 So, Mr. Stello, you and Mr. Thompson, Mr. Cunningham
21 and Mr. Benero and others, if you feel that you need more
22 support from the Commission in this area I hope that you will
23 come to us in a timely manner so that we can give you the
24 support necessary. If you feel that there are public health
25 and safety issues here that should be brought to the

1 Commission's attention and should merit more resources or more
2 support than you have, please bring that to the Commission
3 because I think this is an area that we really need to focus
4 on.

5 I hope we can get an update of this briefing in the
6 not too distant future, because this is something I think the
7 Commission needs to focus on, perhaps more than we have in the
8 past. I think we all have a little feeling that it is not so
9 much the problems that we know about but it is, perhaps, those
10 problems that you have alluded to that pop up from time to time
11 that we haven't been aware of. Hopefully, they are not in the
12 area of significant public health and safety issues.

13 We just charge the staff to be especially alert for
14 that area to make sure that we are, indeed, properly carrying
15 out our mission as far as public health and safety is
16 concerned.

17 With that, thank you very much. We stand adjourned.

18 [Whereupon, at 3:15 p.m., the Commission meeting was
19 concluded.]

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CERTIFICATE OF TRANSCRIBER

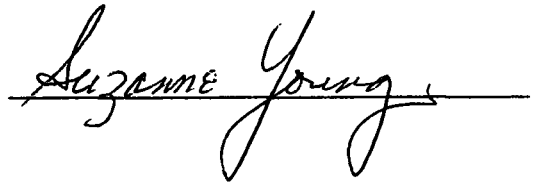
This is to certify that the attached events
of a meeting of the U.S. Nuclear Regulatory Commission
entitled:

TITLE OF MEETING: BRIEFING ON ACCOUNTABILITY OF RADIOACTIVE
MATERIAL USED BY MATERIAL LICENSEES

PLACE OF MEETING: Washington, D.C.

DATE OF MEETING: Tuesday, July 5, 1988

were transcribed by me. I further certify that said
transcription is accurate and complete, to the best
of my ability, and that the transcript is a true and
accurate record of the foregoing events.

A handwritten signature in cursive script, reading "Suzanne Young", is written over a horizontal line.

Ann Riley & Associates, Ltd.

COMMISSION BRIEFING
ON
ACCOUNTABILITY OF RADIOACTIVE MATERIAL
USED BY MATERIAL LICENSEES

JULY 5, 1988

PURPOSE

- O DESCRIBE SCOPE AND MAGNITUDE OF BYPRODUCT LICENSES
- O PRESENT EXAMPLES OF BENEFITS AND PROBLEMS
- O DESCRIBE PAST AND CURRENT STAFF ACTIVITIES
- O DIRECTION FOR THE FUTURE

BACKGROUND

- o NRC 8,000 SPECIFIC LICENSEES
- o AGREEMENT STATES-16,000 SPECIFIC LICENSES
- o SEALED SOURCES AND UNSEALED SOURCES
- o AT LEAST 2,000,000 TRANSFERS PER YEAR

EXAMPLES OF BENEFITS OF BYPRODUCT MATERIAL

- O NUCLEAR MEDICINE - SINGLE PROCEDURE:
DIAGNOSIS OF PULMONARY EMBOLISMS:
ABOUT 200 LIVES SAVED PER WEEK
- O SMOKE DETECTORS - ESTIMATE THOUSANDS OF
LIVES SAVED AND REDUCED PROPERTY
DAMAGE
- O INDUSTRIAL RADIOGRAPHY - QA: BRIDGES,
AIRCRAFT, HAZARDOUS MATERIAL PIPELINES
- O WELL LOGGING - EXPLORATION OF NATURAL
RESOURCES

JUL - 5 1988

RISKS WITH BYPRODUCT

- O RISKS ARE GENERALLY LOW CONSEQUENCE TO
GENERAL PUBLIC BUT POTENTIALLY HIGH
TO AFFECTED INDIVIDUALS
- O RISKS ASSOCIATED WITH BOTH OPERATIONS
AND ACCOUNTABILITY
- O INTERNATIONAL EXPERIENCE - DEMONSTRATES
POTENTIAL FOR SERIOUS INJURY OR
DEATH
- O U.S. EXPERIENCE - RELATIVELY FREQUENT
INCIDENTS OF LOW HEALTH CONSEQUENCE;
SOME INVOLVE DIFFICULT AND HIGH
CLEANUP COSTS

JUL - 5 1983

ACTIVE NRC LICENSES WITH POSSESSION
LIMIT OF 10 CURIES OR MORE

<u>RADIONUCLIDE</u>	<u>NUMBER OF LICENSES</u>
COBALT-60	575
STRONTIUM-90	14
CESIUM-137	289
IRIDIUM-192	258
AMERICIUM-241	61

ESSENTIALLY ALL OF THE BYPRODUCT MATERIAL
IS IN THE FORM OF SEALED SOURCES

BYPRODUCT DEVICES UNDER GENERAL LICENSE

- O MAIN ACCOUNTABILITY PROBLEM IS WITH
GENERAL LICENSEES; BUT RISKS ARE
DOMINATED BY SPECIFIC LICENSEES
- O OVER 300,000 DEVICES GENERALLY LICENSED
- O QUARTERLY REPORTS OF TRANSFERS SENT TO
NRC
- O LITTLE NRC EFFORT ON ROUTINE INSPECTION
OF GENERAL LICENSEES

JUL 5 1989

CURRENT "ACCOUNTING" REQUIREMENTS

- O NUMBER HAS INCREASED OVER THE YEARS
TO MEET SPECIFIC NEEDS
- O GENERALLY RELATED TO HAZARD
- O SCATTERED THROUGHOUT REGULATIONS
(E.G., PARTS 20, 30, AND 40)
- O AGREEMENT STATES REQUIREMENTS ARE
GENERALLY COMPATIBLE WITH NRC
- O LESS STRINGENT THAN SAFEGUARDS FOR SNM

AGREEMENT STATES ACCOUNTABILITY MEASURES

- O AGREEMENT STATES RECOGNIZE THAT
ACCOUNTABILITY PROBLEMS EXIST,
PARTICULARLY FOR GENERALLY LICENSED
MATERIALS
- O MOST AGREEMENT STATES INSPECTION SCHEDULES
ARE MORE FREQUENT FOR SOME CATEGORIES,
E.G., GENERAL LICENSEES
- O SOME AGREEMENT STATES REQUIRE REGISTRATION
OF GENERAL LICENSEES AND FEES

EXAMPLES OF PROBLEMS

- O Co-60 CONTAMINATION - NEW YORK - 1983
- O TELETHERAPY DEVICE - MEXICO/U.S. - 1984
- O RADIOGRAPHY SOURCE - MOROCCO - 1984
- O CESIUM-137 CONTAMINATION - CALIFORNIA - 1985
- O ABANDONED GAUGE - MISSOURI - 1986
- O AMERICIUM-241 CONTAMINATION - OHIO - 1987
- O TELETHERAPY DEVICE - BRAZIL - 1987

STAFF ACTIONS

I. COMMUNICATION/COOPERATION

- O INCREASED COMMUNICATION WITH APPLICANTS
- O INCREASED SITE VISITS PRIOR TO
LICENSING
- O NMSS NEWSLETTER
- O WARNING POSTER AND INFORMATION BOOKLET
- O INFORMATION NOTICES ON INCIDENTS
- O VIGOROUS ENFORCEMENT
- O PUBLICATION IN PROFESSIONAL JOURNALS
- O FEDERAL AGENCIES: E.G., FDA; DOT:CUSTOMS
- O INTERNATIONAL SUPPORT

JUL - 5 1999

STAFF ACTIONS

II. FOLLOW-UP ON BRAZIL INCIDENT

- O INFORMATION NOTICE ON BETTER ACCOUNTABILITY
OF TELETHERAPY, RADIOGRAPHY, AND OTHER
LARGE SOURCES AND DISCOURAGING LONG TERM
STORAGE OF SOURCES NOT IN USE
- O MUST TAKE INTO ACCOUNT DIFFICULTIES
IN MANAGING "ABOVE CLASS C" WASTE
- O IAEA FOLLOW-UP REPORT IN PREPARATION

JUL - 5 1963

STAFF ACTIONS

III. IMPROVEMENT OF GENERAL LICENSE PROGRAM

- O GENERAL LICENSE PROGRAM IN EXISTENCE
FOR ABOUT 3 DECADES
- O CONDUCTED REVIEW OF ACCOUNTABILITY
- O STAFF DEVELOPING PROPOSAL FOR RULE CHANGE
ON ACCOUNTING FOR GENERALLY LICENSED
MATERIALS
- O STAFF DEVELOPING FURTHER GENERAL LICENSE
ACTIONS

JUL - 5 1988

SUMMARY AND FUTURE DIRECTION

- O USE OF BYPRODUCT MATERIAL PROVIDES
A SIGNIFICANT BENEFIT TO PUBLIC
- O REGULATORY IMPROVEMENTS NEEDED AND
ARE BEING PURSUED, E.G.,
MISADMINISTRATION RULES, RADIO-
GRAPHY UPGRADE, FINANCIAL
ASSURANCE
- O GOAL: REDUCE FREQUENCY OF
INCIDENTS WITH EMPHASIS ON
SERIOUS OR WIDESCALE INCIDENTS

(CONTINUED)

- O PURSUE MAJOR INITIATIVES ON
GENERAL LICENSE IMPROVEMENTS AND
MAIL SURVEYS
- O CONTINUE TO SUPPORT IAEA PROGRAM FOR
MATERIAL SAFETY

JUL 5 1983