

1 UNITED STATES OF AMERICA
 2 NUCLEAR REGULATORY COMMISSION
 3 ***
 4 BRIEFING ON MATERIAL CONTROL OF
 5 GENERALLY LICENSED DEVICES
 6 ***
 7 PUBLIC MEETING
 8 ***

9
 10 Nuclear Regulatory Commission
 11 Commission Hearing Room
 12 11555 Rockville Pike
 13 Rockville, Maryland
 14
 15 Wednesday, January 21, 1998

16
 17 The Commission met in open session, pursuant to
 18 notice, at 2:05 P.m., the Honorable SHIRLEY A. JACKSON,
 19 Chairman of the Commission, presiding.

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 21 COMMISSIONERS PRESENT:
 22 SHIRLEY A. JACKSON, Chairman of the Commission
 23 GRETA J. DICUS, Member of the Commission
 24 NILS J. DIAZ, Member of the Commission
 25 EDWARD McGAFFIGAN, JR., Member of the Commission

- 1 STAFF AND PRESENTERS SEATED AT COMMISSION TABLE:
 2 ANDREW G. SHARLEY, III, AISI
 3 JAMES F. COLLINS, SMA
 4 JILL LIPOTI, CRCPD
 5 ROLAND FLETCHER, OAS
 6 CARL PAPERIELLO, DIRECTOR, NMSS
 7 DONALD COOL, DIRECTOR, DIMNS
 8 JOHN LUBINSKY, CO-CHAIR, NMSS
 9 FRANK CONGEL, AEOD

1 P R O C E E D I N G S
 2 [2:05 p.m.]

3 CHAIRMAN JACKSON: Good afternoon. The Commission
 4 has requested that this briefing be provided to assist the
 5 Commission in its review of the staff's proposal for
 6 improving NRC's control over and licensees' accountability
 7 for generally licensed and specifically licensed devices.

8 To provide for additional points of view on this
 9 issue, the Commission, in addition to our own staff, has
 10 also requested that representatives be invited of the steel

11 and metal manufacturing and recycling industry, and present
12 today are Andrew Sharkey, president and CEO of the American
13 Iron and Steel Institute; James F. Collins, president of the
14 Steel Manufacturers Association; and Michael Mattia,
15 director of risk management for the Institute of Scrap
16 Recycling Industries, Inc.

17 In addition, in the role of fellow regulators who
18 must deal with this issue, the Commission has requested
19 input from Chairman Jill Lipoti of the Conference of
20 Radiation Control Program Directors, and Chair-Elect Roland
21 Fletcher of the Organization of Agreement States.

22 So welcome to all of you, and I thank all of you
23 for taking the time to address the Commission today.

24 So unless my fellow Commissioners have any opening
25 comments they would like to share, I always assume the one

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1 sitting in the center would like to make the opening
2 remarks, and therefore Mr. Sharkey, would you please begin
3 and then we'll go down.

4 MR. SHARKEY: Good afternoon and thank you for
5 this opportunity to appear before you today.

6 My name is Andrew G. Sharkey III. I'm the
7 president and CEO of the American Iron and Steel Institute,
8 a non-profit trade association whose 49 member companies
9 account for approximately 70 percent of the raw steel
10 production in the United States.

11 I'm here today to present AISI's view on the NRC
12 staff's recommendation for improving the Commission's
13 control over and licensee's accountability for radioactive
14 devices, and I might add I'm here also to send a very strong
15 message that this is not a problem for just one segment of
16 the steel-producing industry, it impacts all steel
17 producers.

18 This is an important issue for AISI because its
19 member companies operate basic oxygen furnaces and electric
20 arc furnaces in which scrap metal is melted. When NRC
21 control over and licensee accountability for radioactive
22 devices are inadequate, as they have been in the past, too
23 many of these devices wind up in the recyclable scrap
24 stream. They can then make their way to steel mills and
25 other metal smelting and recovery operations where, if not

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1 detected, then may be placed in the furnaces and melted.

2 Through a combination of prudent actions and good
3 fortune, large integrated steel mills have avoided a
4 radioactive melt thus far, but they clearly remain at risk.

5 Others have been less fortunate. From 1983
6 through June of 1996, there were 40 confirmed meltings of
7 radioactive sources, 25 of these occurring in the United
8 States. During that same period, there were almost 1900
9 discoveries of radioactivity and scrap metal.

10 I might add, spending the better part of the day
11 yesterday with one of our companies that's a member of both
12 our organizations, they showed me documentation of eleven
13 alarms between March 4th and December 20th of last year.
14 Two involved drivers who had recently undergone medical
15 tests. Three were determined to be NORM, and six were
16 determined to be contaminated material, principally oil and
17 gas pipe.

18 So the problem clearly is both real and serious
19 and it needs to be addressed effectively and expeditiously.

20 The consequences of such an incident can be very
21 severe. At many mills, the cost of decontamination disposal
22 and shutdown losses have reached \$23 million in a single

23 incident, with the average cost falling in the range of \$8
24 million to \$10 million.

25 The cost of dealing with a radioactive melt at a
6
1 large integrated steel mill is estimated to run as high as
2 \$100 million or more because of the scope of the facilities.
3 These estimates do not include the consequences of exposures
4 that potentially may occur whenever devices are lost,
5 abandoned or otherwise enter the public domain.

6 In its report of July 2nd, 1996, the NRC Agreement
7 State Working Group outlined what we believe is the proper
8 course of action to deal with this important issue. The
9 working group recommendations called for enhanced regulatory
10 oversight of general and specific licensees possessing
11 devices exceeding designated activity thresholds; increased
12 responsibilities and obligations for licensees and device
13 vendors; significant penalties for lost devices; and a
14 program for handling and disposing of orphaned devices.

15 In its present recommendation, the NRC staff
16 claims to agree with the working group's analysis of the
17 problem and for the most part with its proposed solution.
18 Toward that end, the staff proposes to develop and implement
19 a registration program for general licensees of devices
20 containing at least ten millicurie of Cesium-137.

21 While we applaud the staff's determination to
22 proceed down this path, we do have several concerns about
23 its proposal.

24 First, we think the registration program should
25 not be limited to general licensees of devices containing

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1 Cesium-137. Coverage under the program should depend on the
2 activity level of the device, not on the licensee's status.

3 All licensees of devices that exceed the
4 designated thresholds should be included in the program as
5 well. Moreover, the program should not be limited to
6 devices containing Cesium-137. Those devices are important
7 and they should be covered, but other isotopes, particularly
8 Cobalt-60, have been involved in melting incidents as well
9 and have entered the public domain.

10 The working group went through a very deliberate
11 exercise of identifying the particular isotopes and
12 associated activity levels that warrant increased regulatory
13 oversight and accountability. While the staff agrees with
14 the working group's assessment, it proposes a much more
15 limited program due to resource constraints.

16 Given the severe consequences of a loss of
17 accountability, we support the working group's
18 recommendation regarding the scope of the coverage, and we
19 believe it should be possible to secure the necessary
20 resources.

21 For example, if the registration program is funded
22 through fees imposed on licensees, as the staff recommends,
23 the expanded coverage will result in additional funds -- in
24 additional fees to fund the program.

25 As licensees, AISI member companies would not

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1 object to paying reasonable fees -- for example, five to ten
2 dollars per source, not to exceed \$500 per license -- if
3 they are used for this purpose, and we are also willing to
4 ask members of Congress to provide the NRC with additional
5 funds needed to accomplish this important goal.

6 Second, we are concerned about how the program
7 proposed by the staff will be structured. The core

8 requirement would be annual registration by covered
9 licensees. Under one regulatory option, there would be
10 follow-up by the Commission in cases where the licensee
11 fails to register or cannot account for the device. Under
12 another option, there would be no such follow-up.

13 The possibility that the Commission might adopt
14 this second option is troubling. While it is useful to
15 identify devices that cannot be accounted for, that alone is
16 not sufficient. The Commission also must attempt to find
17 out why the devices cannot be accounted for to determine
18 their fate.

19 As the working group emphasized, an active role by
20 the Commission in comparing annual inventories and transfer
21 reports and resolving any discrepancies is a critical
22 component of an effective oversight and accountability
23 program.

24 While an active follow-up role will add to the
25 cost of the program, we believe these costs can be funded

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1 through additional fees or penalties levied on those
2 licensees whose shortcomings make the follow-up action
3 necessary. This approach would be consistent with current
4 NRC practice.

5 Third, various aspects of the program recommended
6 by the working group, including responsibilities of
7 licensees and device vendors, are not explicitly addressed
8 in the staff's recommendation. This does not necessarily
9 mean that the staff has rejected these aspects of the
10 working group recommendation. The staff may simply view
11 these as details to be developed as part of the rulemaking
12 proposal.

13 We hope this is the case because these elements of
14 the working group recommendation, such as obligations of
15 vendors to report transfers of devices, to provide proper
16 disposal information to customers, and to ensure that the
17 device is being transferred, carry a clearly visible and
18 durable identification and warning label, are an important
19 complement to a registration system.

20 Fourth, we are concerned about scheduling. Under
21 its plan, the staff would forward a proposed rulemaking
22 package to the Commission in October 1998 and a final rule
23 in October 1999. That means the final rule would not be
24 promulgated until the year 2000 and the registration program
25 would not take effect until the year 2001 at the earliest.

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1 Given the importance of the problem and the
2 working group's estimate that an average of 1.5 radioactive
3 melts occur each year, we believe the staff should
4 accelerate the rulemaking.

5 Since most of the spade work has already been done
6 by the working group, it should be possible to publish a
7 proposed rule this summer and to issue a final rule in the
8 summer of 1999 so that the implementation of the
9 registration program could begin by January 1 of the year
10 2000.

11 Finally, we are concerned about what appears to be
12 a lack of sufficient urgency in the staff's approach to
13 dealing with the problem of orphaned devices. While the
14 universe of orphaned devices will shrink progressively once
15 a registration system is implemented, such devices are a
16 significant concern today and will remain so for the
17 immediate future.

18 Under the current system, a person who finds
19 himself in possession of an orphaned device is an innocent

20 victim of inadequate oversight who may nevertheless be
21 saddled with very substantial costs for handling and
22 disposing of radioactive material.
23 This really creates a disincentive for non-
24 licensees to screen for radioactive devices and an incentive
25 for them to simply pass the device on to others without

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1 notification when they are found.

2 From the standpoint of accountability and public
3 health, this is a perverse incentive structure. It should
4 be reversed as soon as possible.

5 Non-licensees must be encouraged to look for
6 orphaned devices in the materials they handle and to take
7 appropriate action when such devices are found in their
8 possession. This means that the responsibility, including
9 the financial responsibility, for handling and disposing of
10 orphaned devices must be delineated clearly among DOE, EPA,
11 the Commission, and state radiation control authorities.

12 Agency funding for the disposal of orphaned
13 devices must be made available, through new legislation if
14 necessary, and non-licensees who are likely to come into
15 possession of orphaned devices must be given guidance on the
16 risks involved, the means to identify lost devices, and what
17 to do when such devices are found.

18 We believe the Commission should move forward on
19 each of these fronts promptly and, to the extent feasible,
20 concurrently.

21 In closing, let me return to where I began. Lost,
22 abandoned or intentionally discarded radioactive devices
23 represent a serious problem for steel-makers, metal
24 recyclers, potentially exposed workers, and members of the
25 general population. It is a problem that the Commission can

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1 and should address promptly and effectively.

2 The staff's recommendation is a good starting
3 point, but it does not go far enough or fast enough. We
4 believe the NRC has an opportunity to take critical steps to
5 prevent a serious over-exposure incident involving American
6 workers and the local community. We hope the Commission
7 will recognize the urgency of the problem and act
8 accordingly.

9 Thank you very much.

10 CHAIRMAN JACKSON: Thank you very much.

11 Let me just ask you a question. Do you believe
12 that it's important in whatever choice the Commission makes
13 that there be the opportunity for enforcement and imposition
14 of civil penalties?

15 MR. SHARKEY: Yes.

16 CHAIRMAN JACKSON: Okay. Thank you.

17 Mr. Collins.

18 Oh, you had a question? I'm sorry.

19 COMMISSIONER McGAFFIGAN: The Tuscaloosa
20 experience that you describe, it sounds like almost all of
21 it was NORM because the six examples of piping from the oil
22 and gas industry, it sounds like it's probably the
23 accumulation of NORM material, it's not a device that was
24 lost in the piping. So in that particular case, it sounds
25 -- you know, we do a good job of passing the buck around

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1 here, but it sounds like it's Ms. Lipoti's counterpart in
2 Alabama that probably has, you know, most of the problem.

3 Is that a correct reading of that?

4 MR. SHARKEY: I can't comment on those particular

5 incidents. You may, in fact, be correct. I'm sure Mr.
6 Collins will cite other examples that will perhaps be more
7 compelling.

8 COMMISSIONER MCGAFFIGAN: No, I fully understand
9 that it's an integrated problem with NORM and the things we
10 control, and that's why Ms. Lipoti is at the table.

11 MR. SHARKEY: Right.

12 COMMISSIONER MCGAFFIGAN: But I'm trying to bound
13 it.

14 The other issue, and this may not be fair, maybe
15 to Mr. Mattia, when you get one of these devices in a mill,
16 if it's 9.9 millicuries and it gets melted, is it not a
17 problem, or -- I mean, the 10 millicuries is what the
18 working group recommended, and I'm not trying to enlarge a
19 problem that's already thus far more than we can handle, but
20 what was the rationale in the working group report for 10
21 millicuries, and is a steel mill at risk if it's less than
22 10?

23 MR. MATTIA: Jim, do you want to comment on that?

24 MR. COLLINS: First of all, the steel companies
25 have set their devices at such a low level of tolerance in

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1 order to discover sources of radiation that -- let me
2 describe this. One truck driver had a physical, took a
3 barium inhalation, and it rang the detector. They couldn't
4 find any scrap on the truck.

5 So the answer is, whether it's NORM or whether
6 it's the device, the radiation detector will ring, it will
7 stop the ingress of scrap either on a truck or on a railcar,
8 and that whole load has to be inspected to determine what
9 set it off.

10 So every -- most mills have zero tolerance for
11 radiation coming into their mills, and whether it's NORM or
12 whether it's the device, they still have to inspect, and
13 often when they inspect they find it's NORM, and often when
14 they inspect they find the device.

15 COMMISSIONER MCGAFFIGAN: But that raises the
16 issue, if we did a perfect job of taking the staff's -- the
17 working group's recommendation and get all of the devices,
18 general and specific, 10 millicuries and above and had them
19 all accounted for, and the states did something similar,
20 although I'm not exactly sure what that would be for NARM
21 and NORM, would you all -- you all would still have to spend
22 money, assuming perfection, you would still have to spend
23 money for the categories of devices that are lower that
24 still may be a problem for you; is that correct?

25 MR. COLLINS: Well, if the Cesium-137 device

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1 volatilizes and goes up into a baghouse in the form of vapor
2 that is captured by the dust, that dust, if it's above two
3 picocuries per gram, cannot be disposed of by the steel
4 company.

5 COMMISSIONER MCGAFFIGAN: That's right.

6 MR. COLLINS: And the cost of disposing of the
7 dust can be upwards of two to three thousand dollars per
8 ton, and there are thousands of tons of this dust in
9 railcars behind steel mills across the country who have
10 melted either sources or certain kinds of background
11 radiation that has caused the dust to be come higher than
12 two picocuries per gram.

13 So most steel mills, whether it's NORM or whether
14 it's --

15 COMMISSIONER DICUS: Is that the 10 millicurie
16 cutoff, then, below that? And maybe Dr. Lipoti can address

17 this, but I think, if I recall, somewhere in this
18 neighborhood, there is a cutoff where it's unlikely that if
19 a source were melted, there's going to be exposure impact on
20 the workers together with the concentration of the baghouse
21 dust.

22 DR. LIPOTI: The working group in an appendix had
23 looked at a whole range of various sources, and in fact,
24 they did not mention a specific cutoff for -- when they
25 mentioned cutoff for the registration program, they said

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1 Cesium-137 at greater than 10 millicuries, Cobalt-60 greater
2 than one millicurie, Strontium-90 greater than .1
3 millicurie. So it really depends on the source and the
4 radioactivity involved.

5 They did a ranking based on what they felt would
6 be the sources of concern, but the risk assessment which the
7 staff has agreed to undertake would do a better sort of all
8 of the sources which might be involved, and that was one of
9 the working group recommendations as well as the staff
10 recommendations that you do a risk re-ranking, and certainly
11 something that I support and I'm sure that the steel
12 manufacturers would be grateful to have better guidance --

13 MR. SHARKEY: Yes.

14 DR. LIPOTI: -- on exactly that point that you
15 bring up.

16 CHAIRMAN JACKSON: So are you saying in the end
17 that the issue is not to focus in on the specific threshold
18 of ten millicuries --

19 DR. LIPOTI: That's correct.

20 CHAIRMAN JACKSON: -- but to wait and have a more
21 informed way of making the judgment based on a risk
22 assessment.

23 DR. LIPOTI: I'm not saying wait. The wait word
24 was not mine. I'm saying start with what the working group
25 recommended, which was several sources at varying ranges,

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1 and then proceed with the risk ranking for the additional
2 sources that you would want to include and be more informed
3 about your next step. But the first step -- I thought it
4 was pretty clear we should take that first step.

5 CHAIRMAN JACKSON: Okay. I think that for
6 orderliness of process, because there are at least five
7 presenters before we even get to the staff, I think it's
8 important to just -- let's just walk through and have each
9 person make -- and we don't mind if you make an abbreviated
10 statement that kind of hits the high points, and then we can
11 have a more robust discussion.

12 MR. COLLINS: I'm James Collins of the Steel
13 Manufacturers Association. We have 59 steel companies in
14 our membership with 48 in U.S., seven in Canada, and four in
15 Mexico. We accounted for 43 percent of U.S. steel capacity
16 in 1997. We're the primary trade group of the electric
17 furnace steel producers, who are the largest recyclers in
18 North America, probably the largest recyclers in the world.
19 We recycled 42 million tons of various scrap last year, and
20 by weight, I don't think anybody else gets up that high.

21 Unfortunately, this scrap contains radioactive
22 sources and other sources of radioactivity. Sources are
23 regulated by the NRC and typically come from spent or lost
24 gauges used in manufacturing facilities and hospitals,
25 military facilities that have been downsized, et cetera, and

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1 they represent a problem for steel companies, a major

2 economic problem for steel companies, for the environment,
3 the health and safety of steelworkers and the general
4 public.

5 We're obviously unhappy about the lack of progress
6 in doing something about these loss sources in the scrap
7 supply.

8 Two examples we used in our statement are the one
9 down in Texas where a Cobalt-60 source got lose. It was in
10 a camera weighing approximately 1600 pounds, containing a 35
11 and a half curie source of Cobalt-60, and in a second camera
12 weighing 600 pounds containing an 8.6 curie source of
13 Cobalt-60.

14 The net result, after these sources were bounced
15 around amongst some scrap dealers, one finally having found
16 through radiation detection that this particular source was
17 radioactive, was that the source was sent back to another
18 dealer and in the process, the capsule containing the cobalt
19 fell out from under a truck and resulted in the exposure of
20 twelve adults and two children with pretty severe doses of
21 radiation. The truck driver suffered severe radiation
22 blistering from handling the source, and five police
23 officers also received low doses of radiation.

24 The next example is an SMA member company in
25 Kentucky melting two Cesium-137 sources. The steel company

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1 sustained a \$10 million loss. Today it has on site twelve
2 railcars full of low level contaminated baghouse dust
3 resulting from the incident. It has an additional one
4 million pounds of dust in storage containers, 10,000 cubic
5 feet of protective equipment that was used during the clean-
6 up, and 15,000 cubic feet of contaminated gravel and soil.
7 All this eventually has to be disposed of, and the costs are
8 going to be horrendous.

9 There have been 26 known incidents, as Andy
10 Sharkey has just indicated. We have listed the companies in
11 our membership where those incidents have occurred.

12 The NRC staff we believe incorrectly portrays the
13 radioactive source problem as only an economic problem for
14 steel companies. We believe that there are health and
15 safety factors here that warrant the attention of the
16 Commission as well as the economic. We don't mean to
17 minimize the economic impact, but that there are dual
18 factors involved here, both health and safety of our
19 workers, the general public, and certainly the economic
20 impact is a major one.

21 We believe that -- we don't have an exact number,
22 but we believe between 100 and 150 million dollars of cost
23 has already been incurred in steel companies, and that does
24 not include the disposal costs of all those railcars full of
25 dust behind these steel plants that have to be taken care of

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1 eventually, so you're probably look at at least \$300 million
2 of cost over a ten-year period of time.

3 The U.S. Congress enacted the AEC Act establishing
4 the Atomic Energy Agency, now the NRC, to protect the health
5 and safety of the public. We believe that the risk of lost
6 radioactive sources in U.S. scrap supply were unanticipated
7 when the act was passed, but the mounting losses of these
8 source, however, show that the current regime for licensing
9 and maintaining an accurate inventory of generally licensed
10 sources has not been effective.

11 We're sort of dismayed and we're really puzzled
12 and a little angry that the NRC staff, instead of
13 immediately initiating a rulemaking to solve the problem,

14 proposes to do further study and wait until the year 2001,
15 which from the inception of the advisory group, the working
16 group, would be probably six years before something might
17 happen.

18 All our members have installed highly
19 sophisticated radiation detection systems to monitor the
20 incoming scrap, and they believe, and I think honestly so,
21 that they are the innocent victims of insufficient control
22 of radioactive sources in the economy.

23 Radioactive scrap is one of the highest priorities
24 for our member companies. They're doing everything
25 reasonable to keep radiation out of their mills, and they

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1 have had frequent visits with the NRC Commissioners and
2 staff and EPA and members of Congress to try to explain the
3 problem and determine if something could be done as rapidly
4 as possible.

5 We do not believe that a course of action to do
6 additional study given the fact that there is already a
7 wealth of data out that we published, that the states
8 published, that the Conference of Radiation Control Program
9 Directors publishes on incidence, will prove anything other
10 than to be a waste of time, and we think further study is
11 unnecessary and we would like to see some action implemented
12 to impose A) a strong monitoring program to assure
13 accountability for these sources amongst the source holders,
14 and we fail to understand why this is controversial.

15 3M was on the advisory group, was on the working
16 group, and 3M has 1,500 sources within its corporate
17 structure, and 3M said, we'd be glad to engage in a more
18 strict monitoring program for the sources we hold and a
19 reporting program to report the status of those sources to
20 the NRC, and they, as a responsible company, they have taken
21 this position because they recognize that it is not in their
22 long-term interest to lose these sources and have the loss
23 of the sources attributed back to them.

24 On the other side of the equation, if there is
25 either an inadvertent loss of a source or a negligent loss

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1 of a source, we think a \$2,500 fine is meaningless. You
2 could impose a \$25,000 fine on an inadvertent loss and a
3 \$100,000 fine on a negligent loss and possibly capture the
4 attention of the source holders with that kind of a program,
5 but you're not going to do it with a \$2,500 fine.

6 MR. SHARKEY: True.

7 MR. COLLINS: We think the staff proposal to
8 initiate a licensing program to cover only Cesium-137
9 sources over 500 millicuries is inadequate. We picked up
10 sources below 500 millicuries that -- at steel companies
11 through their detection system equipment, and we know that
12 if those sources below 500 millicuries were taken into the
13 furnace, that we would have contaminated electric furnace
14 dust, we would have contaminated furnaces, we would have to
15 stop production to clean up, and you're talking about
16 millions of dollars of losses. So we don't understand the
17 cutoff.

18 We think that something ought to be done about
19 orphaned sources so that kind of a situation that occurred
20 down in Texas does not reoccur where people are footballing
21 source back and forth because they don't want to hold it
22 because they know that disposition of that source is going
23 to cost them money. We think a federal program should be
24 implemented to do that.

1 appreciation to you, Chair Jackson, and to Commissioners
2 Diaz and Dicus and McGaffigan for having this hearing. We
3 think it's important, we think the issues should be
4 addressed and addressed quickly by the Commission.

5 Thank you.

6 CHAIRMAN JACKSON: Thank you.

7 Mr. Mattia.

8 MR. MATTIA: Good afternoon, Madam Chairman,
9 Commissioners. My name is Mike Mattia, I'm the director of
10 risk management for the Institute of Scrap Recycling
11 Industries, and like my fellows at this table, we want to
12 thank you for the opportunity to address you today.

13 I am representing approximately 1,600 companies,
14 most of them small businessmen who are in the business of
15 recycling scrap material. You name it, we recycle it.

16 Primarily the problem here is with the scrap
17 metals, the iron, the steel, the aluminum, the copper, the
18 stainless. These are metals that have value. These are
19 metals that continue to have value, and oftentimes, these
20 metals compose the housing that protect devices, material
21 that contain radioactive contaminated material or
22 radioactive sources.

23 It's because of the value of the material, the
24 metal, that these sources come to scrap recycling
25 facilities. They're not brought their intentionally.

1 Oftentimes the demolition contractor or the peddler has no
2 idea when he's bringing in a load of scrap. Also the scrap
3 recycler doesn't realize that the material that's being
4 brought to his facility contains possibly deadly amounts of
5 radioactive material.

6 When that material gets to a scrap recycling
7 facility, it generally undergoes a very, very rigorous
8 process of cutting, bailing, shearing, shredding to conform
9 the metal so that it can go to the various steel mills for
10 remelting. The problem is that those type of rigorous scrap
11 processing can not only breach a housing, it can
12 disintegrate it, and now you have radioactive material that
13 is out in the clear.

14 This is where the problem starts for the scrap
15 recycler -- unknowingly receiving material, putting it
16 through a tremendously rigorous process. Imagine being able
17 to take an automobile and shred it to fist-size pieces in a
18 matter of seconds. You can imagine what that can do to the
19 housing of a radioactive source.

20 To date, to the best of our knowledge, the
21 consequences on our members of improperly controlled
22 radioactive material has been purely economic, but it's been
23 hefty economic. There's been millions of dollars that have
24 to have been spent to install radiation monitors, to
25 decontaminate land and equipment, and to transport and

1 dispose of contaminated material, contaminated byproducts.

2 How often has this happened? The numbers
3 literally change daily. As of the writing of this report,
4 there were 2,400 detections, and 270 recovered sources and
5 the smelting of 31 sources of radioactivity. It's our
6 knowledge and belief that that number represents a very
7 small fraction of what is actually out there and what our
8 members, the members of my cohorts and the general public
9 are being exposed to every day.

10 Now, as we mentioned, to date, these occurrences

11 have only caused economic hardships. However, the potential
12 for physical harm is tremendous. That there has yet been
13 reported in the U.S. a death or a serious threat to health
14 of either a person working in a scrap recycling facility or
15 a steel mill or in a community that surrounds these
16 facilities can be chalked up to only two things: one, the
17 diligent efforts of the individuals that represent the
18 companies at this table and their companies in monitoring
19 and in sheer luck.

20 Generally, our industries every day play a game of
21 Russian Roulette. We get -- sources are out there, they're
22 coming in, and so far, other than economic, our luck has
23 held up. However, how long do we play such a deadly game
24 before our luck runs out, before we shred or shear a source
25 and cause main contamination in a facility or in an outlying

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1 community or both?

2 The working group that is spoken of issued a very
3 thorough report and we wholly endorse all of the elements in
4 that report. The elements that we particularly are
5 concerned about is the increased regulatory oversight of the
6 various amounts of the stated isotopes, more stringent civil
7 penalties, and a program for handling orphaned devices.

8 The NRC staff has commented on that working
9 group's report, and I would like to just talk about for a
10 brief few moments their report.

11 In terms of the registration program, first there
12 is the concern of the rulemaking process. It's been
13 mentioned here already several times that it's a lengthy
14 rulemaking process. If a rulemaking process is, indeed,
15 necessary, I echo everyone else at the table that the
16 Commissioners do whatever is possible to expedite that
17 rulemaking process so that it indeed goes farther quicker.

18 However, would there need to be a rulemaking to
19 simply ask all licensees that fall within the parameters of
20 the working group a simple question: Do you still have what
21 you're supposed to have?

22 Should the staff not use currently available
23 resources to conduct a mailing that asks that question?
24 Then you would have information that would tell you the true
25 scope of the problem -- what is now under proper control?

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1 And the response from this mailing could then determine what
2 was needed in terms of a registration program to assure that
3 all devices eventually come under proper control.

4 The working group's recommendation was for
5 increased regulatory oversight of the various isotopes at
6 the various limits, and since each of these has found their
7 way into scrap recycling facilities at one point in time or
8 another, we wholeheartedly endorse those parameters.

9 However, the staff had indicated that its current
10 budgetary resources would only allow, for example, for it to
11 do a complete registration and follow-up of the 500
12 millicurie sources of Cesium-137 in terms of numbers. If
13 they were to go any further, they could do a registration
14 but they could not do a follow-up. Is that prudent?

15 The other question that comes back to the problem
16 of what we think would be a good census is that suppose we
17 take several years and ultimately we follow the staff's
18 recommendations and we go out and we find out that all of
19 the cesium sources of 500 millicuries are fine, we have just
20 taken a tremendous amount of time and effort to find that
21 we're safe from those, but we have no idea what the hazard

22 is to the rest.

23 So what we propose that this Commission look at
24 is, number one, that we go and find out what do we know of
25 the sources that are supposed to be under the care and

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1 custody and control of individuals who have either a general
2 or specific license to have those in their possession. Then
3 we can use that information as the basis of a rulemaking to
4 determine what do we really need to go out and control, and
5 also as part of the rulemaking, to ask if there are limited
6 resources, and we understand that it's a reality, what
7 should be the hierarchy of the sources that are known to be
8 missing that we should go after and find and try to control.

9 Finally, we understand that the working group has
10 indicated that labeling and identification of sources should
11 be improved, and we didn't see specific recommendation of
12 that in the staff's report, but that's very important.
13 while we and everyone at this table will continue to expend
14 tremendous resources on identifying material using source
15 device detection, one of the best ways still is visual
16 identification.

17 Oftentimes, you can take a very potent source, put
18 it in a large railcar full of scrap metal, and the most
19 sensitive detection device won't pick it up because the
20 scrap metal itself causes more shielding. So if there were
21 better ways of identifying sources permanently so that if
22 the mechanical detection fails, we can follow it up
23 hopefully with visual detection.

24 There were recommendations for penalties for lost
25 devices, and as I hear everyone at this table will clearly

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1 agree that \$2,500 to lose a gauge that could cause
2 significant threat to health or life is far from being
3 appropriate.

4 So we ask the Commission to look at the penalty
5 system as a two-phase, first that the Commissioners consider
6 increasing the fine for the loss of a device that is
7 identified before it can cause any damage to two to three
8 times the cost of authorized disposal. However, if the
9 handling of the device causes human suffering or
10 contamination of equipment, grounds or product, the fine
11 against the identified party responsible for the device
12 should reflect the actual cost of full cleanup and the loss
13 of business revenue.

14 Further, we ask that the Commissioners consider
15 using these fines to create a fund that avoids the burden
16 today to the private company, out-of-pocket expenses for the
17 decontamination disposal and loss of business revenue.

18 Finally, there is the issue of orphaned devices.
19 Both the NRC staff and the group agree that there are
20 various state and federal agencies that have various amounts
21 of authority, and that an understanding and a working
22 relationship should improve. Yet very often, even though
23 there is authority out there, in many cases, our members,
24 when they find a source or have a problem, they'll go to an
25 agency, that agency will refer them to the second, the

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1 second to the third, and the third will refer them back to
2 the first one, and if there is ever a direct answer,
3 generally that answer is, "You have it, it's your problem."

4 We understand generally the problem is because of
5 limited funds, and it's also been expressed that as long as
6 a device is there and the shielding is intact, then it can
7 stay in a scrap yard, it can stay in a steel mill because it

8 doesn't pose an immediate threat. Again, we ask is that
9 prudent? We're not in the business of handling devices, of
10 receiving them; we shouldn't be in the business of storing
11 and disposing of them either.

12 We agree that the various federal agencies should
13 determine how best to dispose of these devices, but we ask
14 that if a device is found in a scrap yard or a steel mill,
15 that it be removed from that venue, it be placed under an
16 appropriate venue in a federal or state agency, and then
17 figure out how to dispose of it, but get it out of the
18 private sector.

19 Again, we would like to thank the NRC staff for
20 all of their work. We have had a wonderful working
21 relationship, and it's this relationship that has increased
22 the understanding in our industry and it's going to
23 continue.

24 We're not going to slack off regardless of
25 regulations. We will continue to monitor, we will continue

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1 to install detectors, and we will continue to aggressively
2 pursue this issue. But we need help, we need the cavalry,
3 because we cannot keep playing this game of Russian
4 Roulette, because if something serious happens, if we have a
5 serious, serious contamination, a serious breach of a
6 source, then as we all know, it is out of all of our hands.
7 It becomes the purview of the press, it becomes the purview
8 of knee-jerk reaction.

9 We're concerned with the health and safety of not
10 only our workers, but our communities if that should happen,
11 and we would like to see that that hopefully not happen.

12 Thank you.

13 CHAIRMAN JACKSON: Thank you.

14 Mr. Fletcher.

15 MR. FLETCHER: Chairman Jackson, Commissioners,
16 NRC staff, fellow presenters and members of the public,
17 first of all, I am honored to represent the Organization of
18 Agreement States as its chair.

19 As many of you know, the agreement states number
20 30, and currently license and regulate about two-thirds of
21 all the byproduct material, radioactive material that is
22 licensed.

23 I'm also very pleased to have this opportunity to
24 make this presentation before the Commission to further
25 emphasize the bond that exists between the NRC and the

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1 Organization of Agreement States. It's more than -- a bond
2 that has been strengthened over more than 35 years, and I
3 look forward to helping to further strengthen that bond.

4 I'm here to speak today initially about the report
5 of the working group on the regulation of generally and
6 specifically licensed devices, initially from the standpoint
7 of OAS support, and our support is for the working group
8 report in that it, we believe, demonstrates the need for the
9 regulation of all licensed devices, and our particular
10 concern, as it is the concern of those who presented before,
11 is the oversight of GL devices.

12 This increased oversight that we feel is necessary
13 stems from instances that have occurred in virtually all of
14 the 30 states I represent. These instances vary depending
15 upon the kinds of situations and materials we encounter, but
16 they have involved emergency responses to reports of
17 contamination at landfills, scrap yards, incinerators, and
18 oftentimes frequently these responses are caused by

19 contamination produced from GL devices.
20 I must admit as a program manager that I suffer
21 from a little bit of regulatory paranoia when it comes to
22 devices that I know very little about as far as their
23 location, as far as their activity, as far as what the
24 reporting requirements are.

25 I have a feeling that many of my fellow program

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1 managers suffer from the same ailment, and what we would
2 like to see very much is a program of regulatory
3 responsibility with respect to generally licensed devices.

4 If something happens to a licensee who has been
5 issued a specific license, we feel very confident that we
6 can trace from cradle to grave or we should be able to trace
7 from cradle to grave everything that has happened to that
8 material and everything that a facility has done to maintain
9 radiation safety.

10 We have no idea and we're very uncomfortable with
11 the fact that there are a number of GL devices in various
12 areas that we have no idea about their location, whose
13 managing them, what the management practices are, et cetera.
14 So we would support very strongly that these devices be
15 brought under control and that they be -- that some level of
16 responsibility -- that a level of responsibility that gives
17 comfort to the public as well as the regulatory agencies be
18 followed, and I believe that the working group report
19 itemized very well how that should be done.

20 We want to further emphasize the need for the
21 regulation of all licensed devices, from a program of
22 consistency more than anything else. The Agreement States
23 have a broad requirement for regulation. We regulate not
24 only materials, of course, but all sources of radiation to
25 varying degrees depending upon the states.

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1 I realize there is a great deal of controversy
2 regarding what to do about naturally occurring radioactive
3 materials and devices that contain this material, but I
4 don't see how we can be a consistent regulatory body,
5 particularly in the eyes of the public who don't understand
6 all that we do or don't do, I don't understand how we can
7 continue to pursue our goal of radiation safety across the
8 country without taking into account the need for the
9 regulation of these devices, and I believe very strongly
10 that the opportunity is being presented here with the
11 institution of the national registry to bring all radiation
12 producing devices under some form of control.

13 As you'll note in my comment, I see this initially
14 as being a national program, but it has the potential of
15 some degree of worldwide benefit, and as this becomes a
16 smaller and smaller planet, I believe that's going to be a
17 greater and greater necessity.

18 So from Agreement State perspective, I'm here to
19 reinforce the recommendations made by the working group.
20 The working group process, as we mentioned in instances
21 before, we believe is a very beneficial process because of
22 the way various agencies and various individuals are brought
23 together to discuss these problems. So I believe that more
24 attention and more care should be given to their
25 recommendations than has been at this point.

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1 I'm going to take the liberty at this point to
2 just mention -- I realize that these weren't primary
3 subjects, but to just mention two other areas that the
4 Agreement States do have some concerns about, hopefully for

5 future discussions.

6 One of those is the recent proposal to transfer
7 responsibility of formerly licensed sites to the Agreement
8 States. This is a very, very controversial and very, very
9 distressing subject which we will be providing -- some of
10 the states are individually providing input, but we will be
11 providing further discussion. This is, we believe, outside
12 of our agreement. Secondly, we need to address the current
13 status of DOE contractors.

14 Once again, I bring these subjects up because they
15 are very, very controversial, they are very, very bothersome
16 to many of the member states, and I hope that we have the
17 opportunity to discuss them further at some time in the not
18 too distant future.

19 Once again, I appreciate this opportunity to
20 discuss these subjects, and I hope that you will take these
21 comments in your discussions and give them the attention
22 that the Agreement States would like them to have.

23 Thank you.

24 CHAIRMAN JACKSON: Thank you very much.

25 Dr. Lipoti.

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1 DR. LIPOTI: Chairman Jackson, Commissioners, I
2 have provided formal notes, formal testimony, but I'm not
3 going to speak from that testimony, I'm just going to talk
4 to you and then you can ask questions.

5 I'm very pleased that you have convened this
6 meeting because it's important for you to take action on the
7 staff's recommendations to have a registration program for
8 GL devices. The states have been dealing with this issue
9 for quite a while, and it's wearing sort of thin.

10 CRCPD supports the recommendations of the NRC
11 Agreement State Working Group based on the consequences of
12 the loss of accountability of the material.

13 In terms of the risk assessment, we very much look
14 forward to the comprehensive risk assessment of all the
15 material currently in use to restructure the current
16 licensing and inspection programs, and I understand that's
17 due to be finished in October of '98 and I'm very pleased to
18 see that going forward.

19 We recommend that for the GL devices, that you
20 consider the economic consequences as well as health risk
21 because I think that will assist you in coming up with a
22 second tier of GL devices that might be subject to a
23 registration program. So we very much support and look
24 forward to that risk assessment.

25 In terms of the universe of regulated facilities,

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1 we recommend that the registration program apply to the
2 sources as delineated in the working group's
3 recommendations: Cesium-137, greater than 10 millicuries;
4 Cobalt-60, greater than 1 millicurie; Strontium-90, greater
5 than .1 millicurie; and transuranics, greater than 1
6 millicurie.

7 Of course, CRCPD stands ready to work with you
8 with our suggested state regs so that we can go forward on a
9 parallel rulemaking so that the states will be ready to
10 adopt in an expedited fashion.

11 I have to say that I believe that NARM sources
12 must be regulated to the same degree and based on the same
13 risk and the same kinds of risk assessment that you are
14 doing with your AEA materials. So I would like to charge
15 our suggested state reg committee to incorporate

16 requirements for both AEA and NARM material, so that would
17 expedite the adoption of those regulations by the states.

18 The difficulty will be in coming up with a risk
19 assessment for all of the NARM sources, and if funding is
20 available, I would like CRCPD to take that on, but I'm not
21 sure we're going to be able to do that. That could be
22 fiscally constrained.

23 On the issue of implementation, I think when you
24 design your automated system, it should be big, it should
25 take into account the universe of at least the 30,000

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1 sources that are recommended by the working group, if not
2 bigger, and not just design an automated system for the
3 first 500 and then try and make it bigger later. When you
4 design some automated system, it's important to account for
5 growth.

6 The rulemaking should also be for the entire group
7 of working group recommended sources, but you may need to
8 phase in additional sources based on your risk assessment.
9 I think that if you spread the costs over the larger
10 universe of sources, that the cost might be able to go down
11 for each licensee. I thought the cost was a little high per
12 licensee.

13 One of the things that the staff didn't include
14 was the vendor responsibilities, and some of other
15 presenters have mentioned that. I certainly support that
16 recommendation in the working group paper, and I think it's
17 extremely important for the vendors to inform their
18 customers that registration fees might be charged, that the
19 material is radioactive.

20 I saw the literature, the sales literature, the
21 tritium signs -- I've had a lot of tritium sign problems
22 lately -- and the sales literature never mentions that
23 tritium is radioactive, and I don't think that it's
24 universally known.

25 The cost for disposal should be included up front

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1 on the information that someone receives if they're going to
2 purchase one of these devices. They should be warned that
3 there is substantial cost for clean up if that device
4 becomes involved in an incident, and that there are
5 penalties for non-compliance. I would just suggest that you
6 convene a group of vendors and you gain their input into
7 what they might incorporate into their sales literature.

8 It's important also to have information available
9 for non-licensees so that the finders of these sources have
10 some direction what they should do when they find them.

11 I would like to talk just briefly about the
12 CRCPD's orphaned source initiative because I'm not sure that
13 all of you were aware of this initiative. EPA has provided
14 funding to CRCPD in the amount of \$200,000 and the goal is
15 to develop and facilitate implementation of a dynamic
16 nationwide system that will effectively manage orphaned
17 sources.

18 CRCPD has named a committee with Joe Klinger as
19 the chair, Jim Yusko, Bob Free and Cheryl Rogers as members.
20 Jim Yusko is here today. And they're meeting next week to
21 start on their charges. One of their first charges is to
22 define the roles and responsibilities and the procedures for
23 the major stakeholders. I think some of the testimony
24 presented here has shown that the roles are not clear yet
25 between various agencies and their authorities, so that

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1 becomes a very important issue.

2 The CRCPD's committee is also developing a
3 materials management program which will describe brokerage
4 facilities available, direct disposal, and will provide
5 outreach to manufacturers for recycling options, so that
6 when someone finds one of these sources, they can have a
7 flow chart for how to get rid of it.

8 We intend to put forward an outreach program which
9 would include outreach to finders of the sources as well as
10 the other stakeholders involved. We wish to maintain an
11 incident database. NRC staff participates. They provide
12 staff input to this committee, as does the Department of
13 Energy.

14 I think what you have for generally licensed
15 sources is this regulatory net, but there are holes in this
16 net where these sources are getting through, so then there
17 is this secondary net which has been put in place and kind
18 of tagged together by the steel manufacturers and the
19 recycling industries and states, and this secondary net is
20 wearing thin, and that's why we're here today, to tell you
21 how important this is.

22 I'm starting to see evidence that people are
23 trying to hide these sources when they put them in the scrap
24 metal. In November, one of my staff went out on a scrap
25 metal alarm incident and when he came back, he said, Jill, I

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1 think you should know about this one because it was
2 interesting. The source was in a coffee can and there was
3 chain wrapped around the coffee can and some sort of
4 rudimentary shielding. They kind of hoped it would get past
5 the detectors. It didn't this time. So we start to see
6 evidence of people trying to evade the second net, which
7 isn't even regulatory, it's just a safety net, and I think
8 that our staff is distracted from their normal duties when
9 they have to respond to alarms, and there's a lot of them,
10 it's more than one a week.

11 So we're ready for new options, and we want to
12 proceed forward on this, and that's why I didn't say wait.

13 Thanks.

14 CHAIRMAN JACKSON: Okay. Thank you very much.

15 Commissioner Dicus.

16 COMMISSIONER DICUS: Thank you. I don't have any
17 questions right now. I will have some questions for the
18 staff, and I think they have a feeling what some of those
19 might be, but a couple of comments, and one of them is on
20 rulemaking.

21 Granted, sometimes our rulemaking process is a
22 little extended, but at least part of that is due to the
23 process we must follow, and we can't go outside of and
24 general counsel would probably address this much better than
25 I can.

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1 The other issue on the cost of the program and
2 particularly the cost per licensee, I choked a little bit
3 when I saw those costs, and one of the things we'll ask the
4 staff to do is explain where those costs come from. But
5 they may be close to valid and it's just one of those
6 problems that we have to factor into what we're doing.

7 CHAIRMAN JACKSON: Thank you.

8 Commissioner Diaz.

9 COMMISSIONER DIAZ: Just a quick comment. It
10 seems to me like when we covered all the subjects, there was
11 an area that was really prevention, and, you know, we --
12 that sounds loud and clear to us.

13 The other area was the mitigation area, and I
14 heard some things about, you know, orphaned sources and so
15 forth. I think one area that, you know, sometimes we have
16 to deal with is the stream of contaminated materials which
17 are not radioactive enough to be considered as orphaned
18 sources and what happens to those materials, whether they're
19 NORM or NARM and so forth.

20 I understand from the presentation of Mr. Collins
21 that there are enormous amounts of materials with a slight
22 amount of contamination that are not being dealt with, and
23 that will be an important consideration.

24 Thank you.

25 CHAIRMAN JACKSON: Commissioner McGaffigan.

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1 COMMISSIONER MCGAFFIGAN: Mr. Mattia, you
2 mentioned the possibility of just sending out a mailing and
3 trying to find out what the scope of the problem is.

4 As I understand it, we don't know in the case of
5 generally licensed devices who to send the mailing to
6 because we don't keep track of generally licensed devices.
7 Am I wrong on that?

8 MR. MATTIA: Well, it was my understanding from
9 the staff that anyone who purchases a generally licensed
10 source that the manufacturer submits their information to
11 the NRC, and so there is a start of a database that if I
12 brought a generally licensed source in 1975, and I listed an
13 address, that that would be the first point of contact: Are
14 you still at this address and do you have the licensed
15 source?

16 COMMISSIONER MCGAFFIGAN: And then if it isn't, we
17 have a -- okay. So I understand, what you're saying is we
18 would use -- for the specific licensees, we should have
19 their addresses. For the general licensees, we would use
20 the addresses that were given to us by the manufacturers and
21 see if the people have them. That's your proposal. Okay.

22 In the case of radium -- in the case of NARM and
23 NORM, you mentioned, Ms. Lipoti, that over 50 percent or
24 about 50 -- a lot of the cases involve Radium-226 that end
25 up in these folks' mills. Do you have a curie level that

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1 you would, if you're doing the state regulations today, that
2 you would propose to your fellow states, like the 10
3 millicurie or the 1 millicurie or the .1 millicurie that we
4 had for the other substances?

5 DR. LIPOTI: I don't. I think a risk assessment
6 is very much needed in that area and has not been done.

7 COMMISSIONER MCGAFFIGAN: Okay. The last item,
8 and most of these questions, I agree with Commissioner
9 Dicus, go to the staff, but I do think, having listened to
10 this debate for the last 14 months, we may have to take some
11 of you up on your offer to help us on funding, because I
12 think that the staff's reluctance is partially funding, that
13 they see large resources and they're not quite sure -- maybe
14 having more people paying fees would be one way to solve the
15 problem, but you get into some inequities, some fairness
16 issues.

17 I also think this economic issue is pervasive, the
18 question of whether it's strictly a public health and safety
19 job, and that may be what the Atomic Energy Act requires --
20 I'll defer to counsel on that -- and the degree to which we
21 can take into account under our current framework these
22 large economic costs that accrue to non-licensees.

23 But those seem to me -- I mean, if you're trying
24 to figure out why the staff is proposing something less than

25 what the working group proposed, I think it is partly a fee

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1 issue and then it's partly how much do I take into account
2 these large economic costs that are being accrued by folks.

3 It also comes up in the orphaned device thing.
4 The reason you have everybody pointing to the next person at
5 the table is that -- and I'm not sure that's our
6 responsibility since we don't have a place to put them, but
7 I tend to think, having listened to the discussion, that
8 somebody should be willing to take the -- some federal
9 official, not just on an imminent danger to public health
10 grounds but as a matter of fairness should be willing to
11 take some of these things off of people's hands once they're
12 in their hands.

13 But the problem seems to be, again, whose
14 responsibility that should be and should there be a
15 criterion other than just imminent danger to public health,
16 but some sort of recognition that this is a public policy
17 program problem that we're dealing with, and there's a
18 fairness issue to the innocent victim.

19 But I'll take any comment you want to make.

20 MR. COLLINS: On the question of fairness, during
21 the working group meetings over a period of 18 months or so,
22 there was no comment from any holder of a device, and I'm
23 talking again using 3M as a case in point, a company which
24 has 1500 of these devices, that a nominal registration cost
25 and annual fee for the holding of these devices is not in

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1 order. Steel companies themselves use these devices. There
2 is such a proliferation of these devices across this economy
3 that all kinds of industries and all kinds of service groups
4 like medical establishments have these devices, and more and
5 more are coming on line.

6 A nominal fee certainly seems to us to be a better
7 approach to funding the program on the part of the user than
8 a huge economic impact on the part of a number of
9 unfortunate companies that can't shield these devices from
10 going into their operation.

11 COMMISSIONER MCGAFFIGAN: May I just ask another
12 question?

13 CHAIRMAN JACKSON: Go ahead.

14 COMMISSIONER MCGAFFIGAN: \$480 per device times
15 1500 -- you're sure 3M would make the same statement having
16 heard the staff's estimate per device?

17 MR. COLLINS: Well, I --

18 COMMISSIONER MCGAFFIGAN: Even a hundred dollars.
19 Even if it's a hundred dollars, which is what Oregon
20 achieves, 100 times 1500 is \$150,000.

21 MR. COLLINS: You're talking about a device that
22 costs -- it can cost upwards of two or three hundred
23 thousand dollars, and a \$100 registration fee for such a
24 device or a \$200 fee is a very nominal cost to run a
25 radioactive device in the American economy, yes.

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1 Absolutely.

2 CHAIRMAN JACKSON: Dr. Lipoti and then Mr. Mattia.

3 DR. LIPOTI: I had some thoughts. I also puzzled
4 over the fact that costs cannot be considered for regulatory
5 actions necessary to ensure adequate protection of health
6 and safety of the public, and I thought about it, and then I
7 came up with, but costs can be a factor in those cases where
8 there's more than one way to achieve a level of adequate
9 protection, and in this case, one of your adequate

10 protections of the public is really the steel manufactures
11 and the scrap metal people having these alarms on their
12 facilities.

13 So I think that you need to consider that another
14 way of providing adequate protection might be a stronger
15 regulatory program, and then there, maybe the economic
16 consequence -- the economics could be factored in. So I
17 would want to talk to that general counsel a little bit
18 about how that might be factored in.

19 CHAIRMAN JACKSON: Well, she's sitting at the
20 table.

21 MS. CYR: There's nothing under the Atomic Energy
22 Act -- I mean, the Atomic Energy Act provides that we may
23 take action to minimize damage to property. Where we have
24 taken it into account is -- the only place where we have
25 limited it is, as you said, in -- when we're going to beyond

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1 adequate protection in reactor space have we placed any
2 limits on our ability to do that vis-a-vis backfitting
3 considerations. But the Act clearly provides that the
4 agency has authority to take action to minimize danger to
5 property.

6 CHAIRMAN JACKSON: Well, that's an interesting
7 comment, and I'll just then interject a comment, and maybe
8 it's from a strategic point of view in terms of if you ever
9 have occasion to present again, notwithstanding what the
10 general counsel said, it seems that you missed an
11 opportunity to talk about it from an environmental
12 protection perspective in terms of a device that gets broken
13 apart or whatever ending up in a scrap metal stream and
14 ending up therefore being propagated beyond the boundaries
15 of your property and having some adverse impact, as well as
16 a focus on the worker.

17 MR. COLLINS: I did mention in my statement the
18 impact on the environment.

19 CHAIRMAN JACKSON: You did mention that? Right.
20 But I'm just saying in terms of highlighting it as opposed
21 to how many dollars it's costing you. I mean, there is an
22 implied -- we accept Dr. Lipoti's point of view, you know,
23 secondary regulation where there is some cost for you, but I
24 really think, from the point of view of where our
25 responsibilities lie, I think the issue of worker protection

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1 and the issue of environmental protection is an important
2 consideration.

3 MR. COLLINS: The states are very concerned about
4 the carloads of irradiated electric furnace dust in rail
5 cars that are behind the string of steel plants that have no
6 home, no place to go. Very concerned.

7 CHAIRMAN JACKSON: Okay.

8 DR. LIPOTI: I want to make one more point. You
9 might consider taking the penalty money for people not
10 complying and putting it in a revolving fund that could be
11 made available for disposal of some of this.

12 CHAIRMAN JACKSON: Well, these sorts of issues
13 have come up in the past about what to do --

14 MS. CYR: That would require legislation.

15 CHAIRMAN JACKSON: -- yes -- with our civil
16 penalties, and that's not so straightforward. But it's an
17 interesting idea.

18 Mr. Mattia.

19 MR. MATTIA: Yes, thank you.

20 I wholeheartedly agree with Commissioner
21 McGaffigan. There is a reality here that there are

22 restraints. We would have loved nothing more than to come
23 to you and say please register everything effective -- take
24 a couple months to implement it, and if you need a dozen
25 FTEs, we'll run up on the hill and get them for you. We

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1 would love that to happen, but the reality is the sources
2 are out there, they're showing up at the facilities, and
3 maybe what we need to do is find out what the most effective
4 way of combatting this problem short-term is.

5 I mentioned the fact that in the staff report,
6 they talked about let's go after the 500 millicurie cesium
7 sources. Well, granted, these are the most dangerous, but
8 if we spend several years, get to the end of that road, and
9 find out they're all safe and sound, what have we
10 accomplished except we have assured that we're not in danger
11 from those but probably from everything else. So go out and
12 find out what's really the scope of the problem, work to
13 find what resources are truly available and hone them in on
14 where we can stop the leaks in the dam as quickly as
15 possible and then start to expand the coverage area to
16 hopefully someday include everything.

17 CHAIRMAN JACKSON: Mr. Sharkey.

18 MR. SHARKEY: Just briefly, I would like to
19 respond to Commissioner McGaffigan.

20 I think the steel manufacturers here would be much
21 more interested in devoting our energy and resources to
22 addressing the funding issue than going out and conducting
23 additional surveys. I think it's an urgency issue, it's a
24 matter of time. I think Jim and I agree on the fact that we
25 would rather get our arms around how we can make this thing

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1 work from a funding standpoint than doing more surveys.

2 CHAIRMAN JACKSON: Okay.

3 I think at that point, we will draw this part of
4 the briefing to a close and ask the NRC staff to come
5 forward. Let me thank each one of you for a very
6 informative set of presentations.

7 MR. MATTIA: Thank you.

8 MR. FLETCHER: Thank you.

9 CHAIRMAN JACKSON: Thank you.

10 Mr. Thompson, please proceed.

11 MR. THOMPSON: Chairman Jackson, thank you very
12 much. I guess I wish I had this morning's meeting rather
13 than this afternoon's meeting.

14 CHAIRMAN JACKSON: Why, because we're too nice?

15 [Laughter.]

16 MR. THOMPSON: Well --

17 CHAIRMAN JACKSON: Be very careful.

18 MR. THOMPSON: Be kind.

19 [Laughter.]

20 MR. THOMPSON: You've already heard the
21 presentations from the steel industry concerning the
22 consequences they face when licensees lose radioactive
23 material and their comments on the staff's action plan. In
24 addition, you have heard the concerns of the representatives
25 of the state radiation control programs and their

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1 recommendations for improving accountability of devices and
2 their comments on the staff action plans and, obviously,
3 there are wide ranges of suggestions and some important
4 elements that we certainly have considered. I think each of
5 those items that they've talked about we have certainly
6 considered.

7 I guess I would want to respond to kind of one
8 issue and that dealt with the issue of Russian roulette. I
9 think the concerns there, and they are not to be downplayed,
10 that there are devices out there that can be deadly and have
11 a sufficient amount of radiation that could cause death,
12 those are not the devices that we're talking about today in
13 the generally licensed devices. Those are specifically
14 licensed devices. For example, the one in Texas that was
15 the large cobalt device, it was a specifically licensed
16 device and they are under a regulatory scheme for which both
17 us and the agreement states have inspection procedures,
18 they're licensed, we know about those devices ahead of time.

19 But that is not to minimize the concerns that even
20 if they are stolen and they end up in a scrap metal area, I
21 don't want to minimize that there are concerns by both us
22 and the states and anyone who deals with those. But that is
23 not the type of devices that we are looking at.

24 The staff has evaluated the recommendations of the
25 NRC agreement state --

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1 CHAIRMAN JACKSON: Excuse me a second.

2 Did you have a comment on that?

3 COMMISSIONER MCGAFFIGAN: No.

4 MR. THOMPSON: But he concurs fully with that
5 argument.

6 [Laughter.]

7 CHAIRMAN JACKSON: Let's let him finish his
8 opening comments.

9 COMMISSIONER MCGAFFIGAN: I just want to get
10 educated on where -- on cesium 137, how much can it be
11 before it is specifically licensed or before a specific
12 license is required? How many, how many Curies do you get
13 and does it depend on the device and the amount of shielding
14 it has or how does that work?

15 MR. THOMPSON: It is that but I'll turn to, I
16 guess --

17 CHAIRMAN JACKSON: For coherence here, I think
18 that it's important that we finish and then --

19 COMMISSIONER MCGAFFIGAN: I just was trying to
20 follow up on that point.

21 CHAIRMAN JACKSON: No, I understand.

22 COMMISSIONER MCGAFFIGAN: Public health and
23 safety. My understanding from Rita Aldridge about a year
24 ago is that some of these devices that are generally
25 licensed mishandled can be a problem and I just wanted to

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1 refresh my memory about that.

2 MR. THOMPSON: And we did have one proposed
3 rulemaking, you may recall, that was a device that we looked
4 at if an individual put their head in a particular area,
5 that could be a high level radiation. I don't remember that
6 being a deadly, a lethal dose but that's just my current
7 memory.

8 COMMISSIONER MCGAFFIGAN: I'll come back to it.

9 MR. THOMPSON: In any event, we've looked at the
10 NRC agreement state working group that examined the issue of
11 control over and accountability for the devices that we've
12 talked about. The staff submitted an action plan, including
13 its evaluation of the working group's recommendations to the
14 Commission on November 26, 1997, SECY 97-273.

15 That paper was submitted to the Commission in the
16 context of our efforts to be both risk informed and
17 consistent with the resources that were available to the
18 staff and our operating plan and the budgets that we had and

19 that was the options that we laid out to the Commission and
20 we tried to take that in what we would say a risk-informed
21 to look at the devices that would pose the largest risk and
22 address those first.

23 I would now like to introduce Dr. Don Cool,
24 Director of the Division of Industrial Metal and Nuclear
25 Safety. Dr. Cool will discuss the staff's action plan for

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1 improving the NRC control over and the licensees'
2 accountability for licensed devices. Also at the table with
3 me today are Dr. Carl Paperiello, Director of NMSS; John
4 Lubinsky who served as the NRC co-chair of the working
5 group; and Frank Congel from AEOD.

6 I would now like to turn the program over to
7 Dr. Cool unless there are some other questions.

8 CHAIRMAN JACKSON: Before Dr. Cool launches into
9 his presentation, can one of you give an answer succinctly
10 to Commissioner McGaffigan's question.

11 DR. COOL: I will try to do so.

12 In fact, you will find that there is a range of a
13 couple orders of magnitude in terms of the Curie quantity of
14 cesium where it could be generally licensed or specifically
15 licensed. The maximum Curie quantity in a generally
16 licensed device is something on the order of 5 Curies, a
17 relatively significant quantity of material.

18 You will find lots of sources considerably smaller
19 than that also in specific licenses. So in fact, at the
20 moment, the regulatory regime is not a neat and tidy box
21 based on activities or quantities of materials. And, in
22 fact, there are a number of devices which, depending upon
23 how they have been packaged or sold, may be specifically
24 licensed in some circumstances or may, under other
25 circumstances or very slight modifications, obtained and

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1 used under a general license.

2 CHAIRMAN JACKSON: Can you lay out for the
3 Commission what the criteria are, the main ones that you
4 really use in determining whether something should be a
5 specifically licensed device, generally licensed?

6 DR. COOL: The criteria for generally licensed
7 devices and the types of tests that it would have to meet
8 are laid out in Part 31, which is the actual laying out of
9 the general license for devices. And the associated
10 criteria and tests that have to be passed for a specific
11 source or a specific kind of device in Part 32.

12 CHAIRMAN JACKSON: Can you list for us today what
13 some of those are?

14 DR. COOL: Actually, I am going to turn, if you
15 don't mind, to John who can give you, I think, probably a
16 little more accurate description of some of those tests in
17 Part 32.

18 MR. LUBINSKY: As Don was saying, in Part 32 is
19 the criteria for what would meet the general licensing
20 requirements. It is very much a performance-based
21 requirement in that it does not look at actual Curie content
22 but looks at the normal use conditions as well as accident
23 conditions and puts a limit on a maximum dose, maximum dose
24 being 500 millirem during normal use to any worker and then
25 under accident conditions where it is unlikely, such as

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1 explosions or fires, where it could be as high as 15 rem to
2 an individual from a generally licensed device.

3 Many of these fall much lower than this limit. As

4 Don was saying, there are some in the 5 Curie range for
5 cesium that are under a general license. The performance
6 testing would look at actual conditions of use that are
7 provided by the manufacturer of the device.

8 The manufacturer would come in, request that the
9 device be allowed or authorized for use under a general
10 license, would demonstrate what type of testing conditions
11 that the device has gone through so that it would meet the
12 normal conditions of use and the performance-based criteria
13 of the 500 millirem during normal use and the 15 rem.

14 CHAIRMAN JACKSON: Commissioner.

15 COMMISSIONER MCGAFFIGAN: I may be -- if -- is an
16 accident condition one of those scrap folks who is shredding
17 the thing somehow and you have a 5 Curie source, it's
18 generally licensed, and whatever they do to get a car down
19 to a couple handfuls of metal, that happens to that thing by
20 accident. Would there then be a significant exposure to
21 potentially the workers in the yard?

22 Again, I am trying to follow up on Hugh's comment
23 at the outset that there is no public health and safety
24 risk.

25 MR. THOMPSON: I didn't say "no," I said,

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1 "deadly." I thought --

2 COMMISSIONER MCGAFFIGAN: Oh, okay, deadly.

3 MR. LUBINSKY: The rule itself does not talk about
4 loss and the consequences associated with loss. It talks
5 about accident and uses a, for example, explosion or fire.
6 Under those types of conditions, you are talking about
7 internal as well as external exposures. And the scenarios
8 typically for an accident condition would include unshielded
9 material but typically when a manufacturer provides this
10 information to us, the scenario does include information
11 that there has been a release of the material.

12 So therefore the time frame in which the material
13 is released to the public before there is some type of
14 intervention is taken into consideration. When you get into
15 areas where it is in the public domain and could be at the
16 scrap facility where the container is broken open or that
17 the dispersion has occurred of the material, the time may be
18 more than what the manufacturer originally estimated in the
19 dose assessment that he provided to us.

20 You do need to look at the fact that, as many have
21 said already, the devices are labeled and they have some
22 identification. So when this does occur, after damage
23 occurs, it is likely that someone is going to see this
24 labeling and take the proper precautions to keep that time
25 frame down. But once it reaches the public domain, there is

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1 nothing to say that it would definitely be identified in a
2 timely manner.

3 CHAIRMAN JACKSON: Yes, Dr. Cool?

4 DR. COOL: If I could add one thing? I think it
5 may be important to note that an accident condition is
6 something that is recognized and you go through the
7 analysis. So you assume that an explosion has occurred and
8 therefore you have some recognition and then perhaps some
9 activities dealing with the event.

10 An alternate scenario which is, I don't believe,
11 John, correct me if I'm wrong, part of the nominal process,
12 is assuming that it is undetected and an accident occurs, a
13 shredding or other material, where there is no detection and
14 no information and things just progress without recourse.
15 The accidents are assuming that I've got it here and

16 something happened here, the steel overflowed and melted it
17 or an explosion occurred which ripped it apart or various
18 other activities.

19 CHAIRMAN JACKSON: What you're really saying is
20 that your "design basis accident" assumes a certain
21 accountability program and a certain accountability for the
22 device.

23 DR. COOL: That's correct.

24 CHAIRMAN JACKSON: If it propagates in the public
25 domain that no longer exists.

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1 DR. COOL: That's correct.

2 CHAIRMAN JACKSON: Let's go down the line here.

3 Commissioner Dicus?

4 COMMISSIONER MCGAFFIGAN: We will eventually let
5 them make their presentation.

6 COMMISSIONER DICUS: Well, maybe.

7 Back to your opening comment, and I tend to
8 perhaps agree that at least we are not dealing with sources
9 that we don't anticipate, an acute deadly exposure, but
10 that's not to say that we could not have exposures that have
11 a health effect, potential health effect and potentially a
12 serious health effect so we need to make that distinction.
13 We are dealing with sources that can in fact do that.

14 MR. THOMPSON: That's right. And we are dealing,
15 I think, in the neighborhood of just NRC a half a million
16 sources. Of a half a million sources, there are very few
17 numbers that reach this level like that.

18 We talked about I think in the working group there
19 may be something on the order of 25,000 sources that are of
20 concern, at least as kind of identified by the working
21 group. So it goes -- this is just from NRC and of course
22 you have heard, I guess, the presentation today. A number
23 of the detections really deal with NORM and NARM type
24 material. So if you look at the types of devices and the
25 likes of detections out there, there are millions of these

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1 types of devices, both in agreement states and NORM type of
2 activities. So it is not a small subset of issues that we
3 are addressing.

4 COMMISSIONER DICUS: And one more, addressing the
5 issue of labeling. And it was brought up I think by the
6 industry as well, that sometimes the labels simply are
7 obliterated. Some of these devices are in industry, in
8 plants, have been there for years and, for any number of
9 reasons, there's not a label on it anymore. I've
10 encountered those devices.

11 I think one of the issues that was brought up is
12 to look at labeling and are we, in fact, labeling them well
13 enough or in a manner that probably would sustain some
14 pretty rough handling, which some of them are designed to
15 do. But maybe not the labeling.

16 CHAIRMAN JACKSON: Commissioner Diaz.

17 COMMISSIONER DIAZ: Yes, very quickly. This is
18 purely driven by the intention of putting Mr. Thompson in
19 deep waters.

20 [Laughter.]

21 COMMISSIONER DIAZ: And no other intention.

22 But looking at prevention, if a specifically
23 licensed device, significant or possibly deadly, you know,
24 radiation doses can get into the main stream, like the Texas
25 one, what does that say about prevention for those that are

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1 not so well kept and labeled?
2 MR. THOMPSON: I'm sorry, you mean for --
3 CHAIRMAN JACKSON: His basic point is that, you
4 know, to have a focus on prevention and you talked about
5 specifically licensed devices which presumably have a better
6 accountability program associated with them. And if they
7 can end up like --
8 COMMISSIONER DIAZ: That's right. I don't think
9 we have a program for which we can have criminal acts that
10 we can prevent, even where we have resident inspectors --
11 CHAIRMAN JACKSON: I don't think that's his point.
12 COMMISSIONER DIAZ: No. I'm talking about
13 probably of occurrence and the consequences and how to
14 prevent them. And you wouldn't prevent a specifically
15 licensed device to enter public life even if it would be
16 very large and therefore that says that the other generally
17 licensed devices needs to have proportionally maybe larger
18 preventions measure because they don't have the same
19 benefits of registration and accountability and so forth.
20 CHAIRMAN JACKSON: Let me put it crudely.
21 MR. THOMPSON: That will get me.
22 COMMISSIONER DIAZ: That was intentional.
23 [Laughter.]
24 CHAIRMAN JACKSON: If you can't prevent a
25 specifically licensed device from ending up in a situation

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1 where you can have a potentially -- an exposure that has
2 public health and safety consequence, what confidence should
3 we have that the generally licensed devices --
4 MR. THOMPSON: You don't. And that's exactly
5 right and, in fact, when you look at our analysis with
6 respect to what we would be able to prevent, we don't
7 guarantee and in fact we say you cannot guarantee a hundred
8 percent.
9 If we implement this program perfectly, you know,
10 with every device, there are still devices. The
11 registration, some will slip through the system by human
12 error, not by intent. Or there may be, as we heard
13 Dr. Lipoti talked about there will be some that will find
14 themselves disguised, even though they may have been
15 registered. People may be willing to --
16 CHAIRMAN JACKSON: I still think you're missing
17 the point.
18 COMMISSIONER DIAZ: You're missing the point.
19 MR. THOMPSON: I certainly am. I'll take my
20 lessons later.
21 CHAIRMAN JACKSON: Let me make sure he's finished
22 now.
23 COMMISSIONER DIAZ: No, I'm finished.
24 CHAIRMAN JACKSON: Okay, Commissioner McGaffigan?
25 COMMISSIONER MCGAFFIGAN: Just on this issue of --

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1 and I have been looking in Parts 31 and 32, they're long, to
2 find this 500 millirem and 15 rem standard -- but the -- is
3 that an ICRP recommendation? Is that unique to this
4 country? How do we differ from other countries in defining
5 specific versus general licensed devices?
6 DR. COOL: That is something that we best maybe
7 sit down in your office because it will take a long period
8 of time.
9 What you will find is that there are considerable
10 variations internationally. You will find that a
11 registration or a registration style program is used by
12 folks like the U.K. for lots of devices, including a lot of

13 the things that we specifically license, including
14 radiography. You will find that the control of these
15 devices on the other end of the spectrum in many countries
16 the IAEA has as member states simply doesn't exist at all
17 and we have been part of efforts with IAEA to try and
18 establish sort of minimum programs that some of those member
19 states should deal with.

20 In fact, internationally, the control of these
21 sources, the trafficking is a term that has been used
22 occasionally, is a significant and ongoing condition, not
23 just because of the breakup of the former Soviet Union but
24 because, in fact, sources continue to move around.

25 CHAIRMAN JACKSON: I think though this is too much

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1 Washingtonian-itis, because I thought the question was, how
2 do we arrive at our standards and to what degree do they
3 report with existing international standards?

4 DR. COOL: Our standards were, in fact, derived
5 well before ICRP-26. The dose for a member of the public,
6 you noted we quoted was 500 millirem. Since then, Part 20
7 has been revised to 100 millirem. So that no longer
8 comports with the international recommendations.

9 The accidental dose of 15 goes back I'm not sure
10 how far, you will find a range of values in terms of
11 accident scenarios and what might or might not be
12 acceptable, some of them above, some of them below.

13 COMMISSIONER MCGAFFIGAN: So this is somewhat off
14 the subject but is there any intention to ever go back and
15 bring this all into conformity with ICRP recommendations?
16 Because, you know, in all honesty, when we talk about
17 decommissioning, we cite ICRP. I think we have a hard time
18 picking and choosing among ICRP. And when we are in a
19 dispute with another agency, we say ICRP is good and when
20 it's inconvenient to us or maybe there's backfitting issues,
21 I don't know. But we don't know in and change down to 100
22 millirems. I don't know whether that would make some of
23 these devices that are specifically licensed -- generally
24 licensed today specifically licensed right off the bat. So
25 is that part of an overall program in the staff's view at

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1 some point?

2 MR. THOMPSON: That's part of our risk assessment
3 approach. As I recall, part of the whole purpose was to
4 look at the devices that are generally licensed now and
5 decide which of those should be specifically licensed or
6 come under a registration program, as well as there may be
7 some devices we specifically license right now and, when we
8 do a risk assessment on them, that they don't need to be
9 specifically licensed. Again, that's the effort to have our
10 resources applied on those types of devices based on the
11 risk that they present.

12 CHAIRMAN JACKSON: Why don't we move along.

13 MR. THOMPSON: Don't

14 DR. COOL: Okay. I guess now I come back and say,
15 good afternoon, Chairman Jackson and Commissioners.

16 [Laughter.]

17 DR. COOL: I will go directly to slide two and we
18 will try to move through this with all expeditious speed. I
19 think you are probably very familiar with the background.
20 This has been ongoing for a long period of time.

21 We will go ahead and go to slide three.

22 What I want to touch on briefly today is the
23 activity associated with orphaned devices and you have

24 already heard from Dr. Lipoti a number of the activities
25 going on. Briefly, what we are doing in the risk assessment

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1 arena in response to the Commission's strategic setting
2 issues and then the registration program itself.

3 Go ahead and go to slide four.

4 As you have already heard and which we agree, a
5 number of folks have identified the orphan source issue as a
6 significant issue. We have been pleased to work with the
7 conference in their efforts and the meeting which already
8 took place and we will be participating in a meeting next
9 week with the group as they come off, start this particular
10 process to work through that activity.

11 In addition to that, there is a longstanding
12 relationship both programmatically and in our emergency
13 response arena in terms of dealing with situations where a
14 source is identified. There are relationships with the
15 Department of Energy and understanding of the kinds of
16 questions that we will ask and then get the Department of
17 Energy involved in terms of whether or not there is, in
18 fact, a measure of safety if a device is identified in the
19 public domain, if there is a method for dealing with that
20 within the existing regulatory structures in state or
21 another licensee, whether or not there is someone who may
22 wish to have that device.

23 In fact, CRCPD for a number of years has had a
24 list of people who are interested in using a device and that
25 has proved useful on a number of occasions where something

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1 is identified and we are able to get them that has and them
2 that wants together. And then situations where all of that
3 fails where we have been successful in engaging the
4 Department of Energy to provide assistance in picking up and
5 actually providing radiological support for surveys or
6 control of sites, for taking and dispositioning sources,
7 particularly americium sources. Those activities are
8 ongoing.

9 We recently had an exercise called Lost Source
10 Exercise up in our Region I that included EPA, several
11 states. It was very useful in identifying who is going to
12 call whom, under what circumstances. And we continue to
13 pursue a whole variety of those sort of situations.

14 CHAIRMAN JACKSON: So to what extent -- you are
15 basically saying everything is being handled on an ad hoc
16 basis at this point?

17 DR. COOL: At this point, we are operating on an
18 ad hoc basis.

19 CHAIRMAN JACKSON: And you mentioned here the
20 agencies are continuing to formalize the procedures in an
21 MOU between the agencies. Does such an MOU really exist?

22 DR. COOL: The draft of the MOU was sent to the
23 Department of Energy. We received in late December the
24 Department of Energy General Counsel's markup of that
25 memorandum. We are working with folks in our general

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1 counsel's office now to see whether or not we can move
2 forward, take the next step and actually have an MOU that
3 can be signed. So there is --

4 CHAIRMAN JACKSON: What kind of time line are
5 you --

6 DR. COOL: -- actually draft language being moved
7 back and forth.

8 CHAIRMAN JACKSON: Are you operating on a time
9 line to have that done by a certain point?

10 DR. COOL: I would like to have that done in a
11 matter of a few months. Unfortunately, that has been going
12 on a lot longer than I would like it to be.

13 CHAIRMAN JACKSON: I understand all that but you
14 don't have an agreement with the Department of Energy or any
15 other agency at this point in terms of a time by which you
16 need to have this formalized?

17 DR. COOL: That's true.

18 CHAIRMAN JACKSON: Yes, Commissioner.

19 COMMISSIONER DICUS: Dr. Lipoti was somewhat
20 critical of this and indicated that perhaps there is still a
21 passing of the buck among the federal agencies, which I
22 think goes to the heart of some of the Chairman's questions.
23 And likewise, you are talking about with DOE, which is
24 accepting some of these sources for disposal, but EPA is
25 likewise involved.

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1 Where are we with that? Do you agree with
2 Dr. Lipoti's assessment?

3 DR. COOL: I, in fact, agree with Dr. Lipoti's
4 assessment. There are a number of circumstances where it
5 takes a while for the federal family to figure it out and
6 that is a frustrating process, having been on a number of
7 those calls at all hours of the day or night, because a lot
8 of times what happens is we've got a source, nobody knows
9 what the source is. Something has alarmed or someone has
10 found something.

11 In that kind of circumstance, if you go through
12 the Federal Radiological Emergency Response Plan activities,
13 EPA is in the lead. If it is identified as being AEA
14 material, then NRC would have the federal lead. Recognizing
15 in all of that, in fact, the state is in the forefront and
16 we are moving back and forth.

17 So I agree with Dr. Lipoti. It can be very
18 frustrating as it all sorts out. Sometimes it is not
19 terribly satisfying and sometimes it takes a relatively
20 protracted, perhaps days, period of time.

21 COMMISSIONER DICUS: Or maybe weeks.

22 A followup question then, in the MOU, and what we
23 are working, is it designed to correct this problem, that we
24 get the call until the federal family figures out who is in
25 the lead? Somebody is going to go get the source and get it

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1 out of the public domain or assist the state in getting the
2 source on a temporary basis to get it out of the public
3 domain?

4 DR. COOL: In fact, no, not completely. This
5 memorandum is to formalize the relationship and process
6 steps by which we can get DOE to accept a source. It does
7 not deal with some of the procedural issues and
8 jurisdictional issues between EPA, NRC, DOE --

9 CHAIRMAN JACKSON: How do you intend to get at
10 that?

11 DR. COOL: I actually think the best approach is
12 where CRCPD is going right now and that is exactly, and I
13 agree again with Dr. Lipoti's comment that she made to you
14 about the fact that the relationships and jurisdictional
15 issues is one of the things they have asked the working
16 group to identify on early on in the process to try and
17 provide some better definition.

18 CHAIRMAN JACKSON: Yes.

19 COMMISSIONER DICUS: Okay, one last. I'm sorry.
20 And then you've got the floor.

21 COMMISSIONER MCGAFFIGAN: No, that's fine.
22 COMMISSIONER DICUS: If CRCPD seems to be the
23 instrument that is going to work, try to work this problem
24 out I guess for the federal family and then, of course, with
25 the states as well, who is funding them to do that? I mean,

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1 how is that being done? Is that the funding the EPA is
2 providing?

3 DR. COOL: EPA has provided funding to the CRCPD.
4 And I don't know the extent or duration, at least for this
5 year, for this group to be considering these and try to pull
6 together some program.

7 MR. LIPOTI: Some of the 200,000 goes into next
8 year.

9 CHAIRMAN JACKSON: Okay.

10 COMMISSIONER MCGAFFIGAN: Can I clarify this issue
11 of getting out of public domain? Because in talking to
12 Mr. Mattia last week in my office, it sounds like when
13 oftentimes whatever fed decides they are in charge finally
14 shows up, they will do a survey and say, not a danger, your
15 problem, see you later because there isn't an imminent
16 danger to public health and safety. And then this person is
17 left with the courts and maybe -- how do you deal with these
18 folks in the scrap yards who aren't our licensees.

19 Say it's an Atomic Energy Act material but it's a
20 very small device. Is it a possible answer under this MOU
21 you are dealing with DOE on that DOE would say, this is too
22 small for us to accept and it's up to the finder to dispose
23 of it?

24 How -- I'm asking whether this MOU is going to
25 solve the problem of the small scrap person.

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1 DR. COOL: The MOU is not based so much on the
2 size of the source as a series of questions associated with
3 whether or not there are control mechanisms or mechanisms to
4 place it under control. I think you would probably find the
5 answer would be at least somewhat unsatisfying.

6 CHAIRMAN JACKSON: So the point is, why is there
7 not effort to address what happens on the ground, you know,
8 in terms of jurisdiction, who is going to take it, who is
9 going to do what? You know, why are you working on that MOU
10 that doesn't address those issues? Is there, you know, a
11 reason for that?

12 MS. CYR: Well, there is an authority question, I
13 think, in some circumstances. It is not clear what NRC's
14 authority is in all circumstances to take possession of
15 material.

16 CHAIRMAN JACKSON: No, no, no, I understand that.

17 MS. CYR: I mean, and DOE may be in the same
18 circumstance.

19 CHAIRMAN JACKSON: That's Commissioner
20 McGaffigan's point.

21 MS. CYR: I mean, they are working on an MOU in
22 the constraints of what has sort of been their traditional
23 operation in terms of where DOE is willing to take it.

24 COMMISSIONER MCGAFFIGAN: The point I'm trying to
25 make really, and I think it came up earlier, if there are

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1 authority issues either for us or DOE and therefore
2 legislation required, I think that has to be identified as
3 an option so that just we and DOE or EPA, whoever is
4 involved, we get the authorities clear in statute and then
5 maybe the problem gets a little easier.

6 But at the moment, writing MOUs to limited

7 authorities, my fear is you will expend a lot of energy and
8 not have actually produced a satisfying result, which I
9 think is the word you were using just a moment ago,
10 Dr. Cool.

11 COMMISSIONER DICUS: One more thing --

12 MS. CYR: That's not to say there's not value in
13 clarifying those circumstances in which you can at least get
14 that much done. I mean, there may be additional efforts
15 that need to be undertaken.

16 COMMISSIONER DICUS: I just -- I think it's the
17 last comment on this slide.

18 CHAIRMAN JACKSON: Oh, my god.

19 [Laughter.]

20 COMMISSIONER DICUS: Well, we have 11 more
21 minutes.

22 I hear a lot, you know, and we've said it, a lot
23 of comments about the bureaucracy and they're important and
24 we do have some legal issues to get over. But let's not
25 lose sight of the fact that we have to protect the public's

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1 health and safety and we have got to cut through the
2 bureaucracy to be sure we do that, in the final analysis.

3 MR. THOMPSON: And I think that is, in case, what
4 happens. In fact, often we will show up, even though EPA is
5 the nominal lead for those activities, and work with the
6 state and used to -- NRC, I think, used to be much more
7 proactive on unidentified sources. EPA called us and said,
8 you have no authority, you know, we will be the responding
9 authority for unidentified sources, and that goes back to
10 the issue on the authority where that has really been an
11 impediment at times.

12 MR. CONGEL: Could I add just a little? I believe
13 the issue is primarily most difficult when it comes to the
14 actual cleanup in getting rid of the source. I want to
15 emphasize that we have been involved with a number of
16 significant events ranging from spills of tritium to sources
17 in the environment and we have never had any difficulty in
18 getting cooperation from the other federal agencies,
19 particularly DOE and EPA and DOT if it's a transportation
20 device -- or accident, rather, when it involves the public
21 health and safety.

22 The difficult part comes afterwards when the
23 situation is stabilized and then we try to find out who is
24 going to be responsible or who can take care of the cleanup
25 or disposal. Then we get into the issues that we're talking

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1 about. But there have been a number of remarks made here
2 that say, well, while they sort out who the responsibility
3 is, I would like to make it clear that that never, during my
4 experience --

5 CHAIRMAN JACKSON: In the imminent phase, it's not
6 a problem.

7 MR. CONGEL: It's not a problem. There's an
8 enormous amount of cooperation and I think Hugh was actually
9 getting at it.

10 I, really, and the other agents don't care whether
11 it's identified, unidentified, licensed or not. Let's make
12 sure that we have the public health and safety first.

13 I have never had a difficulty with that and
14 they're not even the stereotype Washingtonian bureaucrats
15 saying, well, you know, that's yours. No. DOE provides rap
16 teams, any capabilities that we ask for, very quickly. But
17 the next step is -- so I just want to make sure we focus on

18 what I really think is the issue but not the first step.
19 CHAIRMAN JACKSON: I think it strikes me from what
20 you have already said that there needs to be some
21 clarification in two baskets. One has to do with just what
22 is the MOU meant to clarify and cover and provide that
23 information for the Commission. But more importantly or as
24 importantly is to then clarify, you know, in a follow on
25 way, you know, where the problems are that relate to what

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1 we've been discussing here in terms of interagency
2 jurisdiction, et cetera. And what, in your best judgment
3 needs to happen in order to bring clarity to it, if it's
4 legislation or if it's just further negotiation between the
5 agencies or whatever.

6 We need to understand that because, to have this
7 discussion in a vacuum, risks making us as frustrated as
8 some of the other people who, you know, we've already heard
9 from because it doesn't help us in terms of decisionmaking.

10 MR. THOMPSON: Right.

11 CHAIRMAN JACKSON: Okay, why don't you go on.

12 DR. COOL: Okay, slide five. We will talk briefly
13 about the risk assessment that my group has undertaken.
14 This is a fundamental reexamination of the activities
15 conducted in byproduct material, that is, Parts 30 through
16 39 of the Code of Federal Regulations. It includes these
17 kinds of devices. Radiography, well logging, irradiators,
18 all of those kinds of activities.

19 I have asked the group to step back, look at the
20 various kinds of systems, you could put that in quote, or
21 radiography is a system. They have identified something on
22 the order of 40 or so systems, gauging devices being a
23 system. I asked them to take a look at that in terms of a
24 number of risks, doses to members of the public, doses to
25 workers, doses under accidental conditions, doses on it

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1 getting out somewhere and some consideration of what, for
2 lack of a better way to place it, is the outrage factor.
3 That is, if something actually happens with that device,
4 what is the reactivity level that either the NRC or the
5 federal family or the states then use in terms of trying to
6 deal with those devices and the situations that occur in the
7 environment.

8 There is a fair amount of actual data which is out
9 there because these devices have been used over a long
10 period of time. Asked them to take a look at that, the
11 various data that is in our NMED, Nuclear Materials Event
12 Database, and other databases, to use quantitative criteria.
13 Some probabilistic risk assessment or similar sorts of
14 methodologies which have been done for certain kinds of
15 systems, not completely in the way that you would expect a
16 reactor situation to be. And qualitatively in terms of
17 other kinds of processes and examinations.

18 I have asked them to have that process completed
19 by the end of this fiscal year and my expectation would be
20 that then come next fall we would be able to provide for you
21 the results of that and some potential recommendations about
22 whether or not there would -- this analysis suggests changes
23 to the kinds of touches that we do, the kind of license,
24 piece of paper or registration or other type of program, the
25 kinds of things that you do in terms of inspection and

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1 followup and the system as a whole.

2 CHAIRMAN JACKSON: How does this play into the
3 options that you have laid out in the paper before the

4 Commission?

5 DR. COOL: This plays out as being the
6 recommendations or specifically moving and starting to lay
7 the basis of a registration program is to lay the framework
8 for that which I believe will be a bin that the risk
9 assessment will suggest a number of things, including a
10 number of things that are now specifically licensed might
11 well fall into. Because if the fundamental issue is
12 accountability, and that will certainly be the case if it is
13 a gauging device and is specifically licensed.

14 If that is the appropriate approach for dealing
15 with that kind of material and accountability is a key or
16 the major component in dealing with the risk, then perhaps
17 it ought to be in that bin and this would lay the framework
18 and, if we were moving forward in rulemaking, would already
19 be underway in terms of developing and establishing that bin
20 into which we could in some organized manner add other
21 groups.

22 CHAIRMAN JACKSON: Have you got a comment?

23 COMMISSIONER DICUS: On this risk assessment, and
24 I've got, I think, maybe three questions, quick ones, on it.
25 I'll ask them now. If you want to wait and answer them a

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1 few slides on --

2 CHAIRMAN JACKSON: Why don't you go ahead.

3 COMMISSIONER DICUS: The questions are, during the
4 risk assessment, and I am talking about now only on
5 generally licensed devices, this aspect we have under
6 discussion at the moment, our definition of risk in the
7 agency is a probability times a consequence. How are you
8 getting a handle on consequence for the generally licensed
9 devices?

10 And prefacing, before you answer, I don't know
11 that we know what all the consequences are. How are you
12 going to deal with risk when part of the formula may be
13 missing?

14 DR. COOL: Through a combination of modeling and
15 the events that have been seen. We are taking the fact that
16 there have been smeltings of material. I am asking them to
17 take a look at and try to model, and this is kind of a
18 deterministic worst case approach, because there is not a
19 good way to do some maybe perhaps more satisfying or more
20 accurate consequence of doses to individuals if you shred it
21 and if it got out into the domain.

22 So it is a combination of using actuarial and
23 experienced data where that is available along with
24 deterministic or modeled kinds of approaches where that
25 isn't available.

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1 COMMISSIONER DICUS: Okay, and what are the
2 complications, particularly when a source is in the public
3 domain? In some cases, I think in one case a source was
4 found in some gravel with no idea how long it had been
5 there, no idea how many people may have walked by, been
6 involved, or even how it got there and how many people might
7 have been exposed. So there is this tremendous unknown. It
8 makes it very difficult to do this and where we simply have
9 to walk into it knowing this.

10 The second part, the second question is, our
11 database is incomplete. I am using the nice word. It is,
12 in fact, flawed. And the data we have may represent a
13 fraction of what has happened. How are you going to deal
14 with that.

15 DR. COOL: And the answer to the first question
16 is, yes, I agree with you. There is an enormous
17 uncertainty. There is no mathematical construct other than
18 to try and at least set boundaries on worst cases and
19 otherwise to try and deal with that.
20 The answer to the second case, yes, the database
21 is undoubtedly flawed. There have been other things that
22 have undoubtedly happened. The number of occurrences, while
23 that may change probabilities to some extent, may or may not
24 change the range of uncertainty that you have in terms of
25 the potential consequences.

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1 CHAIRMAN JACKSON: If you're looking at
2 consequences, are you looking at worker protection?
3 DR. COOL: Workers, members of the public,
4 routine, accidental --
5 CHAIRMAN JACKSON: And are you looking at
6 environmental contamination?
7 DR. COOL: And environmental issues, the material
8 gets outside of the facility.
9 COMMISSIONER DICUS: And then are --
10 DR. COOL: I have asked them to consider all of
11 those.
12 COMMISSIONER DICUS: Are you looking at protection
13 of property?
14 DR. COOL: I have asked them to specifically look
15 at that, which goes above and beyond the kinds of analysis
16 we've done previously; that's correct.
17 CHAIRMAN JACKSON: Commissioner McGaffigan?
18 COMMISSIONER MCGAFFIGAN: Protection of property,
19 economic consequences, the melt that occurs and having to
20 deal with all the carloads of material that sit outside
21 these steel mills. Is that a consequence you are looking
22 at?
23 DR. COOL: Yes, sir.
24 CHAIRMAN JACKSON: Okay. Why don't you move on.
25 DR. COOL: The next slide, which would be slide

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1 six, is something that we have presented previously.
2 Under NRC jurisdiction in the generally licensed
3 device realm, there are close to 500,000 devices. As you
4 can see, nearly three-quarters of those constitute tritium
5 exit signs and a variety of other percentages, just by way
6 of background.
7 If I can go ahead and go to the next slide --
8 CHAIRMAN JACKSON: From a radiological standpoint,
9 what is the largest activity source here or category source?
10 DR. COOL: you're going to find the largest
11 activity devices in that piece of the pie that says fixed
12 and portable gauges. There may be a few sitting over in the
13 other category.
14 The exit signs will have fairly high numbers in
15 terms of Curies of tritium but, radiologically speaking, the
16 dose that can be delivered, that does not have the same
17 consequence as the cesium devices.
18 CHAIRMAN JACKSON: Okay.
19 DR. COOL: Go ahead to slide seven.
20 I have tried to lay out schematically where we
21 would be in this process. I think perhaps it is intuitive,
22 obvious, but it is sort of interesting to look at it in the
23 event tree, fault tree kind of format where presuming you've
24 got it under control and then potential for losing it,
25 whether or not it gets in or out of the public domain or

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1 whether it is continuing to sit in the facility. Does it
2 get in the scrap stream or get buried or some other
3 consequence? Is it detected? Does that second safety net
4 that Dr. Lipoti referred to catch it or not?

5 You have already heard the quoting of a lot of
6 statistics on some of these end points in terms of number
7 detections and number of melts.

8 A registration program, the kinds of things that
9 everyone has been discussing here, is influencing the
10 percentages you would put on that very first branch.
11 Whether or not they have it accounted for and know where it
12 is or not, that's where all of the influence of this
13 particular program goes into in terms of that very first
14 piece of the process.

15 CHAIRMAN JACKSON: Yes.

16 COMMISSIONER DICUS: On this chart, I think you
17 have an event tree missing and that is what about loss of
18 source integrity before smelting? And that has happened
19 once.

20 DR. COOL: Um-hum.

21 COMMISSIONER DICUS: I think you have to put that
22 in, in this event tree.

23 DR. COOL: That and, in fact, a number of others
24 if I wanted to get to a greater level of detail, I agree
25 with you.

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1 CHAIRMAN JACKSON: Well, I'm only assuming --

2 DR. COOL: This was for illustrative purposes to
3 indicate where registration influences the process.

4 COMMISSIONER DICUS: This is not the event tree --

5 DR. COOL: This is not the ultimate event tree.
6 It is not intended to be the ultimate event tree. You are
7 very right, there are lots of other things in there, lots of
8 other branches.

9 COMMISSIONER DICUS: Given that clarification, we
10 can go on.

11 DR. COOL: The current program, in fact, requires
12 a whole series of things. It requires the vendor to provide
13 the general licensee with a copy of the regulations. The
14 regulations require testing, reporting, some recordkeeping.
15 Vendors are required to notify the NRC of the distribution
16 of their devices in answer to the question which
17 Commissioner McGaffigan asked.

18 Furthermore, general licensees are supposed to be
19 reporting transfers and disposal of their devices. They are
20 not charged fees and we don't ever interact with them except
21 under a circumstance where something has shown up and we are
22 backtracking. So we are in event response mode.

23 Based on the information which comes into and is
24 recorded in my general license database, we in fact have a
25 database which we put in all of the reports from the vendors

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1 and those reports which we receive of transfers. It's
2 fairly apparent to me that we are not getting all the
3 transfers and otherwise because of the number of reports
4 that we get from the user saying I have transferred this or
5 that is a very small number. We get some but it clearly
6 does not match up with, I would believe, a priori, are the
7 things going on out there.

8 Nevertheless, that database does exist and, in
9 fact, has on a number of occasions proved very useful in
10 terms of backtracking. One of the cases on point, which I
11 think at least some of you are probably familiar familiar

12 with, was in fact the shredding of an americium source and
13 DOE was very useful, picked up the source, took it down and
14 found the serial number. We were able to back track through
15 the manufacturer and the general license database to the
16 licensee.

17 CHAIRMAN JACKSON: Is there an enforcement
18 mechanism to use against the general -- general licensees
19 who fail to properly transfer or dispose of their devices?

20 DR. COOL: There is. And, in fact, the case I
21 just cited is in that process right now.

22 CHAIRMAN JACKSON: Yes?

23 COMMISSIONER DICUS: On this database that may be
24 a little flawed but do we ever review it for indications of
25 program trends and weaknesses beyond what you've just

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1 discussed?

2 MR. CONGEL: We are in the process of updating
3 that. I was going to say something a few minutes ago when
4 you mentioned it but Don kindly answered for me.

5 But the program itself is still in an evolutionary
6 stage and we are still probably, I would say, about five
7 years into a very strong updating and improvement ranging
8 from incorporating in a better way the agreement states'
9 information to working with our counterparts in Carl's
10 office for a better quality assurance and quality control of
11 the data.

12 CHAIRMAN JACKSON: It took you five years into --

13 MR. CONGEL: I certainly didn't want that to sound
14 like -- maybe it's Washington-itis again. But it was about
15 five years ago that I would say there was increased
16 attention being paid on it. And there have been a number of
17 subsequent and consecutive improvements and feedbacks on
18 this database.

19 COMMISSIONER DICUS: But it's still a troublesome
20 area?

21 MR. CONGEL: There's parts of it where we're
22 learning and, indeed, we have had our exchanges of info.

23 CHAIRMAN JACKSON: Commissioner McGaffigan?

24 COMMISSIONER MCGAFFIGAN: Could you use this to do
25 what Mr. Mattia proposed, to send off to the -- not all the

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1 tritium sites but the 48,000 gauge folks that were in that
2 previous chart, send off a letter saying, do you have the
3 device still? Is it up to that?

4 MR. CONGEL: Imperfect and yes. It would in fact
5 be the base line upon which we would start this process.

6 And, in fact, there was a survey that was
7 conducted back some --

8 MR. LUBINSKY: 1989-1990 time frame.

9 MR. CONGEL: Which resulted in some significant
10 adjustments, some information that was found. You could
11 start that process. There are pros and cons to surveys.

12 You go through the OMB clearance process and
13 certainly that could be done. Part of the process is if you
14 were doing that with the explicit intent of moving into a
15 registration program, you would in fact be engaging in an
16 activity which the General Counsel, at least at this point,
17 has indicated to me would be de facto a registration program
18 and which I really should have done rulemaking for prior
19 to --

20 MS. CYR: As long as you're doing a one-time
21 survey. And you also have a proposed rule on the street
22 that constitutes a registration program and I think you've
23 got to discuss how that differs from whatever you might be

24 proposing otherwise, too.

25 There was a rule proposed in 1991 to create a

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1 registration program which was never finalized. But it is
2 still out on the street as a proposed rule.

3 CHAIRMAN JACKSON: Fascinating.

4 MS. CYR: It does not cover fees, which is a big
5 issue, and it specifically said it would not address the fee
6 issue. But you need to sort of, I think --

7 CHAIRMAN JACKSON: Thank you.

8 Now, how does that -- what is the story there with
9 that rule and how does that play against your options that
10 you've laid out in this paper?

11 DR. COOL: Thank you for jumping me head about
12 three pages.

13 To quickly answer your question, in fact, one of
14 the alternatives that we have been exploring is the extent
15 to which the revival and, perhaps, publication of a piece of
16 that rule which has already been proposed would move more
17 quickly than the base line which was laid on this paper of a
18 rulemaking package.

19 That rule did, in fact, propose a requirement
20 which would have allowed us to go and do a registration
21 program. That rule did not get to some of the technical
22 issues such as labeling or fees or some of these other
23 things. So it is not a one-to-one match with that which the
24 working group has recommended and otherwise but may, in
25 fact, be a mechanism.

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1 We are having a long chat with Stu Treby now.

2 CHAIRMAN JACKSON: It's not in the paper we have
3 before us.

4 DR. COOL: That's correct.

5 MS. CYR: It was proposed to register everybody, I
6 think, wasn't it?

7 DR. COOL: It was a proposal to register all
8 devices.

9 MR. THOMPSON: That, again, was one of the rules
10 held in abeyance because of the resource levels to implement
11 such a rule and there, again, comes the tension that we've
12 had in agencies where we have declining resources, we had
13 looked to the areas that had the highest risk to public
14 health and safety, not we -- we were not focused on
15 protecting property at that time and therefore that
16 rulemaking has been held in abeyance since then to do the
17 working group study and other things with the appropriate
18 risk focus on it.

19 CHAIRMAN JACKSON: Yes, Commissioner.

20 COMMISSIONER DICUS: You heard the industry say
21 that there may be a greater role for vendors and their
22 responsibilities. Do you have any comments on that?

23 DR. COOL: One of the things we looked at very
24 hard was whether you could do this by placing that burden on
25 the vendor. There are certainly some pros in terms of not

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1 needing as resource intensive program here. There are also
2 some cons in terms of placing the vendor essentially in
3 double jeopardy of having to report on that to whom he is
4 also trying to sell some other jurisdictional issues.

5 The working group, in fact, during their
6 discussions, examined that particular issue and the working
7 group also concluded that that was not the most favored
8 approach. But, yes, we have looked at that. One of the

9 other alternatives was that but there were some significant
10 cons to placing it all out there.

11 CHAIRMAN JACKSON: Commissioner McGaffigan and
12 then we're going to move on.

13 COMMISSIONER MCGAFFIGAN: Two very quick
14 questions.

15 The 1991 rulemaking, did it come out of this '89-
16 '90 survey that you mentioned? Is there a history there
17 where you did a survey, you discovered a problem and then
18 you started a rulemaking that we never finished?

19 MR. LUBINSKY: As Don was saying, we have been
20 looking at this a long time and that was part of it. There
21 was a survey and there were studies performed that said,
22 let's go forward with this rulemaking. A lot of the
23 estimates on resource requirements as far as to follow up on
24 licensees who do not respond were initially based on that
25 1990 survey. It included about 3,000 general licensees and

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1 it was a voluntary survey. It was not a mandatory survey.

2 That started the rulemaking process or helped
3 support the rulemaking process in '91 and also since we're
4 going through the history, after the rulemaking was put on
5 hold in '93, the Commission came back to us and said, you
6 put the rule on hold and what are you going to do now.

7 That was when we came back and put the work group
8 together to look at this from a national perspective and the
9 basis for the registration was based on a lot of the same
10 detail in that initial rule.

11 COMMISSIONER MCGAFFIGAN: And then this issue of
12 labeling that comes up in the working group report and you
13 say you agree with and all that. I'm looking at danger of
14 putting the rules in front of a commissioner here but 3251
15 says at the moment each device bears a durable, legible,
16 clearly visible label or labels approved by the Commission
17 which contain a clearly identified and separate statement,
18 et cetera.

19 Why is that not enough to make sure that these
20 devices are today, you know, couldn't we by reg guide or
21 something say what we mean by --

22 CHAIRMAN JACKSON: Have we been implementing this?

23 COMMISSIONER MCGAFFIGAN: Clearly visible, it's
24 durable. Durable means it's got to be etched or whatever?

25 MR. LUBINSKY: We have been interpreting the word

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1 "durable" the same way we have looked at the criteria for
2 doses in 3251. That is, durable during the normal and
3 likely conditions that you will see during use and likely
4 accident conditions.

5 Of course, during the explosion, you would not
6 expect any labeling to survive. But as part of that, it did
7 not look at what happens when this gets into the public
8 domain because that is not an expected condition or was not
9 an expected condition for this rulemaking.

10 CHAIRMAN JACKSON: At that time.

11 MR. LUBINSKY: So therefore durable and legible
12 would be during normal use. If it's used in a laboratory
13 facility where it sits on a tabletop all day, you're not
14 talking about etching or embossing labeling for it to meet
15 20 years' of use in that type of environment.

16 CHAIRMAN JACKSON: I think we need to just go on.

17 COMMISSIONER MCGAFFIGAN: Would it be a new rule
18 to go back and clarify, in light of what we learned, durable
19 now should be interpreted as follows? Or does that require
20 a rulemaking or does that require just a statement?

21 CHAIRMAN JACKSON: Maybe Karen can answer that.
22 MS. CYR: I think it probably would require -- we
23 would have to look exactly at what you're trying to do but I
24 think you really are probably changing the basis under which
25 your rule was adopted and you probably would have to go

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1 through some kind of a notice and comment period.

2 CHAIRMAN JACKSON: I think I am going to dictate
3 that the last slides be gone through without any questions
4 so we can come back.

5 DR. COOL: And then we'll come back and do it in
6 one fell swoop.

7 The next slide on the registration program is up
8 on the screen. An ideal registration program which is the
9 basis of the staff's recommendation would still be a process
10 by which the requirements would be in the regulations.
11 There would be some additional requirements. We would go
12 back and look at some of the durability issues, probably
13 specifically require serial numbers and other things to be
14 part of that so you could have a better tracking if you
15 found it. A number of those sorts of things.

16 The process would require that the licensee
17 register the device with the NRC and that there would be an
18 annual touch which would include both an accountability, we
19 believe you have X number of devices. Come back to me and
20 say, yes, we also have X number of devices, we have touched
21 and inventoried them on a quarterly, monthly basis which
22 would have to be specified in the regulations, we have seen
23 them, they are labeled, the labels are present and clearly
24 visible, intact, the sorts of things that are required
25 there, and the submission of the fee.

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1 To get to one of the questions and, I hope, read
2 your mind perhaps, at least a little bit, I was not terribly
3 happy with the cost either but it is driven by your
4 assumptions about how far and how many you are going to
5 chase in the initial years of the program. Our assumption
6 is that we would be trying to follow up on roughly 15
7 percent and went through and did the mathematics associated
8 with that. It has the overhead built in, which is used by
9 the comptroller's office in terms of dealing with the fee
10 billing applications and at least some measure of where you
11 might be in terms of allocation, enforcement and other sorts
12 of management activities if you assumed after a few years of
13 this you had it settled down that you were maybe doing only,
14 say, two or three percent that you were having to do follow
15 up and you then looked at the resource that would be needed
16 to do that, you would find that the price would be something
17 on the order of \$200.

18 It scales very much to the kind of resource needed
19 to do the initial file -- followup and accountability with
20 those devices which, obviously, will be the greatest during
21 the first year or two of conduct. That's why you have a
22 number which is disparate from the kind of numbers that you
23 see in the states which have been running programs which
24 have, for the most part, gotten over that hurdle.

25 The process would, in ideal circumstances, be

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1 following up, are you still there, do you still have them,
2 where did it go. For perhaps some of them, contractor
3 support in terms of skip trace, you're not there, those
4 sorts of things.

5 Next slide, please.

6 In terms of the startup activities, the rulemaking
7 in order to get that process into place and the coordination
8 with the states and the upgrade and development of the
9 automated system, the computer system necessary to support
10 this. The general license database is an old mainframe
11 system, not terribly useful but a good starting point upon
12 which we would then generate those. That's more or less a
13 fixed cost without regard to necessarily specifically the
14 kinds of licensees you would be touching.

15 We can go ahead to the next slide on
16 implementation activities then.

17 You do the registration. Once you had the
18 rulemaking in place, you could run the actual letters, send
19 them out, get it back, entered into the database on a --
20 what I have listed on the slide as a scale factor, about a
21 third of an FTE and \$67,000 or so per thousand. So figure
22 out the number of licensees you want to touch and that's
23 roughly the cost. The dollars associated with probably a
24 contractor doing a lot of the maintenance and running of the
25 computer system rather than having my staff people doing all

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1 of that input itself.

2 And then the followup activities in terms of going
3 out, resolving discrepancies, doing reactive inspections on
4 the order of 1.5 FTEs per thousand licensees that are out
5 there. Again, somewhat of a scaling factor.

6 The paper provided alternatives based on the
7 resources available that are within the operating plan and
8 budget which I presently have to do the job right, that is
9 to touch them and do the followup would mean that we could
10 get those licensees who have cesium on the order of 500
11 millicuries or more. If you didn't want to do the job
12 right, you could for the same resource touch a larger
13 quantity in terms of mailing it out and getting it back.

14 I think you have heard from a number of folks and
15 I think I would agree that that is not a preferred approach.
16 It doesn't go all the way down the line; it stops half way.

17 From there, alternative three is an alternative
18 which picks up the other cesium devices that were in the
19 working group report. What we have tried to do is provide
20 you with a unit cost factor such that if we wanted to go
21 with yet further resources and touch all of the devices that
22 were in the working group recommendation, you could go
23 through and very quickly do that. That would be on the
24 order of eight or nine FTEs and associated dollars
25 multiplied out on a per licensee basis. The working group

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1 recommendations would encompass something on the order of
2 6,000 licensees and on the order of 25 or so thousand
3 devices.

4 With that, I'm done with the presentation and
5 would be glad to try and answer some additional questions.

6 CHAIRMAN JACKSON: Let me ask you a couple of
7 questions.

8 Are there currently specific licensees who are not
9 physically inspected?

10 DR. COOL: No, but some of them have inspection
11 frequencies of five to seven years.

12 CHAIRMAN JACKSON: Okay. So, de facto?

13 DR. COOL: De facto, they are not touched for
14 relatively long periods of time.

15 CHAIRMAN JACKSON: If that's the case, would they
16 be candidates for registration program, also?

17 DR. COOL: I personally believe that they would

18 be, without pre-jumping my registration program. Those are
19 the kind of folks that sort of look and smell like a lot of
20 these kinds of devices and, a priori, if this is the right
21 kind of approach for them, what's good for the goose should
22 also be good for the ganders.

23 CHAIRMAN JACKSON: And you mentioned the startup
24 costs in terms of registration, automated registration
25 system. Since there are automated registration systems that

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1 currently exist in several states, is there an opportunity
2 to go the other way, to scale up, you know, their systems
3 for use by the NRC and could that afford us some time saving
4 and cost saving?

5 DR. COOL: Perhaps. The fact that we have a
6 database sort of indicated to us that scaling up and
7 bringing that existing database into the client server
8 system of the Agency was perhaps yet the quickest system
9 because that data already exists and if you matched fields
10 you could --

11 CHAIRMAN JACKSON: But did you look at it? Did
12 you look at it, that possibility?

13 DR. COOL: I don't know that the group explicitly
14 looked at trying to buy one of the existing state systems.

15 MR. LUBINSKY: During the working group we talked
16 about that possibility. The one concern there was that most
17 of the states were dealing with a smaller number of
18 licensees and devices. We're talking about on the order of
19 500,000 devices, so you're talking about a large number of
20 records. Where the states were dealing with much smaller
21 databases.

22 CHAIRMAN JACKSON: I agree. But that's separate
23 than an actual examination of what they have to look at
24 whether there is some scalability.

25 MR. LUBINSKY: While the examination was looking

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1 at the scalability from the work -- this was during the
2 working group. It wasn't believed that we could actually
3 just scale those up because of the life cycle requirements
4 that we're looking at within our C-type systems and by the
5 time we finish going through building that system up to what
6 we really need, it would be more cost effective to convert
7 the general license database over to a client server system.

8 CHAIRMAN JACKSON: Did you actually go through
9 developing user requirements for the use to which -- for the
10 kind of database system and automated registration system
11 that we would need?

12 MR. LUBINSKY: We are going through now and we
13 have developed a draft statement of work for what the
14 requirements would be for the new system and that would be
15 more from an efficiency standpoint of performing the
16 mailings and collecting the data and updating the system.

17 CHAIRMAN JACKSON: So I would argue to you that
18 until you have developed those user requirements and then
19 you've in fact template overlaid them to what states, say
20 look at the larger states, have, you really can't answer the
21 question of whether or not the system is sufficient?

22 DR. COOL: Not completely. Correct.

23 MR. THOMPSON: That's correct and, Chairman, also
24 we would certainly coordinate with the CIO because there may
25 be other commercial off-the-shelf products.

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1 CHAIRMAN JACKSON: That was going to be my next
2 piece. Exactly.

3 And then for the last question I have, if I look
4 at alternative two, there doesn't appear to be any incentive
5 for general licensees under that alternative to register.
6 Is there some hidden incentive, such as the threat of
7 enforcement action, against those who don't register if
8 devices are found as a result of incidents?

9 DR. COOL: As we mentioned, I thought in the
10 paper, part of what we would be looking at would be
11 enforcement alternatives, potential incentives which would
12 apply, irrespective of whether you were trying to do a
13 complete followup or the incomplete followup.

14 CHAIRMAN JACKSON: You may have mentioned it in
15 the paper but you didn't mention it this afternoon.

16 DR. COOL: I'm sorry.

17 In fact, one of the things that we have discussed,
18 in fact in fairly great depth, with Jim Lieberman, Director
19 of Office of Enforcement, is the kind of approaches we could
20 take and the possibilities of automating or simplifying an
21 enforcement process to minimize our resources to take
22 specific actions. And, in an incentive basis, whether or
23 not we would wish to defer enforcement if they were
24 cooperating with us and gaining accountability. Almost
25 perhaps an amnesty program for the first year or two to try

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1 to get them captured before bringing in the penalties which
2 would make it somewhat of an incentive to get the job done
3 now and get them captured, as opposed to us find you a
4 couple of years down the road.

5 CHAIRMAN JACKSON: Okay, Commissioner Dicus.

6 COMMISSIONER DICUS: You have answered most of my
7 questions so I have very few more. More in the form of
8 comments.

9 One thing, you addressed it in your oral
10 presentation, it was not in the paper, the fact that
11 starting up the program and initially going out to find
12 where there are problem areas will be a spike FTE load but
13 that should go down. And that was not reflected in the
14 paper which caused us some concern.

15 I don't agree with your cutoff of what sources,
16 devices should be looked at in terms of the Curie content.
17 I think it should be on a broader basis and I think you have
18 heard significant reasons why today that I feel that way and
19 perhaps others as well.

20 That's not to say, with all the questions and
21 comments we've had on the product that we got and had to
22 review, that I don't appreciate the work that's been done
23 and I want the staff to recognize that. I think from my
24 perspective I think the work has been too limited in its
25 scope and what was considered important and perhaps some of

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1 the bases used for your analysis or your points to get from
2 A to B might not have been as appropriate to use or as clear
3 or as well founded as they should have been and I have
4 several recommendations or comments. You will probably see
5 those when the vote on this issue, when my vote on this
6 issue surfaces.

7 Just let me say that I think in the reactor side
8 of the house, we have a very aggressive regulatory program
9 and, certainly, on the materials side of the house we have
10 areas that we have aggressive regulatory programs but I
11 think we have areas where our regulatory program is not as
12 aggressive and perhaps not as effective as it should be.
13 And clearly from the data that we have documented, the
14 places where members of the public or even radiation workers

15 are more likely to receive an unnecessary or even
16 overexposure of radiation is in the materials side of the
17 house and not in the reactor side of the house.

18 I am not saying necessarily that, gee, we don't
19 have to worry about reactors; certainly we do. But
20 materials safety in my view is certainly no less important
21 than reactor safety and I think the Commission's regulatory
22 actions should reflect this and I think perhaps you've heard
23 that today.

24 That's all I have.

25 CHAIRMAN JACKSON: Commissioner Diaz?

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1 COMMISSIONER DIAZ: Yes, I think what I needed to
2 say has mostly been said by Commissioner Dicus.

3 I would like to, you know, hammer on it. I think
4 when I came here, it seems like a long time ago, one of the
5 very first things that we had was a meeting on these issues.
6 At the time, I was full of innocence. Now I am full of
7 scars. And what I have not seen in that time is that this
8 issue has progressed with the same speed and the same due
9 consideration to the difference on public risk that I think
10 it has.

11 I believe we do great work when we have localized
12 sources and try to become risk informed. Distributed
13 sources are a completely different issue and it is kind of
14 tentative or not really fully accountable to be risk based,
15 I think. I think risk informed will still leave us room to
16 make determinations that propose a much more aggressive
17 program. I think this is a case which is obviously needed
18 and I would recommend that the staff stops for at least a
19 brief period of time being totally concerned with resources.

20 We would like to hear, at least I would like to
21 hear, the best of the stuff and then allow the Commission to
22 look at the resource issue because I think this has been
23 here too long. It is an issue that can be better managed
24 and it requires a very aggressive program and my vote will
25 reflect that.

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1 CHAIRMAN JACKSON: Commissioner McGaffigan.

2 COMMISSIONER MCGAFFIGAN: A couple of questions.

3 The staff, on this issue of penalties for lost
4 devices, in the paper it basically agrees. But then it
5 says, for specific licensees, we will consider increasing
6 the civil penalties. How quickly is that consideration
7 going to be done and do you agree with the numbers in the
8 working group report with regard to how much they need to be
9 ramped up to actually be a deterrent?

10 DR. COOL: I changed to the enforcement policy and
11 I suspect that Mr. Lieberman is somewhere in the audience
12 and might be able to answer this a little more quickly.
13 Could probably move fairly quickly.

14 The numbers in terms of having the penalties more
15 accurately correspond to or have some measure of
16 correspondence to the costs of disposing the device, I
17 think, are reasonable kinds of numbers to approach. There
18 were some things thrown out today that we would have to go
19 back and think about in terms of where those penalties
20 resided that were suggested by some other folks and while I
21 personally as an individual liked the idea of having a use
22 for those within the agency in terms of funding, I think the
23 general counsel has already indicated present legislation
24 doesn't allow me to.

25 COMMISSIONER MCGAFFIGAN: I'm not trying to get

1 into that point.

2 The second point is generally licensed devices.
3 Here you say we won't do it until we get around to the
4 implementation of the registration program because we have
5 to notify general licensees that it may be coming. Why? Is
6 that -- why couldn't we do it faster rather than wait
7 potentially to 2000 or 2001 to tell the generally licensed
8 folks we're going to hold you -- you mentioned the case
9 earlier where we are indeed fining somebody the small fine
10 for having lost control of their devices and they ended up
11 being shredded. But why can't we -- why can't we put a
12 notice out sooner that we're going to take this seriously
13 and here are the fines that may accrue to you as a general
14 licensee?

15 MR. THOMPSON: I don't believe there is a reason
16 we can't do that. We'll have to work with the general
17 counsel and go through the process --

18 MS. CYR: Right. I mean, the requirements are
19 that they're supposed to notify you if they transfer it and
20 an obligation to dispose of it. I think that there are ways
21 within the existing framework even without new rules that
22 there would be some basis to take civil penalties. I think
23 what they were focusing on here was to the extent there was
24 a failure to register a followup in that circumstance until
25 you run through, that was what you were trying to penalize,

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1 you would have to wait until you had a --

2 COMMISSIONER MCGAFFIGAN: But right now, it's
3 not -- I'm not sure what the rule requirement is but we
4 don't like people losing control even of generally licensed
5 devices. We don't like them ending up in the wrong place.

6 The final issue and I'll try to be short, the fee
7 issue. Right now, you're spending, between research and
8 NMSS, some amount of money in this area, a million, million-
9 and-a-half a year --

10 MR. THOMPSON: No --

11 COMMISSIONER MCGAFFIGAN: Including research and
12 FTEs and everything?

13 MR. THOMPSON: I think we're closer to one FTE.
14 Consistent with what we got in the budget, it's about one
15 FTE and we found about \$300,000, so that --

16 COMMISSIONER MCGAFFIGAN: And is that partly
17 driven by this question of equity? I mean, at the moment,
18 there is no -- we don't have a registration program so there
19 is no general licensee to hit so it's the reactor folks or
20 whatever who end up paying -- gets into overhead and we
21 charge it to everybody.

22 Does that partly motivate why it's hard for the
23 staff to find the additional resources? And is this a
24 candidate if we ever did take some stuff out of the fee base
25 until 2001, when we have a mechanism to apply fees? Is this

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1 the sort --

2 MR. THOMPSON: I'll let Paul speak but I'll speak
3 first.

4 It was not a significant issue with me. What was
5 a significant issue with me was the impact on other programs
6 that we had when the FTE competition came in and NMSS was
7 held down and had other programs they had to do, they had to
8 do because they had to do licensing, they had to do some of
9 those activities.

10 It wasn't the fact that it was an issue of equity
11 on five or 10 FTEs worth of work. It was that we couldn't,

12 in the competition, we weren't able to argue at that time to
13 the Commission that this program was more important than
14 other programs.

15 CHAIRMAN JACKSON: I would like to thank each
16 participant who is still here for the information you have
17 provided to us in today's briefing. It is clear, as you
18 heard, that the time to address this issue is very much
19 overdue and it is my hope, because the ball is also in the
20 Commission's court at this time, that the Commission will
21 come to a decision that will address not only the very real
22 health and safety concerns related to the current lack of
23 control we are experiencing with these sources based on a
24 risk perspective, but also on the economic impact in an
25 environmental context that these lost devices are having on

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1 the unlicensed individuals or companies who inadvertently
2 come into possession. But it's one that has to be rooted in
3 our fiscal and legal realities and that's all part of our
4 decisionmaking.

5 But, in the meantime, I think it is important to
6 provide some clarity to the Commission on just what the MOU,
7 this interagency MOU, is meant to accomplish. But also
8 where there are issues that need to be addressed and perhaps
9 elevated or dealt with in the legislative arena.

10 And then also for the edification of the
11 Commission, I think it would be useful for us to understand
12 what the 1991 rule dealt with and what you plan to
13 potentially extract from that relative to the options that
14 are before us. If you could do that within a week, I would
15 appreciate it.

16 Thank you very much. We're adjourned.

17 [Whereupon, at 4:48 p.m., the briefing was
18 concluded.]

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