ORIGINAL ACNWT-0142

OFFICIAL TRANSCRIPT OF PROCEEDINGS

NUCLEAR REGULATORY COMMISSION

ADVISORY COMMITTEE ON NUCLEAR WASTE

Title: MEETING: 122TH ADVISORY COMMITTEE ON NUCLEAR WASTE (ACNW)

PROCESS USING ADAMS
TEMPLATE: ACRS/ACNW-005

Work Order No.: NRC-1524

LOCATION: Rockville, MD

DATE: Thursday, October 19, 2000

PAGES: 209 - 267

ANN RILEY & ASSOCIATES, LTD.
1025 Connecticut Ave.,NW, Suite 1014
Washington, D.C. 20036
(202) 842-0034

ACNW OFFICE COPY - RETAIN FOR
THE LIFE OF THE COMMITTEE

TR08

DISCLAIMER

UNITED STATES NUCLEAR REGULATORY COMMISSION'S

ADVISORY COMMITTEE ON NUCLEAR WASTE

OCTOBER 19, 2000

The contents of this transcript of the proceeding of the United States Nuclear Regulatory Commission Advisory Committee on Nuclear Waste, taken on October 19, 2000, as reported herein, is a record of the discussions recorded at the meeting held on the above date.

This transcript had not been reviewed, corrected and edited and it may contain inaccuracies.

1 U.S. NUCLEAR REGULATORY COMMISSION

2 ***

3 ADVISORY COMMITTEE ON NUCLEAR WASTE

4 ***

5 122nd ACNW MEETING

6 ***

7 Room T2-B3

8

9 Two White Flint North

10 11545 Rockville Pike

11 Rockville, Maryland

12

13 Thursday, October 19, 2000

14 The Committee met, pursuant to notice, at 8:30

15 a.m.

16

17

18

19

20

21

22

23

24

25

1 MEMBERS PRESENT:
B. John Garrick, Chairman
2 George W. Hornberger, Vice Chairman
Raymond G. Wymer, ACNW Member
3 Milton N. Levenson, ACNW Member

4 ALSO PRESENT:
Amarjit Singh, ACRS/ACNW Staff
5 Howard J. Larson, ACRS/ACNW Staff
Lynn Deering, ACNW Staff
6 Richard K. Major, ACNW Staff
Martin J. Steindler, ACRS Consultant
7 William J. Hinze, ACRS Consultant
Paul G. Shewmon, ACRS Consultant
8 Maury Morgenstein, Geoscience Management Institute, Inc.
Don Shettel, Geoscience Management Institute, Inc.
9 Robert W. Staehle, Adjunct Professor, University of
Minnesota
10 Aaron Barkatt, Professor, Catholic University
April Pulvirenti, Catholic University
11 Geoffrey A. Gorman, Dominion Engineering, Inc.
Chuck Marks, Dominion Engineering, Inc.
12 Gustauvo Cragnolino, Center for Nuclear Waste
Stephanie Bush-Goddard, Office of Regulatory Analysis,
13 Nuclear Materials Safety and Safeguards, NRC
Jim Lieberman, Office of General Counsel, NRC
14 Paul Genoa, Nuclear Energy Institute
Michael Webb, Office of Nuclear Materials Safety and
15 Safeguards, NRC
Allen Howe, Office of Nuclear Materials Safety and
16 Safeguards, NRC
Bret Leslie, Office of Nuclear Materials Safety and
17 Safeguards, NRC
Tae Ahn, Office of Nuclear Materials Safety and Safeguards,
18 NRC
John T. Larkins, Executive Director, ACRS/ACNW
19 Andrew C. Campbell, ACRS Staff [via speakerphone]

20

21

22

23

24

25

1 P R O C E E D I N G S

2 [8:33 A.M.]

3 DR. GARRICK: Good morning. The meeting will now
4 come to order. This is the third day of the 122nd meeting
5 of the Advisory Committee on Nuclear Waste. The entire
6 committee meeting will be open to the public.
7 And today we're going to hear an information
8 briefing from NMSS on Staff progress on developing a more
9 risk-informed set of requirements for license and source
10 material. And we're going to continue preparation of our
11 ACNW reports.
12 Richard Major is the designated Federal official
13 for the initial portion of today's meeting, and this meeting
14 is being conducted in accordance with the provisions of the
15 Federal Advisory Committee Act. We have received no written
16 statements or requests to make oral statements from members
17 of the public regarding today's session, and if anyone
18 wishes to do so, please notify a member of the staff, and
19 please use a microphone and speak clearly.
20 Our topic today is Part 40 Low Level Waste Source
21 Material Improvement and Control of Regulated Source
22 Material. George Hornberger, committee member, will lead
23 the discussion and introduce the speaker.
24 DR. HORNBERGER: Thanks, John. This is -- to my
25 recollection, anyway -- the first time the ACNW has heard

1 about this material. I gather that Staff is looking at
2 potential problems related to regulation of the .05 percent
3 source material and risk-informing any regulation and they
4 are considering putting together a variety of options, and
5 they are in the middle of working on this. So we are going
6 to hear from Gary Comfort.
7 MR. COMFORT: Good morning. My name is Gary
8 Comfort. I am now working with the Rule-Making and Guidance
9 Branch of the Division of Industrial and Medical Nuclear
10 Safety.
11 Basically, the staff has suggested that we give
12 this presentation because of past, or recent concerns with
13 disposal of material under .05 percent and some of the
14 potential health impacts if it's not properly disposed of.
15 Also, it's come up with a variety of other
16 problems related to other exemptions for source material
17 that are specific to products and their disposal.
18 The presentation that I'm going to give is
19 information on what the staff has been doing. It will start
20 with the background of why we're doing this. Basically,
21 I'll present the recommendations that the staff provided the
22 commission in a recent commission paper in 1999, and then
23 give the staff, status of the staff's activities to date on
24 those issues.
25 The 10 C.F.R. Part 40 is the guiding regulations

1 for the use of source material. Within 10 C.F.R. Part 40 is
2 the definition of unimportant qualities. "Source Materials"
3 is defined as any uranium or thorium in any type of form or
4 that's in concentrations of greater than .05 percent of
5 uranium and thorium. This was developed back in the '40s
6 originally, with the Atomic Energy Act, primarily for the
7 basis of the strategic value of the material. The United
8 States wanted to protect and control the movement of that
9 material, to make sure this very important resource was made
10 available to the Government on need.
11 It wasn't really until the Atomic Energy Act of
12 1954 that even the statements regarding licensing for health
13 and safety reasons was even put in there. And since that
14 point, really, there haven't been any significant changes
15 from, in, in Part 40 outside of minor changes in 1961 to
16 Part 40 -- again, none of which were really directed toward
17 the health and safety impacts.
18 Basically, the Atomic Energy Act said that the
19 Commission could define an unimportant quantity of source
20 material that wouldn't require licensing. However, again,
21 we would be required, or the agency still regulated all the
22 source material. The Agency, in Part 40, defined an
23 unimportant quantity of source material as under .05 percent
24 by weight for uranium and thorium in general, not just that
25 in, you know, which was in conjunction with what the .05 ore

1 weight was put in the Atomic Energy Act.

2 We also provided in the unimportant quantity list
3 some specific exemptions, which are found in 40.13(b), which
4 is the statement that ores that are unprocessed can go ahead
5 and be used without, as an unimportant quantity. And then
6 in 40.13(c), there were a number of specific exemptions of
7 higher concentrations of source material that could be used
8 in products -- this like for glass refractories, count-, you
9 know, aircraft counter-weights, other topics like that, that
10 the Agency at the time felt were being used throughout the
11 industry, would not cause at least a problem to the
12 strategic value of the material in question.

13 Unfortunately, in recent years we've come into a
14 number of questions regarding the disposal of the material.
15 We've come into licensees who produce materials for other
16 than the content of the uranium and thorium, but they end up
17 concentrating the uranium and thorium, and you'll get
18 disposal streams that are around or right below the .05
19 percent, but very large quantities. Recent calculations on
20 those show that there can be situations where those, those
21 materials have been disposed improperly or used improperly,
22 could result in health impacts greater than those found in
23 the limits in Part 20.

24 Also, there was a draft NUREG 1717, which
25 evaluated the exemptions in both byproduct material and

1 source material, again finding that there are certain
2 circumstances, such as the use of thorium welding rods that
3 have a potential to result in doses above Part 20 limits.
4 Finally, the agreement states and the State of
5 Colorado recently put in a petition for rulemaking, which is
6 PRM-40-27, which requested the agency to reconsider the
7 exemption in 40-22, which is for general licenses that
8 exempts general licensees of source material from having to
9 meet the requirements of Parts 19, 20, and 21.
10 "General License" is defined as somebody who uses
11 up to 15 pounds of source material at one time, not
12 exceeding 150 pounds per year.
13 And as I discuss, there's a large number, or there
14 are a number of specific licensees who use this material and
15 generate waste streams in fairly large quantities of under
16 .05 percent that have come into question the disposal or
17 transfer of this material under transfer provision in Part
18 40, which is 40.51(b)(3), which basically states that a
19 licensee can transfer unimportant, or can transfer material
20 to exempt persons, and an exempt person is defined at
21 40.13(a) as someone who receives, uses, owns, possesses
22 material under .05 percent. So the licensees have looked at
23 that as a provision that they may be able to transfer it to
24 a disposal site or other, other place under that, which has
25 caused some concern.

1 Where this recent changes come out with -- we
2 started back in result to the COMSECY-98-022, which was a
3 request, or which was a statement to the Commission
4 regarding the transfer from one of these sites, which is
5 METCOA to a RCRA site in Texas. The material was going
6 there for disposal, and there was a question as to the 40.51
7 provision would allow disposal because the 40.13(a) says
8 it's exempt for people who use, possess the material, but it
9 doesn't talk about disposal of the material.
10 The SRM --
11 DR. HORNBERGER: Gary, it was going to a RCRA site
12 because it was mixed with?
13 MR. COMFORT: No. Just because they were allowing
14 it to, the site they'd made arrangements to receive the
15 material -- you know, I'm not exactly sure why they were
16 wanting to take it.
17 But the material was then, we got an SRM back in
18 February -- well, the original SRM came back stating that
19 they should go ahead and allow, unless we can show otherwise
20 that there's gonna be significant impacts, health impacts,
21 because this is a controlled site, to allow the disposal.
22 However, the Commission came back and said that they'd
23 provide further guidance on this issue in its entirety. In
24 an SRM in February 2nd, '99, they came back and said we'd
25 like you to go back at this issue and look at revising these

1 problems that have, that have recently presented themselves,
2 to clarify the issue in Part 40.
3 Along with it, you know, as I stated, the State of
4 Colorado petition requested the exemption that's in Part 41
5 to, in Part 40 to conform to Part 20 for general licenses.
6 The SRM, by the way, did tell the Commission not to worry
7 about looking right now at the area of uranium recovery
8 operations, since that's being covered under a different
9 rule making activity.
10 DR. HORNBERGER: What was the date on the Colorado
11 petition?
12 MR. COMFORT: I'd have to --
13 DR. HORNBERGER: Is it on here?
14 MR. COMFORT: It's not on that, specifically.
15 DR. HORNBERGER: That's okay.
16 MR. COMFORT: But I can find it out if it's not
17 right here. Unfortunately, I don't have that with me right
18 now.
19 We basically went forward in response to the SRM
20 with a SECY paper, 99-259, making suggestions of how that we
21 felt we should proceed forward with these issues related to
22 Part 40. Basically, we decided that we did need to develop
23 more risk-informed performance based regulations for the use
24 of source material.
25 And as part of that, our concerns because of the

1 lack of requirements on disposal and transfer of the
2 material and unclarified use in some cases under the
3 exemptions of the material, that we would probably want to
4 try to improve the control and distribution of that source
5 material to exempt persons and general licensee.
6 We also wanted to explore the best approach to
7 delineate the responsibilities between NRC and other
8 agencies that may have jurisdiction over this material with
9 regard to the low levels of source material. Source
10 material is found naturally in nature, and so there's, you
11 know, some concern, should it be treated as a naturally
12 occurring radioactive material consistent with other
13 agencies.
14 DR. WYMER: What other agency?
15 MR. COMFORT: EPA is primarily the one that's
16 controlling NORM activities, but also the states have a role
17 in that also.
18 Finally, because of these problems with the
19 potential for transfer of large quantities of material under
20 the 40.51 provision, we basically went forward and said that
21 we ought to do an immediate rule-making on requiring prior
22 Commission approval for the transfer of this licensed
23 material to people who are exempt under 40.13(a).
24 We wanted to make sure that if it was going to
25 happen -- and to date, we're not aware of it occurring, at

1 least not any, at all, actually, without anybody coming to
2 the Agency and requesting, first, permission to do it. But
3 we wanted to get that specifically in the regulation to make
4 sure that there's no question about it again. I've got
5 some, a little bit further detail on that for the, as to
6 what the actual language that's presenting a problem.
7 Now, the Commission came back with an SRM after we
8 provided these recommendations and basically agreed with
9 those recommendations. The SRM was dated March 9th of this
10 year. It, one of the things it did direct us to do is go
11 ahead and establish two working groups, and make sure that
12 we had the agreement states as participants and since they
13 were impacted by this. We have gone ahead and done that, as
14 I'll discuss in the upcoming tasks.
15 The Commission also told us in that SRM to make
16 sure that the issue of the petition that had been submitted
17 by the states, that although we were planning on going
18 through with the rulemaking and answering the petition
19 through that method to make sure that the states agreed that
20 was an appropriate way to do it.
21 So since that point, we've gone through and
22 developed the Part 40 -- we've taken the responsibilities
23 that have been given by the Commission and the SRM, and
24 developed it into three separate tasks, which we're working
25 on right now. The first task that the SRM stated was that

1 the staff was to initiate interaction with the other
2 agencies that may have some, or that may have some
3 jurisdiction or other responsibility regarding either the
4 source material or the ores that are associated with the
5 source material, or the daughter products that may be
6 associated also.
7 We've done that, we've basically created a
8 working, which held their first meeting on September 20th,
9 21st. And this working group consisted of members from EPA,
10 the agreement states, Army Corps of Engineers, and OSHA,
11 which were all felt to be impacted. And they decided that
12 they wanted to participate.
13 The status, the Commission's only tasking on this,
14 though, is that we were to provide a status plan on how we
15 were going to approach resolving the issues related to this,
16 by March 9th, 2001.
17 This first working group went ahead and did their
18 meeting and came out with a number of issues that we wanted
19 to, felt were necessary to be covered on it. One of the
20 first things was to go back and take a look at, what are the
21 current individual agency responsibilities that we currently
22 have under each Agency's charter or state's charter?
23 Because there's -- a lot of this has some
24 duplicity on it, or potential, depending upon how you read
25 the regulations. Again, that's one of the big issues that

1 this group is hoping to work out, is if there is areas that
2 either have duplicative coverage or there's potentially a
3 lack of coverage that they feel that should be covered.
4 This group is trying to determine those aspects and then
5 trying to present a plan on how to better approach that.
6 There is a situation that, because the Atomic
7 Energy Act gives the NRC exclusive jurisdiction over Part 40
8 material, there's some question of, because we went ahead
9 and exempted from licensing some of that material, it still
10 doesn't leave it under our regulation, and therefore should
11 the states or EPA be allowed to regulate that material in
12 any shape or form.
13 And along with that, you have the problem that,
14 because the Atomic Energy Act and Part 40 define source
15 materials, or contain greater than .05 percent, that means
16 the ore, or felt to mean the ore in its entirety, so there's
17 some question as to how these agencies might be able to
18 regulate that material. And just to make clarification for
19 that, that's what this group is attempting to do, is to
20 clarify who really should have the jurisdiction.
21 The other thing they're going forward to say, is
22 NRC the appropriate agency to have jurisdiction over this
23 material and the aspects if it's not being used for, for
24 fuel cycle or nuclear matters. And so that's also being
25 looked at by the group.

1 The group on that meeting also went forward and
2 tried to develop a couple of options of how we could go
3 forward if there should be changes or it's decided that
4 changes need to be implemented. And those changes included
5 things such as, should we go back for legislative changes,
6 or would we be able to do it through an executive order or
7 some other method, MOUs? They're looking at, trying to
8 determine the entire gambit of both what needs to be done,
9 what the result will be, and then how to do it.
10 It's expected that this group will probably take a
11 period of time and could impact our current Part 40
12 regulations, depending upon what the decision and the Agency
13 heads decide to do about the material.
14 The second task that we broke down was to develop
15 the, the new rule-making on the transfers amending Part 41
16 to require the Commission approval for material less than
17 .05 percent to exempt persons.
18 The criteria that we went ahead and suggested,
19 both in, well in the current rulemaking package that's
20 before the Commission -- and this has been released to the
21 public just last week -- was that we probably would go ahead
22 and allow, or that we would allow the transfer of the
23 material as long as it would be under 100 millirem. If the
24 doses didn't exceed, expect to be exceed under 100 millirem;
25 however, if it was above 25 millirem, we'd notify the

1 Commission any time that we went ahead and approved that
2 transfer.
3 DR. HORNBERGER: The dose to whom?
4 MR. COMFORT: The dose to the public on that.
5 And we issued that paper to the Commission on
6 September 25th, and it can be found on our website now
7 because it has been put out for public. The Commission
8 decided that they'd like to get some public input or other
9 evaluating it. As a matter of fact, we've already gotten
10 some comments on it from the states, and I'll get into that
11 in just a second.
12 Where the big problem with 40.51 comes about is
13 that it currently states that any licensee may transfer
14 source or byproduct material to any person exempt from
15 licensing requirements of the Act and regulations in this
16 Part, or to any person in any agreement state subject to the
17 jurisdiction of that state who's been exempted.
18 In 40.13(a), it states that any person exempt from
19 the regulations in this Part to the extent that the person
20 receives, possesses, uses source material in which the
21 source material is by weight less than 1/20th of 1 percent.
22 Where they're running into the problem was that there was a
23 concern that this gives licensees a large window to go ahead
24 and just transfer this because it's specifically written
25 into the regulations that they may do it.

1 Unfortunately -- well, we, but, however, NRC has
2 taken a past policy of that the material, once licensed,
3 needs to follow the Part 20 disposal requirements. And the
4 rationale for that is because 40.13 doesn't directly address
5 disposal on this issue.
6 We've gotten also requests from other licensees to
7 take large quantities of material for further processing
8 because of other content of the material, and that's felt to
9 fall under this provision. And you run into the question
10 of, however, this material is the same as if it were going
11 to -- basically, if you're saying it's under .05 percent by
12 content, whether it goes to a disposal site or goes to a
13 processor for some other process, it now becomes potentially
14 unlicensed because it's going to an exempt person under this
15 regulation. So you have to look at -- you know, there's a
16 concern that there some type of inequity in the handling of
17 the material because in like one case that I'm aware of, the
18 material was going to be sent, because of its lime content,
19 to a cement manufacturer, and that may, in reality, have a
20 greater chance of exposure to the public than the actually
21 disposing it in a landfill or other, other waste site.
22 So this has caused a lot of problem that we felt
23 -- it's caused enough question over the last four or five
24 years that we've gotten a number of letters from licenses on
25 the applicability, that we did feel that it was worthwhile

1 changing it to the language that requires the transfer be
2 approved before it can be done, and make that specific.
3 As I have stated, we have gotten some comments
4 already, and those were from the agreement states. One of
5 -- they basically come from the state of Illinois and Texas
6 on this issue. The state of Illinois -- and also in this
7 meeting with the jurisdictional group, there was some
8 concern about how this changes NRC's past practices. In the
9 state of Illinois listed a large number of letters of past
10 NRC policy that made it very clear that we, in the past,
11 have not considered that 40.51 would apply to disposal. And
12 it hasn't necessarily, the policy hasn't necessarily been
13 changed on that. The few events that we have done for
14 disposal have, have gone through an approval process that
15 could be considered an alternative to the disposal
16 requirements of Part 20 that we have gone through and
17 approved.
18 But because of the language of the transfers for
19 under 100 millirem now, which is inconsistent with some of
20 NRC's decommissioning policies in Part 20 for 25 millirem,
21 they have a concern of how this is gonna impact the states.
22 The other thing they have a concern of is, because we are
23 requesting an approval and the state does have some
24 licensees that fall under their, that for consistency, it
25 would cause some additional burden to them, rather than

1 outright saying, no, you have to meet the Part 20s. You
2 know, they will have to, for requirements for disposal under
3 Part 20, you now have to go through and perhaps do an
4 additional analysis or handle other work.
5 The other thing that they were, the state of Texas
6 mentioned in their letter is that they suggested some minor
7 language modifications to include agreement states to make
8 it more clear there. And currently, as I said, this paper
9 is before the Commission, so we're waiting for a response as
10 to whether we can go through with the final rulemaking
11 package or not.
12 The third and final task that we were working on
13 is, was directed by the Commission, is to develop a
14 rulemaking plan to improve the control and distribution of
15 source material to exempt persons and general licensees.
16 Also, to include the resolution of PRM-40-27, plus to make
17 the entire rule more risk-informed. So we set up a work
18 group, that the charter of that group is to look at Part 40
19 in its entirety, try to identify the problems that are with
20 Part 40 in its current form, based upon our past history.
21 This working group is made up primarily of NRC
22 staff, with also a member from the agreement states and a
23 member from the, from the CRCPD. Acronyms.
24 The Commission told us that we needed to have a
25 rulemaking plan for the revision of Part 40, due to the

1 Commission by March. The first working group meeting was
2 just held in the last two days.
3 The Rulemaking Working Group basically went
4 through and discussed, or tried to identify the problems
5 that we've had with Part 40 in recent years and over the
6 past. It's had a long history that we've made attempts to
7 change Part 40, even as recently as 1992. There were a lot
8 of papers describing a lot of the problems even at that
9 point. The rulemaking was made in part also because of the
10 changes in Part 20, in an attempt to make it more consistent
11 with Part 20, or evaluate the current regulation with Part
12 20. However, due to, because of a lack of some information
13 on who it would impact and a concern of the conditions,
14 politics of the time, of adding additional regulatory
15 burdens that may not, two people wholesale, rather than
16 trying to, to determine whether they're really gonna have a
17 health impact was determined to be -- well, we weren't
18 determined that we had the information available to make
19 that determination at the point, so it was the advance
20 notice of rulemaking that was put out, or proposed
21 rulemaking that was put out was rescinded, and until
22 recently it hasn't come up again.
23 The working group's concerns focused, you know,
24 primarily on the areas of the exempt, or people who were
25 exempt from licensing under 40.13, and also the general

1 licensees under 40.22. In general, the working group felt
2 that the areas covering specific licenses didn't show too
3 particularly many problems outside of a little bit if
4 clarity necessary on the part, or on that transfer
5 provision.
6 The big problems found with both 40.13 and 40.22
7 was the lack of clarity. And what applied to the general
8 licensees in the way of the other portions of the
9 regulations. Again, like 40.51 states that a licensee may
10 transfer to, and it would be considered that because a
11 general licensee is a licensee, it would apply to them; an
12 exempt person's not a licensee, so that wouldn't.
13 There's a lot of concern that general licensees,
14 because they don't have any further requirements, are not
15 particularly aware of the conditions that they should be
16 operating under Part 40. And further, because we don't have
17 any method to track or evaluate where those licensees are,
18 we have a difficulty in enforcing any type of restrictions
19 that are currently, or that may be placed on them.
20 In the area of exempt licensees, there's a lot of
21 questions regarding the clarity of what's really being
22 exempted. Some of them are very specific in the use that
23 says, you know, you can use it for this type of operation.
24 However, if you start modifying it or doing anything else,
25 it's not clear that it is going to be used on -- in a few

1 cases, it does say that you can't modify it in any shape or
2 form. But in no case, in either the general licensees or
3 the exempt, does it talk about how, you know, what you
4 should do after you've finished using the product, you know,
5 in the way of disposal or any other method. And a lot of
6 these products contain up to .4 percent by weight, or higher
7 than .05 percent by weight, for the specific uses.
8 So that was a big concern, because a lot of this
9 material, particularly, the states were saying, now that
10 landfills are getting exposure monitors on their, you know,
11 for materials coming in are being set off and the states are
12 having a lot of burden going out, trying to determine, is
13 this an exempt material and what the problems presented for
14 it, because they are having some dose rates associated.
15 You know, the expectation is, in most cases, based
16 upon NUREG-1717, that there isn't going to be a concern, but
17 NUREG-1717 did show that for some of the exemptions that
18 there were concerns.
19 In the case of the general licensees, as in the
20 petition from the states, the agreement states, they found,
21 again, by material being transferred from a general licensee
22 to a landfill, they've been able to detect where some of
23 these general licensees are and they'll go back and they'll
24 find that there are some contamination problems that again
25 could result in, you know, under optimum conditions,

1 exposures that would potentially exceed Part 20 dose limits.
2 DR. HORNBERGER: Gary?
3 MR. COMFORT: Yes.
4 DR. HORNBERGER: Could you help me out a little
5 bit by giving me maybe a couple examples of the kind of
6 things that are done by these general licensees and the kind
7 of materials that would be passed on as exempt.
8 MR. COMFORT: Well, under, under the exemption,
9 one of the -- we had members of the public, actually, at
10 this working group meeting, and one of them has another
11 petition in regarding a specific part of Part 40 in the
12 exemptions, which is aircraft counterweights. He's looking,
13 he's done a lot of, he's been involved in that area for
14 quite a while, and he's done a lot of research. He found
15 even in NRC's databases where aircraft counterweights, which
16 are exempt under the, under Part 40.13(c) -- I think it's
17 (5). But they're exempt under that. However, it says it's
18 for the use as a counterweight.
19 What's happening, he says, is as the planes now --
20 you know, back in 1960 when this was written, that's, the
21 planes were using these. Now those planes that were built
22 in the '60s are being retired, and there's a concern of
23 what's going on, that the counterweights are either stored
24 en masse for use on other, other, other planes. However,
25 with FAA requirements, that's becoming more difficult

1 because everything has to be flight certified. There's also
2 the problems when they're cutting up these planes, they will
3 just take a big chop saw and go right through the wings
4 where the counterweights are and just cut the, cut the
5 things out. And the only things that are permitted are to
6 use it as a counterweight. And it does state that they can
7 refurbish the protective outer coating of it. And this is
8 -- the counterweights are made with depleted uranium, which
9 would fall under this.
10 On those databases, he says they found exposures,
11 particularly in some Air Force military applications, where
12 people have gotten up to 25 rem exposures reported in that
13 database. So that's one of the types of -- it's used as
14 thorium coatings, on optical, or within optical glass.
15 There's, you know, a clarification issue there. If the
16 thorium is coated on the outside of the optical glass, does
17 the exemption apply?
18 There's thorium welding rods, which are exempt
19 under the regulations there. Actually, there's materials,
20 glassware and flatware that you can eat off of that are
21 exempt under that, up to .2 percent. So there's a wide
22 variety of small uses of the material that have the
23 potential for exposure, depending upon where they are.
24 DR. WYMER: But the counterweights are a long way
25 above .05 percent.

1 MR. COMFORT: Oh, yeah, well --

2 DR. WYMER: They're like a hundred percent.

3 MR. COMFORT: Yeah, that's basically a hundred
4 percent with a protective shielding coating on it. And
5 that's where the concern is, is that when you get to the --
6 you know, they're perfectly fine sitting in the airplane as
7 designed for use. It's when you start taking them out.
8 Another example we had was that a company who imported a
9 bunch of planes that we basically going to salvage, that he
10 felt that he could get some value of, and he started parting
11 the thing.

12 And again, example of going through and ripping
13 off the parts just using a saw, cutting through the
14 material, destroying the protective coating. When they
15 realize, you know, hey, there is a potential problem, they
16 ended up taking off the counterweights separately and
17 storing them, and now they're just sitting on shelves
18 because there's really not an after-market for them because
19 of other flight requirements. And the question comes, where
20 do you dispose of those?

21 Under, you know, under 40.13, there's no clear
22 regulation, because the person really isn't, isn't required
23 to follow the requirements of Part 40 at all, which would
24 include, therefore, the disposal of it. So you could
25 potentially find these things going off to landfills or

1 other uses, you know.

2 He also gave an example again on the

3 counterweights that in Japan, you know, they were asked to

4 identify, you know, something that set off radiation

5 monitors at a landfill there, and they were able to identify

6 it as a counterweight, that it was going through.

7 So, you know, there is a lot of concern about

8 where does this material go. And that's what this working

9 group -- you know, one of the issues that this working group

10 is going to do -- we may not be able to easily resolve where

11 the material is directly going. But one of the potential

12 fixes that we're looking at is doing some type of

13 requirements consistent, you know, comparable with those in,

14 you know, related to Part 30, of licensing distributors and

15 manufacturers of material and requiring them to report at

16 least where they're sending those materials to. And that's

17 just one of, you know, the areas that, you know, one of the

18 methods that we've looked at during this meeting of trying

19 to change the regulations.

20 We felt that there is a necessity to go through

21 and try to clarify a lot of the language, because, again,

22 the intent when it was written was to protect the strategic

23 value of the material. Now that there are some concerns of

24 potential health impacts from it, at least in case where it

25 could exceed Part 20 limits, that we're looking at doing a

1 wholesale clarification of each of the exemptions and, you
2 know, under general licenses.
3 We've looked at things of doing two-part, or
4 tiered general licenses, where some may not be, based upon a
5 lower quantity limit, or a use limit may not be applicable
6 to Part 20; others may be. So there's a variety. We may
7 even go as far, you know, the group is also considering or
8 putting up the option of, you know, removing either
9 exemptions or general license. But we're still at a
10 relatively early stage where, you know, we're in the midst
11 of developing a rulemaking plan with the options right now,
12 and we plan on presenting that again in the, as stated to
13 the Commission in March. Prior to that, it'll go out to the
14 agreement states for comment probably around the December
15 time period.
16 So there's a lot of work and concern on, on how to
17 handle, in particular, the disposal and reuse issues of this
18 type of material, because of the concern of the potential
19 for health impacts. You know, it again, it has to be
20 countered, however, by the problems of, we're not real clear
21 as to who's using the material and the number of people that
22 are using it, because we don't have any current restrictions
23 or requirements for reporting on that.
24 We are also have to be concerned about the type of
25 material, that it is found naturally in nature in

1 significant quantities all around, and that we don't want to
2 get ourselves into a position that we're regulating
3 everything, because that would be very burdensome to the
4 American public, as well as anything else. So there is a
5 lot of difficulty in how do we go about actually making
6 these revisions to make sure that we are doing our charter
7 of protecting public health and safety, you know, without
8 causing a tremendous burden to everybody involved.
9 DR. GARRICK: You've mentioned some measurements,
10 like 25 r, etc. What is the basis of those?
11 MR. COMFORT: I'm not clear on that report.
12 Basically, from what it was described to me on, is that it
13 was primarily because they were taking the counterweights
14 and cutting them up and causing a lot of loose particulate
15 matter that could be inhaled. And you had a, you know,
16 basically doing the operation for a long period of time on a
17 number of counterweights. So that's the understanding of
18 how that dose was calculated.
19 DR. GARRICK: So with the calculated dose, it's
20 not based on any dosimeters or --
21 MR. COMFORT: Uh -- I can't say I'm clear on that.
22 I can find out for you on it, but --
23 DR. GARRICK: No, I was just --
24 MR. COMFORT: -- database.
25 DR. GARRICK: -- curious. It sounds like a pretty

1 serious problem in some areas and in some applications, such
2 as the counterweight.
3 MR. COMFORT: Yeah, it --
4 DR. GARRICK: And I was just curious as to what
5 was the basis for knowing, having that data.
6 MR. COMFORT: Yeah, a lot of the data that they're
7 basing the concern on is on calculated exposures.
8 DR. GARRICK: Now, has this problem been brought
9 to our attention principally by the states? How did this,
10 how did we suddenly -- maybe it wasn't so suddenly, but how
11 did we come to decide that this was a problem and --
12 MR. COMFORT: It primarily came because of our
13 licensees coming in to us and stating, hey, this transfer
14 provision under 40.51 allows us to transfer material under
15 .05 percent to exempt persons. An exempt person is anybody
16 who doesn't have a license under 40.13. And we became
17 concerned because of the, the large quantity of material
18 that some of these licensees were looking at transferring
19 that we did further evaluations with more, more up-to-date
20 dose modeling plans. And they came out with the potential
21 that, under optimum conditions, going to the public, you
22 could cause exposures to the public exceeding Part 20
23 limits. So that's where it really started.
24 Along with it, at the same time -- as we said, we
25 got the petition form the State of Colorado and the

1 agreement states on the general license -- you know,
2 actually in the last year we just got that along with the
3 process. And then we've also gotten the petition on the
4 counterweights because of the concerns with that.
5 But there's been a long, you know, a long history,
6 as I said, back in 1992, that, that the staff had identified
7 a large number of concerns with Part 40 in their evaluation
8 to try to make it more consistent, or to at least compare it
9 to the new requirements in Part 20, and we were already
10 going forward with the rulemaking at that point, which then
11 rescinded in '94. So it's not a brand-new issue, really.
12 It's just, it's raised its head in the last three or four
13 years much more often.
14 DR. GARRICK: Yeah.
15 MR. COMFORT: It's caused us to really try to make
16 some type of attempt to --
17 DR. GARRICK: Could you share with us a little bit
18 more than you have as to the approach you're taking for
19 risk-informing.
20 MR. COMFORT: okay, well, basically what we're in
21 the process of doing is collecting data on the uses of the
22 material right now. We've also, you know, NUREG-1717's come
23 out, or is in draft right now, but is getting close to a
24 final draft which examines exemptions, you know, doses,
25 exposures related to exempt materials in both the byproduct

1 arena and source material arena, so we've got the new data
2 on that to go forward and re-look at all the exemptions that
3 we've provided.
4 Before, as I said, when it was created in 1961 it
5 was not really related to a health -- the exemptions weren't
6 evaluated as much on a health impact as more as a commercial
7 use as to what was already being done that they didn't want
8 to impact industries too much. We're going back and saying,
9 well, now with the new data that we have that there is the
10 potential for health impacts, that we have to at least go
11 back and evaluate it. Again, I don't think the disposal
12 requirements were looked at in any type of scenario back
13 when the regulations were written that, that we are seeing
14 concerns, particularly because material has more than likely
15 going into landfills for decades or more. But because now
16 that we've got more sensitive information, or equipment that
17 it's being detective, so there's concerns from the landfill
18 operators and the states along with it who have to respond
19 to those, as to, you know, is there something that we can do
20 about that.
21 But again, you run into the big problem of trying
22 to determine which of the materials coming from a natural or
23 exempt source, versus which should have been covered either
24 by, gone through a general license or a better disposition
25 method. So, you know, they're very difficult on that.

1 And again, another, you know, one of the things
2 that we're trying to do, or one of the methods that we're
3 hoping to potentially use the rule for is to gather even
4 further data by, you know, requiring people who hold general
5 licensees or distribute to general licensees and exempt
6 people, to identify themselves through that regulation that
7 we can get a better sense. And that's one of the options.
8 And that's actually the option that they proposed
9 in the 1992 ANPR, was to do a two-stage rulemaking. One was
10 to go out, basically require people to identify themselves
11 with, with the idea that if -- we knew a certain set of
12 people who were general licensees because for some reason
13 they'd either come and asked us do they need a license or
14 otherwise. And we were, you know, part of the plan on that
15 way, is if we couldn't get them immediately identified, well
16 they'd start, the ones that we did know would go off and
17 identify their competitors to make sure that it was on a
18 clean playing field.
19 DR. WYMER: On the -- it's kind of hard to get a
20 word in.
21 MR. COMFORT: Sure.
22 DR. WYMER: It seems to me you've got a really
23 complex issue, as I'm sure you know. On the one hand, you
24 don't want to put an unnecessary burden on the public; on
25 the other hand, you want to protect the public.

1 MR. COMFORT: Right.

2 DR. WYMER: And it seems to me that you aren't,
3 you have a problem with consistency. You've already faced
4 with this Part 20. You've come up with this, if it's over
5 25 millirem per year, up to a hundred, then you have to
6 inform the Commission, which is not exactly the same deal
7 that Part 20 is applied in more normal cases, where if it's
8 100 millirem or 500 millirem, then you've got to
9 periodically, every five years, and make a report of some
10 kind. So you're not consistent there.

11 And I don't have to stretch too far to think of
12 uranium UF-6, depleted uranium in thousands of cylinders
13 around the country, being some kind of source material
14 that's going to have to be disposed of somewhere. And it
15 seems to me, somehow you have to wrap yourself around all of
16 this in a consistent manner, and I don't see that as really
17 your total target here.

18 MR. COMFORT: Well, the UF-6 issue, because that
19 is being specifically licensed and it's doubtful that it
20 would be under .05 percent by weight.

21 DR. WYMER: Well, I'd say that's right.

22 [LAUGHTER]

23 MR. COMFORT: Yeah, so -- I mean, it would be
24 following Part 20 --

25 DR. WYMER: But neither is pure uranium in an

1 airplane.

2 MR. COMFORT: Oh, I agree, that there's a lot of
3 inconsistencies in Part 40, versus -- within Part 40 itself
4 and the regulations. The problem that you also have though
5 is an inconsistency of there's a lot, it's because it's
6 natural material, how do you -- which is found throughout
7 the world, basically, in very, in many spots, very easily
8 accessible. You know, it's found in zirconium sands, which
9 are very easily accessible, etc. -- that, how do, you know,
10 that we don't, if it's not being processed, we're not
11 licensing it and then basically we exempt that material from
12 our regulations. So you've got the potential that you're
13 giving exactly, or probably greater exposures because a lot
14 of this material is greater than .05 percent in nature that
15 people are just sitting on right now.

16 And you get into a consistently problem -- why are
17 we not protecting them from the material, but we're so
18 concerned about something that's got half the concentration
19 on it. And it's a problem with byproduct material and other
20 materials related to the NRC. They're pretty readily
21 identifiable that they were created by man.

22 When you get into the issue of the source
23 material, where it's naturally occurring material, it's
24 difficult to, to try to find that, that correct level as to
25 where you're going to regulate it at because you are

1 causing, you know, you are moving the, potentially moving
2 where the exposure's going to, but the exposure's still
3 there no matter where you put it and stuff.
4 DR. WYMER: It's pretty clean though. In one
5 case, it's processed as a source material. In the other
6 case, it's processed for something else.
7 MR. COMFORT: Right.
8 DR. WYMER: So that's kind of --
9 MR. COMFORT: Well, you end up processing it as a
10 source material -- well, see our problem is we regulate the
11 ones that are not, that are being processed for something
12 else too. And they're not -- I mean, a large number of our
13 Part 4 licensees would much, much prefer that there wasn't
14 uranium or thorium related to the material at all, because
15 they don't have anything or want to do anything with that
16 material. And it causes them a tremendous burden because
17 they do have the licensing and disposal requirements that
18 they have to fall under, even though this material, you
19 know, in some cases, they're actually -- the end result is,
20 because of all the other things that they had to add in for
21 the process --
22 DR. WYMER: So you recognize the problem. Do you
23 plan to deal with it?
24 MR. COMFORT: We're going to attempt to deal with
25 it in a way that we at least have a better idea of where the

1 problem is. And again, as I was stating, the '92 proposal
2 was to do it in two stages to identify who we're really
3 going to impact by making them identify themselves and
4 getting better control of how much of this material is
5 really moving on, and then taking a second step of seeing of
6 then seeing where the real health impacts are.
7 DR. WYMER: I think you need to look for
8 consistency throughout the whole thing, including, including
9 things like UF-6, so that it's all consistent, probably
10 ultimately based on Part 20.
11 MR. COMFORT: Yes. Well, I mean, the UF-6 issues
12 I would have thought, or I would think would be covered
13 under the Part 20 disposal requirements that it's gonna
14 eventually have to be disposed of using Part 20, unless, you
15 know, somebody comes in with a request for getting some type
16 of alternative disposal allowed. What the transfer
17 provision is doing is basically saying if it's under .05
18 percent, which other -- you know, for consistency, I mean
19 there is an inconsistency there that we do have to look at,
20 that says that if it's under .05 percent, the person didn't
21 have to be licensed and so they don't have any requirements
22 for disposal, whereas the licensee, if they have a waste
23 stream that comes out as under .05 percent, they do have to
24 meet Part 20, unless they transfer it for a beneficial use,
25 is basically where it's coming from.

1 MR. LEVENSON: I've got a different kind of
2 question. The original parts of this, which were "receive,
3 possess, and use" -- and then you attach a radiation
4 exposure limit, whether it's 25 or 100 or whatever the
5 number is -- fairly understandable and straightforward, and
6 how you measure it.
7 The minute you start including disposal in this,
8 what does the measurement of radiation refer to? It's no
9 longer something easily measured by the, as an occupational
10 dose by people handling it or exposed. What does it all
11 mean? How do you, how do you cope with that? Is this over
12 the next thousand years? To anybody? How do you handle
13 that incredible expansion of the scope?
14 MR. COMFORT: I am not familiar with exactly how
15 they're doing the calculations for disposal. Primarily, the
16 transfer provision is taken to still account for that it
17 doesn't allow for the disposal that they would have to come
18 in under Part 20 for an alternative request if they wanted
19 to put into a non-licensed radioactive site, you know, is
20 the policy that we currently, I think, are still
21 implementing, based upon that last Commission paper.
22 It's just that they did an analysis that said,
23 hey, it's not an NRC licensed site. However, based upon the
24 exposures that they calculated -- and I m not exactly sure
25 how they did calculate those -- I'm sure it was through a

1 public, based upon the knowledge that I do have on those,
2 that I have seen done in that past, under all modes that it
3 could be taken or distributed, it's over a significant
4 period of time. I just don't know though for the, and it is
5 for public exposure that they're looking at --
6 MR. LEVENSON: My perception is that very few of
7 the disposal sites of the type we're talking about for this,
8 some of which are ordinary landfills -- is there really
9 adequate characterization that you could even do such a
10 thing --
11 MR. COMFORT: Well, I mean, the --
12 MR. LEVENSON: -- the total effort required?
13 MR. COMFORT: The cases I'm aware of it is, we
14 have not approved it to just a general landfill. And this
15 last case that was through a RCRA waste site, which you
16 would expect to have some types of controls or institutional
17 controls --
18 MR. LEVENSON: But nowhere the characterization we
19 talk about for --
20 MR. COMFORT: That may be correct. I'm not aware,
21 exactly sure again how they did that evaluation.
22 DR. HORNBERGER: Marty?
23 DR. STEINDLER: I guess I continue to be amazed
24 that the Commission is moving, apparently, down a path which
25 is contrary to its own policy of risk-related activities.

1 You keep talking about .05 percent, or whatever, and yet
2 that's just an artificial number and there doesn't seem to
3 be much movement in doing away with that and substituting
4 something related to risk for it.
5 You've also got -- I mean, if you're gonna attack
6 the general problem, which I think you intimated, let me
7 just remind you that every steelmaker injects Cobalt, to
8 some extent, into every heap, beucase that's currently the
9 standard procedure for measuring the life of the brick.
10 Now, is that a risk? No. Is that a signficant
11 risk? Can it become a significant risk? Well, they didn't
12 think that disposal of material into sewerage streams was
13 any, you know, significant risk, until lo and behold
14 somebody downstream is doing something to it. And that was
15 also, you know, I mean, that was also kind of a silly base,
16 not much foresight. But it was based on a mass limit -- I
17 mean, you can call it a curie limit, but it's, curie's just
18 another term for mass in this case.
19 Do I detect the enormous lack of coherence, as I
20 think Ray was pointing out? It's like the right hand
21 doesn t seem to know what the left hand is doing, and the
22 commercial sector looks at this and says, you know, who am I
23 going to talk to? About what?
24 MR. COMFORT: Well, that's part of what we're
25 trying to do, is to make clear who, you know, who should be

1 licensed and what should be. Basically what we're looking
2 at -- and the jurisdictional group is also looking at -- is
3 the .05 percent limit a proper limit? I think you get down
4 -- if my memory is correct -- something on the way to meet
5 the Part 20 limits for disposal, you should be around .003
6 percent.
7 DR. STEINDLER: But the point I'm making is that
8 the Commission, in its infinite wisdom, used the, I guess
9 they were semi-standard scenarios, to determine what
10 constitutes class A, B, and C rates. That report was the
11 first attempt to analyze the potential licensing process on
12 the basis of standardized risk. Now, is it valid today?
13 Probably. Are the risk levels in, what? WASH-780, or
14 whatever number that is -- NUREG-780 still valid? Yeah, I
15 suppose. They're not too bad.
16 There was a standardized, there were two
17 standardized low-level waste disposal site scenarios and the
18 corresponding risk fixed, and then from that, you determine
19 what's Class A, B, and C in terms of total content, based on
20 risk. I don't hear enough -- it seems to me I don't hear
21 very much discussion about a risk-based approach to this
22 issue. You keep talking about weight percent. Weight
23 percent doesn't mean a whole lot.
24 MR. COMFORT: Again, I feel that we're going down
25 a risk-based approach, but it's very different than handling

1 any other type of material that NRC's doing because it a
2 naturally occurring material. How do you tell whether the
3 atoms actually came -- you know, what's the difference from
4 the atoms that are found in one process that's under, that I
5 mean, that's found in nature -- we're not gonna say even
6 it's being processed, versus that something that is being
7 processed. While the concern is that because it's being
8 processed, it may be getting more of an exposure to people
9 or giving the potential. Also, if it's found in nature, you
10 have the potential that people may not stumble upon it,
11 whereas you're forcing it into a certain place.
12 You can look at it other ways also, saying that
13 when you transfer this material to a landfill or some other
14 place that may be undesirable, perhaps that is the better
15 place for it than in an open area in nature.
16 It is difficult to determine where the balance
17 should be between how much control for risk and health and
18 safety purposes do we have to have versus how much are we
19 also going to go up and clean up, you know, have control
20 over the health and safety of people who currently or
21 material that hasn't been moved and not licensed because he
22 hasn't been moved but people are still being exposed to it.
23 It is difficult to identify all of that and to
24 take those protections so we have to take a risk informed
25 base that we are not going to cost people a ton of money but

1 on the other hand we are doing a proper amount of protection
2 and that is what we are hoping to do in this is to go
3 through a process of identifying where those uses are, what
4 the impacts are from them and how, you know, how we should
5 best handle it.
6 The rulemaking group right now in its approach is
7 that is one of the things that we are looking at, that we
8 are thinking about proposing to the Commission is to
9 continue evaluating data by going through a rulemaking that
10 we can at least identify where these people are plus clean
11 up some of the other concerns that we have, immediate, based
12 on new information through NUREG 1717, through practices
13 that we have heard from states that have concern from the
14 petition that they did.
15 We are on the steps of trying to identify where
16 the material is presenting a problem and trying to fix that
17 problem.
18 Again, the .05 percent number we have talked about
19 a number of times in both the jurisdictional working group
20 and our working group as to how to best -- you know, if that
21 is the proper number and should it be changed, and again we
22 are trying to get information to determine what that all is
23 going to impact and what other concerns we are going to have
24 to deal with because we just don't have a big handle on the
25 number of people and the situations that this could cause in

1 the way of health impacts.

2 MR. LEVENSON: Isn't it true that the .05 percent

3 originally was not a health and safety number. That arose

4 from strategic reasons? You know, I guess one should ask

5 the question if you really did risk informed and were

6 concerned about human health and welfare, shouldn't things

7 like depleted uranium be buried, isn't that less of a risk

8 to the population than making it into bullets?

9 MR. COMFORT: Sure, in a number of ways.

10 DR. GARRICK: Now you are really getting global.

11 You have really expanded the scope.

12 DR. HORNBERGER: That doesn't need an answer.

13 John?

14 DR. GARRICK: Included with SECY-99-259 is an

15 options paper of ways to resolve this problem.

16 Can you share with us what some of the current

17 thinking is as to NRC's preferences?

18 MR. COMFORT: Okay. The options paper that was

19 associated with 259, a lot of it was basically discussing

20 different methods that we could change jurisdictional

21 requirements or adjust on those -- that was one part of the

22 paper, you know, including as I discussed before that the

23 jurisdictional group is looking at.

24 DR. GARRICK: What is the attitude of the NRC

25 getting out of this business?

1 MR. COMFORT: I can't speak for the Commission
2 itself but I have heard a lot of talk that because of the
3 situation of it being naturally occurring material that our
4 charter is really for the strategic -- or the Atomic Energy
5 Act was developed for source material for the strategic --
6 DR. GARRICK: Right.
7 MR. COMFORT: -- aspect of it, that basically
8 there has been talk of -- there has been some support I have
9 heard of basically saying let's leave the material that is
10 not being used specifically for source material to the fuel
11 cycle out of NRC's jurisdiction and pass it off to EPA and
12 the states.
13 DR. GARRICK: Right.
14 MR. COMFORT: And even in this jurisdictional
15 group there was not a big uproar from those agencies when we
16 stated that because there is some concern of dual
17 regulation.
18 The EPA feels that because of their other
19 requirements on things like the daughter products and radon
20 and radium and stuff that they would be able to adequately
21 protect that material or to at least apply a regulation to
22 it, and that just has to come down to see -- that is what
23 they are trying to do right now is develop again what is
24 currently in their charters on that, and then look at the
25 impacts of going about that route.

1 That is one of the options they will be evaluating
2 to do, and if they decide to go do that, then the next step
3 is what steps do they have to take in order to make that
4 change and again it could be anything from having to go
5 through a legislative change -- they are hoping that
6 whatever we do may be able to go through something more
7 simple like an Executive Order or Memorandum of
8 Understanding, but those are all approaches that are being
9 looked at from a legal basis and from how easy that they
10 would be able to implement what is finally decided.
11 Until that is done, we can't say.
12 DR. GARRICK: It seems that it is kind of
13 important to try to bound this whole regulatory
14 responsibility or at least clearly define it in a fashion
15 that doesn't put you in the position of having to consider
16 storing the whole planet or processing the whole planet.
17 [Laughter.]
18 DR. GARRICK: So I would think that you really
19 want to give some serious thought to limiting the
20 involvement of the NRC in this kind of activity.
21 MR. LEVENSON: This is not a hypothetical
22 potential problem, John.
23 You know, a few years ago the state of Oregon
24 passed a law about what levels of radioactivity could be
25 buried in the state and after they passed the law they

1 discovered for instance that cremated persons, the ashes,
2 could not be buried and there was all kinds of things.
3 Quarries that ground granite, the grindings
4 couldn't be allowed to drop on the ground, so we are in an
5 area where we have to be very careful.
6 DR. GARRICK: Yes.
7 MR. LEVENSON: And as I say, it is not
8 hypothetical. It happened.x
9 MR. COMFORT: Well, we have run into the situation
10 already that people who have rock collections have had to
11 come in and get licenses because they have concentrations
12 greater than .05 percent and the general license
13 requirements of 4022 only apply to institutions, not
14 individuals, so again those are the types of things that we
15 are discovering that we are trying to determine how the best
16 way to fix that is.
17 MR. LEVENSON: You mean the .05 percent
18 concentration doesn't have a total quantity attachment? If
19 I have a one ounce piece of rock that is more than .05
20 that --
21 MR. COMFORT: No, there is no total quantity
22 attachment for an exemption -- there is none.
23 MR. LEVENSON: That's one of the things you ought
24 to consider having.
25 MR. COMFORT: That is one of the things that we

1 are looking at also, because we were looking at the
2 potential of moving some of the material that we really have
3 determined shouldn't be an impact at all from the general
4 category to the exempt category.
5 On the other hand, there's some material under the
6 exempt category that we may be looking at putting either
7 under a general license or a more specific license because
8 of the new information on potential health impacts, so
9 that's where I think we are trying to go forward with a risk
10 informed approach on this.
11 DR. GARRICK: Yes. If you approach it correctly
12 or with some degree of thought on a risk informed basis you
13 can address the issue of quantity of material or the size of
14 the source term.
15 MR. COMFORT: Yes. We have also looked at on top
16 of quantity and concentration also the use of the material
17 too.
18 DR. GARRICK: Right.
19 MR. COMFORT: As being a category.
20 DR. WYMER: These things sort to tend to have, to
21 develop a life of their own and I can envision you just
22 proceeding with developing your regulations and even though
23 there is an alternative of passing off the responsibility to
24 some other agency, but the juggernaut gets rolling and it
25 continues to roll and the next thing you know you have got a

1 regulation or change in the regulations.

2 It seems to me that you can't be concerned with

3 what you haven't licensed. That just seems pretty

4 straightforward even though there may be a hazard there.

5 You can't, as John said, process the whole planet.

6 DR. HORNBERGER: That is correct, by the way?

7 MR. COMFORT: What?

8 DR. HORNBERGER: You are not concerned with what

9 you are not licensing.

10 MR. COMFORT: No, we are concerned with some of

11 the areas that we are not licensing but we have to also put

12 a comparison as to what the impact is going to be.

13 DR. WYMER: But you don't have any mechanism for

14 the things that you haven't licensed, do you?

15 MR. COMFORT: Well, that is what we are looking

16 at, one of the ideas or one of the potential approaches that

17 we may take is to start trying to put in some regulatory

18 mechanism in an attempt to identify the uses of that

19 material that we're not licensing, meaning exempt or in

20 actuality general license material.

21 DR. WYMER: So in effect you license for all

22 practical purposes so then you can deal with it.

23 MR. COMFORT: Yes.

24 DR. WYMER: But regardless of that, it seems to me

25 that you can only have one standard.

1 You are either protecting the health and safety of
2 the people or you are not, and the Part 20 is sort of the
3 bottom line.
4 It says here is what you have got to do and you
5 are sort of fooling around with that a little bit with
6 respect to the 100 years.
7 MR. COMFORT: And that is a problem because Part
8 20, and this is my own opinion on it, may not have
9 potentially looked at the aspect of broad quantities of
10 naturally occurring material. In general, NRC licenses
11 material that was man-made and we want to follow the whole
12 path, but if we don't know the origin of it, it does get
13 difficult to apply Part 20.
14 DR. WYMER: So you are going to change Part 20?
15 MR. COMFORT: I don't think that that is going to
16 be in the plan right now. I think we have to factor that
17 in, however, into the regulations.
18 I mean we are trying to look at it and make it
19 consistent to the extent that we can, realizing Part 20 is
20 there, but there is not going to be a guarantee that it is
21 going to be 100 percent consistent because of the costs or
22 other burdens that may be associated, versus the incremental
23 safety that you would be providing by going entirely to Part
24 20.
25 DR. WYMER: That is the risk informed aspect.

1 MR. COMFORT: That is the intent.

2 DR. GARRICK: Yes, I think one of the messages
3 that is coming through loud and clear from us is that the
4 process needs to be systematic and it needs to be
5 agency-wide.

6 You need -- the ACRS and the ACNW have worked
7 together in trying to address NMSS issues in the context of
8 some higher order strategy and set of principles that are
9 consistent throughout the agency and it seems that is where
10 you kind of have to start, such that you don't get yourself
11 into a position that because these things tend to get
12 compartmentalized along organizational lines that you lose
13 contact with some overarching structure that clearly guides
14 the risk informed practice at least at some level, at some
15 high level.

16 In the process of doing what you are doing I would
17 hope that you would be looking very hard at what those
18 principles are and how they map into other risk informed
19 practices within the agency.

20 DR. HORNBERGER: Marty?

21 DR. STEINDLER: Yes, I would urge you to pay very
22 close attention and re-read in the transcript what John just
23 said.

24 MR. COMFORT: Okay.

25 DR. STEINDLER: That's the fundamental issue.

1 Let me ask one question. I can go down to the
2 local store and in fact have and buy a gas mantel that I use
3 in gas lights.
4 MR. LARSON: Exempt.
5 DR. STEINDLER: The old ones, older ones --
6 DR. GARRICK: He actually does that.
7 [Laughter.]
8 DR. STEINDLER: I have.
9 MR. LEVENSON: Next year he is getting running
10 water.
11 [Laughter.]
12 DR. STEINDLER: Oh, no -- and no telephone.
13 DR. GARRICK: I have tried to reach him and I
14 can't get him on the telephone.
15 DR. STEINDLER: As I am sure you know, these
16 things are thorium and they are fundamentally 100 percent
17 thorium by the time you get done with them. They break.
18 The process of disposal I think throughout this
19 country uniformly is to throw the pieces away. They are
20 hotter than a pistol.
21 MR. COMFORT: Yes.
22 DR. STEINDLER: If you really want to know. Do I
23 have to go and get a license? Will I have to go and get a
24 license after you guys get all done with this?
25 [Laughter.]

1 DR. STEINDLER: Because you are going to have a
2 Revolution on your hands if you require that.
3 MR. COMFORT: Oh, I agree completely and those are
4 the types of situations that we are looking at.
5 I mean thorium mantels are one of the areas that
6 are exempt under 4013(c) as an exempt product.
7 DR. STEINDLER: I see.
8 MR. COMFORT: But --
9 DR. STEINDLER: At least I am not breaking the
10 law.
11 MR. COMFORT: I mean there is again nothing
12 addressing the disposal of those. Is it a health impact to
13 have those things disposed?
14 There are certain circumstances where people use a
15 tremendous amount of them for internal lighting.
16 DR. STEINDLER: Absolutely.
17 MR. COMFORT: That you could get exposures higher
18 than -- I am not going to say above Part 20 because I don't
19 know the exact numbers.
20 DR. STEINDLER: I can tell you they are higher
21 than Part 20.
22 MR. COMFORT: That is one of the concerns.
23 DR. STEINDLER: Right.
24 MR. COMFORT: But on the other hand it is a
25 product that has been used for a long time and you would

1 have a Revolution on your hands if you start pulling out,
2 you know, saying you can't have a lantern anymore of that
3 type.
4 DR. STEINDLER: Well, let me ask one other
5 question and then I will keep quiet.
6 I occasionally get to Colorado and I travel up and
7 down the hills and I pick up the yellow rock -- gee, it
8 looks just like the thing I need for my rock collection.
9 This is Milt's point.
10 I put it in my pocket, take it home. Do I have to
11 get a license?
12 MR. COMFORT: No, that is covered under 4013(b),
13 which says unprocessed ore, however --
14 [Laughter.]
15 MR. COMFORT: -- if you go --
16 DR. STEINDLER: Can I do anything with it?
17 MR. COMFORT: However, there is a reading of let's
18 say you chop it into two pieces. You have just processed it
19 and now you technically you could be said to need a license,
20 and that is one of the concerns.
21 MR. LEVENSON: If you polish it, you are in big
22 trouble.
23 MR. COMFORT: And that's again where it is coming
24 down to the idea of what I was mentioning, that rock
25 collections that we have licensed individuals for the rock

1 collections --

2 DR. STEINDLER: No, I understand.

3 MR. COMFORT: -- because they were considered

4 processed ore.

5 DR. STEINDLER: Well, the final result of your

6 efforts has to pass the chuckle test. So far at least that

7 last example won't.

8 MR. COMFORT: Oh, I agree completely on it and

9 there's a lot of other just language problems that NRC has

10 taken a policy opinion on how it is to be interpreted but

11 it's not very clear that the interpretation couldn't be read

12 differently with a different set of lawyers, et cetera, that

13 make parts of Part 40 very unuseful in its current form

14 anyways.

15 Again, it was written primarily for the strategic

16 purposes of controlling the material for the Government's

17 sake and was never modified for the potential for health

18 impacts and that is what we are trying to go through is to

19 do a systematic look at what should based upon our now more

20 recent experiences, should be regulated or changed in those

21 regulations and to hopefully clarify any of those

22 inconsistencies or potential problem areas, to outright make

23 clear what we mean by what is stated.

24 That doesn't mean that we are going to be able to

25 in its entirety protect the public to the Part 20 limits

1 because of the nature of the material.

2 DR. HORNBERGER: We are looking forward for

3 performance assessment for your cabin, Marty.

4 [Laughter.]

5 DR. GARRICK: And your trips to Colorado.

6 DR. WYMER: I say this very reluctantly but this

7 is an excellent example of the application of the risk

8 informed regulations.

9 DR. GARRICK: It was hard for Steindler too.

10 DR. STEINDLER: Yes, it took me awhile.

11 DR. HORNBERGER: Gary, just one quick follow-up.

12 I think that I understand this. In the material

13 there's some talk about zirconium sands and you mentioned

14 zirconium sands.

15 Is there any case where NRC is currently licensing

16 anything having to do with zirconium sands or is this just a

17 norm question?

18 MR. COMFORT: No, I think that there are agreement

19 states that have licenses under -- in conjunction with our

20 Part 40 limits.

21 DR. HORNBERGER: Is this for processing the

22 zirconium sands?

23 MR. COMFORT: For processing it, but not just for

24 the holding of it or moving of it.

25 DR. WYMER: You must have something similar for

1 rare earths, mustn't you?

2 MR. COMFORT: Well, there is an exemption for rare

3 earths which is an interesting category also.

4 If you are processing for a rare earth to a

5 certain aspect you get an exemption versus if you are

6 pulling something than a rare earth out of it you don't.

7 You know, it is again consistency.

8 DR. HORNBERGER: Is there a problem given that

9 with duplicative regulation with OSHA because I would think

10 that OSHA would care about things like processing zirconium

11 sands.

12 MR. COMFORT: That is one of those things that

13 came up in the jurisdictional group and OSHA, one of the

14 concerns is if we transfer this out to EPA we don't have

15 control over the workers and anybody else but that aspect,

16 so OSHA would be stepping in to protect the workers.

17 DR. HORNBERGER: But they are not there now.

18 MR. COMFORT: They basically take the -- well,

19 first of all, they correct in the claim that they don't have

20 jurisdiction based upon their regulations that say if it is

21 licensed by NRC and are between the agreement, however the

22 material that we have either exempt or under general

23 license, which we really don't follow because the general

24 license material doesn't have to be Part 20 limits, they

25 further follow that same thing to say, well, NRC has the

1 regulation for it so we are not going to follow it.

2 Further, what was interesting is that they use the

3 ICRP-2 standards for regulating radiation there too.

4 DR. HORNBERGER: Who protects the uranium miners?

5 MR. COMFORT: The miners? I am not sure on that

6 one.

7 DR. HORNBERGER: Okay.

8 DR. STEINDLER: The definition of the working

9 level is in Part 20. The radon ALI limits in Table 2 are in

10 Part 20, measured as working levels, working level month.

11 MR. LARSON: I used to be on an ANSI standards

12 committee where the Public Health Service were the ones that

13 presented the results of the working level limits on the

14 Colorado plateau, but I just have three little comments, two

15 observations.

16 One is that this is an interesting meeting because

17 like the West Valley presentation on Tuesday this one sort

18 of defies the logical train of how things are done.

19 DR. HORNBERGER: You said that for the record?

20 MR. LARSON: And I am sure that Dr. Steindler

21 sitting over there thinks back years ago when he tried to

22 interest the Agency into some consistency in regulations

23 between just high level and low level waste.

24 You know, we treat the same isotopes differently

25 depending on whether they are going to be high level or low

1 level, but the third question was it seems like most things
2 are coming to fruition or junction in March and then you are
3 going to make some recommendations to the Commission.
4 What is the intention to go from there? Is it
5 that you are going to go out for public comment or advance
6 notice of rulemaking or what?
7 I guess I missed where we go from here.
8 MR. COMFORT: Okay, well, the approach is that we
9 are going to provide a rulemaking plan which will include a
10 proposal of where to go from here to the Commission and
11 based upon what they approve would go from there.
12 If our proposal is let's go forward with the
13 rulemaking to change the following types of areas, and they
14 come back and say yes, then we will go forward with the
15 notice of proposed rulemaking and whatever other regulatory
16 steps are needed.
17 MR. LARSON: But you publish all the results of
18 all of these working groups and task forces and everything
19 else since they have been formulated in an SRN in a public
20 arena?
21 MS. HANEY: It would be in open meetings.
22 MR. COMFORT: Yes, it would be in open meetings.
23 Actually, what we are doing right now is all in
24 open meetings in the way of the preparatory. We had members
25 of the public at the working group in the last couple days

1 from NEI and other areas and the same with the
2 jurisdictional group. They had members of the public at
3 those groups also who had interests and we allowed them also
4 to do, you know, actually present or speak at certain times
5 and they did have public opinions.
6 MR. LARSON: And there's reports written that
7 would be made available?
8 MR. COMFORT: Yes, there are meeting minutes of
9 each of these meetings.
10 MR. LARSON: They are on ADAMS?
11 MR. COMFORT: Well, when they are put out, yes.
12 MS. SCHNEIDER: And there is a webpage.
13 MR. COMFORT: And there is a webpage that will
14 also direct you to all of this and all the related material.
15 Your question on the mining actually I did
16 remember that because it did come in the jurisdictional and
17 that is not done by OSHA but there is mining safety group
18 that is responsible for it but it is not NRC.
19 DR. GARRICK: Yes. They keep giving the WHPPS
20 awards every year for good mining practices.
21 DR. HORNBERGER: Other questions from other Staff?
22 [No response.]
23 DR. HORNBERGER: Anyone else?
24 [No response.]
25 DR. HORNBERGER: Thanks very much, Gary.

1 MR. COMFORT: Thank you.

2 DR. GARRICK: One thing. I wanted to thank you

3 because you honored the 50 percent rule allowing 50 percent

4 of your time for discussion. That helps a great deal.

5 MR. COMFORT: Okay, thanks.

6 DR. GARRICK: We are doing very well. Why don't

7 we take our break now and then we will come back and start

8 our report work -- fifteen minute break.

9 [Whereupon, at 9:50 a.m., the recorded portion of

10 the meeting was adjourned.]

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

REPORTER'S CERTIFICATE

This is to certify that the attached proceedings before the United States Nuclear Regulatory Commission in the matter of:

NAME OF PROCEEDING: 122TH ADVISORY COMMITTEE ON NUCLEAR WASTE

PLACE OF PROCEEDING: ROCKVILLE, MD

were held as herein appears, and that this is the original transcript thereof for the file of the United States Nuclear Regulatory Commission taken by me and thereafter reduced to typewriting by me or under the direction of the court reporting company, and that the transcript is a true and accurate record of the foregoing proceedings.

Mark Mahoney

Mark Mahoney
Official Reporter
Ann Riley & Associates, Ltd.