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Management Program Workshop

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ATTACHMENT 1

1 UNITED STATES NUCLEAR REGULATORY COMMISSION

2 ***

3 AGREEMENT STATE SITE DECOMMISSIONING

4 MANAGEMENT PROGRAM WORKSHOP

5
6 William F. Bolgar Academy

7 9600 Newbridge Drive

8 Potomac, Maryland

9
10 Wednesday, March 23, 1994

11
12 The above-entitled workshop convened, pursuant to
13 notice, at 8:10 a.m.

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P R O C E E D I N G S

[8:10 a.m.]

MR. BANGART: Good morning, ladies and gentlemen. This is the Agreement State Site Decommission Management Plan Workshop. I'm Dick Bangart with the Office of State Programs for the NRC, and I'll be serving as the moderator for the workshop today.

We are still missing just a couple of people but it's already almost ten after s. I don't want to delay any further.

Let's start out by going around the room and introducing ourselves. Randy?

MR. RAGLAND: My name is Randy Ragland. I work at Facilities Radiation Protection Section in Region I.

MR. WALTER: I'm David Walter with the State of Alabama.

MR. WRIGHT: Bill Wright with the State of Arizona.

MS. DICUS: Greta Dicus, the State of Arkansas.

MR. SIMPSON: Don Simpson, State of Colorado.

MR. HILL: Tom Hill, State of Georgia.

MR. PASSETTI: Bill Passetti, State of Florida.

MS. DIBBLEE: Martha Dibblee, State of Oregon.

MR. VOLPE: John Volpe, Kentucky.

MR. SANFORD: Jim Sanford, Louisiana.

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1 MR. OWEN: Bob Owen, State of Ohio.

2 MR. HALLISEY: Bob Hallisey, the Commonwealth of
3 Massachusetts.

4 MR. FUENTE: I'm really Eddie Fuente from
5 Mississippi, but it just so happened they got me in
6 Missouri. I don't know if NRC is trying to tell me
7 something or not -- maybe they want Missouri to become an
8 agreement state and they want me to move up there and take
9 over that position, so -- but I'm going to take this to the
10 meetings, NRC meetings.

11 MS. TEFFT: I'm Diane Tefft from New Hampshire.

12 MR. BANGART: Do you want to go back in the back
13 there?

14 MR. ALLEN: I'm John Allen, GAO.

15 MR. OLSON: Phillip Olson, GAO/Washington.

16 MR. BAILEY: Odell Bailey, GAO/Detroit.

17 MR. TSE: Anthony Tse, NRC.

18 MS. OPAL: Phyllis Opal, NRC.

19 MR. NELSON: Bob Nelson, NRC.

20 MR. LENTZ: Jack Lentz, NRC.

21 MR. MACABEE: Douglas MacAbee, State of Maryland.

22 MR. O'DELL: Dennis O'Dell, State of Maryland --
23 or New Hampshire.

24 MS. McBAUGH: Debra McBaugh, State of Washington.

25 MS. FELICE: Julie Felice, State of Utah.

1 MR. CARDWELL: Tommy Cardwell, Texas.
2 MS. ROGERS: Alice Rogers, Texas.
3 MR. GRAVES: Johnny Graves, Tennessee.
4 MR. BATAVIA: Max Batavia, South Carolina.
5 MS. REILLY: Maggie Reilly, Commonwealth of
6 Pennsylvania.
7 MR. COLLINS: Steve Collins, Illinois.
8 MR. RIMAWI: Karim Rimawi, New York State Health.
9 MR. KAVICHEK: Jack Kavichek, New York State
10 Department of Environment and Conservation.
11 MR. KULIKOWSKI: Bob Kulikowski, the City of New
12 York.
13 MR. HOWELL: David Howell, North Carolina.
14 MR. BEARD: Mike Beard, Nebraska.
15 MR. BUCHANAN: Mike Buchanan, NRC Region III.
16 MS. CARDWELL: Cynthia Cardwell, Texas.
17 MS. WALLE: Marjorie Walle, Illinois.
18 MS. STEINER: Patty Steiner, NRC.
19 MR. GOLDBERG: Walt Goldberg, NRC.
20 MR. AUSTIN: John Austin, NRC.
21 MR. JOHNSON: Tim Johnson, NRC.
22 MR. LYNCH: Gerald Lynch, NRC Region III.
23 MR. CORDON: Ray Cordon, NRC Region I.
24 MR. COMBES: Tom Combes, NRC.
25 MR. WEBER: Mike Weber, NRC.

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1 MR. BANGART: We're going to reconfigure this room
2 at the break this morning and get the people who are back
3 behind the table here down there with the rest of the people
4 that are not at the table so they won't be segregated.
5 We'll try to get the NRC folks and the State folks in closer
6 proximity.

7 Just a few administrative things. If you don't
8 know where they're located the restrooms are out the door
9 and to your left. Phones are straight across the lobby. We
10 do have a dining room that's reserved for lunch for us. If
11 you're not staying at the hotel I believe the lunch is going
12 to cost \$6. Is that right, Tom?

13 MR. COMBES: That's right.

14 MR. BANGART: I also at the outset want to thank
15 Tom Combes who is on rotation in the Office of State
16 Programs and Nick Orlando from NMSS who have organized this
17 workshop, and I also want to thank Brenda Hill of the Office
18 of State Programs for making the arrangements for the
19 accommodations and the travel.

20 So if you need any help on logistical arrangements
21 or whatever they'll be glad to help you, I'm sure.

22 There are two major objectives that we hope to
23 accomplish with the workshop today. The first, we plan to
24 provide some historical information that describes the
25 evolution of NRC's program for regulating the remediation of

1 problem contaminated sites.

2 We think that information should provide some
3 useful insight about why the NRC/SDMP has grown to be such
4 an important NRC program and why a similar program may be
5 needed at least in some of the agreement states.

6 The second objective I think obviously is to share
7 experiences. We can all learn from each other about how we
8 solve some of the problems associated with particularly
9 complex contaminated sites.

10 The kind of problems you can find involve
11 technical issues, financial matters, legal matters,
12 political matters, public involvement, media involvement,
13 government agency interaction and policy issues. And if
14 you're real lucky, problems in all of those areas will be
15 associated with one of the sites that you're dealing with.

16 After this workshop what can you expect that the
17 next steps will be on the part of the NRC to coordinate our
18 respective programs to regulate problem contaminated sites?
19 The immediate next action is for us, the NRC staff, to
20 respond to the Commission with the final compilation of
21 information that we requested from you in the questionnaires
22 that were sent out last fall, and more recently in advance
23 of this workshop.

24 I think that you all have seen the draft
25 compilation of information and you've been asked to give us

1 feedback as to whether or not you think that accurately
2 reflects the information that you provided.

3 Based on the compilation of information about your
4 programs and the additional discussions that we're going to
5 be holding here today, we will be providing the commission
6 with an evaluation of whether we think any additional NRC
7 initiatives are necessary or whether there's any technical
8 support that we should be providing to Agreement States so
9 that there can be a consistent national program in place to
10 assure that there is both adequate and timely remediation of
11 contaminated sites.

12 One question that is apparent to us right now is
13 the one that addresses the issue of whether or not we should
14 support or encourage Agreement States to go back and look at
15 terminated license files to see if there are any existing
16 sites that are no longer licensed that at least are suspect
17 in terms of the residual contamination levels that are
18 present, and whether or not there should not be additional
19 review done to see whether or not those levels are
20 consistent with today's cleanup criteria versus the criteria
21 that are in -- were in place when the licenses were
22 terminated.

23 You'll hear more today from Paul Goldberg about
24 NRC's efforts, which are considerable, to review previously
25 terminated license files.

1 We welcome your views about the additional actions
2 that you think NRC should initiate or whether there are some
3 existing things that we're doing that you think should be
4 modified.

5 This is an especially good opportunity for you to
6 discuss actions that you think in Agreement States, either
7 individually or collectively, should initiate to address the
8 problems that are associated with contaminated sites in your
9 particular states.

10 We also look forward later this year to the
11 results of a General Accounting Office audit of NRC's SDMP
12 program. The audit as we understand it may address the
13 Agreement State regulation of contaminated sites and NRC's
14 over-sight and coordination of SDMP-type activities.

15 The results of this audit should be useful in the
16 future in the formulation of each of our respective programs
17 dealing with contaminated sites.

18 You can also expect that in the future the
19 Agreement State program reviews will be focusing more on
20 your individual activities to clean up contaminated sites.
21 We'll be looking at whether or not you are seeking potential
22 problem contaminated sites; the kinds of controls that you
23 have in place to prevent the spread of contamination and to
24 minimize exposure to members of the public; and to assure
25 that there is both adequate and timely remediation of those

1 sites.

2 So with that as background we'll get started with
3 the main part of the program this morning. Later this
4 morning Hugh Thompson from the Office of the Executive
5 Director for Operations will be joining us. He'll be
6 providing the presentation right before lunch, and he'll be
7 staying with us and joining us for lunch as well. So if you
8 have any big policy issues he's the person to direct those
9 questions to.

10 Are there any questions at this point?

11 [No response.]

12 MR. BANGART: Okay, if not, we'll start with John
13 Austin who will give us the background of how we got to
14 where we are with the NRC's program. John, I think most of
15 you know, is the Chief of the Decommissioning and Regulatory
16 Issues branch in the Office of Nuclear Materials Safety and
17 Safeguards and it's because of John's effort and the effort
18 of his staff that the program has become what it is with
19 NRC.

20 John?

21 MR. AUSTIN: Thank you. I have to say I'm very
22 pleased to be here. I had this notion that this workshop
23 was going to be in the former chapel in the other building,
24 because we need all of the divine guidance and help that we
25 can get. But fortunately we learned where it was.

1 If I could have the outline -- As Dick mentioned,
2 I'd like to go over some of the history, the world of
3 decommissioning of complex sites. And what led to the
4 creation of the Site Decommissioning Management Plan.

5 I'll be covering the criteria for listing a site
6 on the SDMP's and criteria that we now need to de-list,
7 which is an encouraging aspect of the program.

8 I'll be discussing an action plan that was created
9 in 1992 to further facilitate timely decommissioning. And
10 I'll be covering the contents of that action plan,
11 activities that have occurred since we have adopted the
12 action plan. I'll briefly go over some of the issues which
13 will be elaborated on further in the program today and then
14 discuss some of what we expect to be future activities.

15 If I could have the next chart, please -- Each
16 year we, the NRC, terminate a few hundred licenses that are
17 generally very straight-forward, Form 341 I think it is is
18 submitted, maybe a survey by our Regional offices, and the
19 license terminated.

20 Most of these are very straight-forward. A few
21 each year involve licensees that want to terminate their
22 license that involve very complex thorny issues that have
23 led to significant delays in the termination of the license.

24 And these delays have been up to ten years or more
25 in a few cases. Which as been very frustrating for the

1 Agency, frustrating for the licensee, frustrating for the
2 communities. And they posed very challenging issues that we
3 will be getting into.

4 In the 1980's the General Accounting Office
5 audited the decommissioning program several times. In 1989
6 they issued a report, Congressman Synar held a hearing and
7 at that hearing the Agency was reminded, unfortunately, of a
8 few sites that were contaminated that had been lost in the
9 history.

10 This captured the attention of the Commission and
11 a lot of commitments were made at that hearing including as
12 Dick mentioned the review of terminated licenses to see if
13 there were additional sites out there that had escaped the
14 memory of the Agency that needed further attention.

15 After that hearing the staff developed a strategy
16 for decommissioning. The Commission wanted more, a more
17 substantial program for follow-up on contaminated sites.
18 And that led to in March of 1990 the creation of the Site
19 Decommissioning Management Plan.

20 At that time the Plan had somewhere around 40
21 sites that needed further attention. It has grown since
22 then.

23 If I could have the next slide on -- what the SDMP
24 is -- the SDMP describes non-routine decommissioning
25 actions. It now lists a total of about 50 sites. These

1 sites have one or more complex issues associated with them
2 that require policy decisions, legal decisions or technical
3 decisions.

4 It documents our approach to resolving the issues,
5 to facing up to the site, the licensee and establishing what
6 needs to be done to decommission the site. It describes the
7 regulatory tools that we need to further enhance and to
8 bring about timely decommissioning. It identifies policy
9 issues, legal issues and a few technical issues.

10 It serves as a tracking system for following
11 progress on resolution of issues as well as resolution of
12 the actual decommissioning of the site.

13 It also serves as a way to manage the progress on
14 resolution of issues and decommissioning of the sites. I
15 have to say that Chairman Selin and our executive director
16 for operations have taken a personal interest in this
17 program. We have briefed the executive director for
18 operations periodically on issue resolution, site
19 decommissioning, under the concept that allowing these sites
20 to linger on and not face up to the obligations of the
21 licensee is a unflattering representation of our regulatory
22 program.

23 When a facility goes into decommissioning the
24 profits have been extracted. And now it's just a matter of
25 spending money with no return. So there's not the financial

1 incentive in these licensees to perform the obligations that
2 they have. Which presents a challenge.

3 You know, in reactor space if we expect something
4 to be done by a utility at their plant we always have the
5 threat of the shutdown, costing big dollars. Termination of
6 the license, costing big dollars.

7 Here, if we threaten to terminate the license they
8 welcome it. So yes, people in the '70s, applicants in the
9 '70s used to complain about how difficult it was to get a
10 license from the NRC. Now a few of them are complaining
11 about how difficult it is to give it back.

12 But that's our job, to ensure that these sites are
13 remediated in an appropriate manner.

14 If I could have the next slide on the criteria for
15 listing.

16 We list five here. If there is a problem with
17 remediating a site and a question about the ability of the
18 licensee to finance the decommissioning we deem that a
19 problem site deserving special management attention about
20 how to go about ensuring decommissioning.

21 One of our greatest problems is -- involves sites
22 that have very large quantities of contaminated soils or
23 contaminated slags. They have accumulated over decades.

24 In some cases companies have been sold, resold.
25 The product that they were producing was not priced to

1 reflect ultimate decommissioning of these piles. The
2 products now in some cases, the prices have plummeted. And
3 raising the question about cash flow, where is the money
4 going to come from, to disposition of the piles.

5 In some cases there have been buildings that have
6 been contaminated for some time. Old ponds that have been
7 in essence out of service for quite some time without a
8 resolution on what to do about the ponds. We list those.

9 As we review the terminated files we find that
10 there are some cases that there is not an adequate
11 documentation of how the site was decommissioned, what kind
12 of surveys were performed. Paul Goldberg will be describing
13 that program.

14 He's providing us a lot of business. Job
15 security. I think we're adding three to four sites a year
16 and he keeps threatening to send another slew of sites to us
17 for dispositioning.

18 And we have sites where there is a groundwater
19 problem. For those of you who have been paying attention to
20 Environmental Protection Agency issues, groundwater is being
21 treated almost as a sacred commodity that the EPA is looking
22 for in all of our standards, some kind of groundwater
23 protection measure. And so those present special problems
24 and we list sites that have contaminated groundwater on the
25 SDMP.

1 The next slide we are starting to use a little
2 more frequently now, and that is how to get a licensee or
3 former licensee off the SDMP list. One way is to make a
4 determination that the site has been adequately remediated
5 such that the site can be returned for unrestricted use and
6 the license terminated.

7 For operating sites we look to areas within the
8 license that can be decommissioned at this point in time
9 that are no longer serving a useful purpose for the
10 activities under the license. And in that case we would
11 modify the license to reflect that portions of the site are
12 suitable for unrestricted use and remove them from reference
13 within the license.

14 For unlicensed sites and when they have completed
15 the remediation of the site, we do send a letter to the
16 former licensee or responsible party, a letter that notifies
17 them that we no longer have regulatory interest in that
18 site. And later today I will be talking more about this
19 finality aspect, which is a very important aspect on the
20 minds of licensees and former licensees.

21 And we take off a site on the SDMP when an
22 Agreement State is formed and assumes full responsibility
23 for over-sight of the remediation at the site.

24 The next slide gets into our SDMP Action Plan. As
25 I said, the SDMP was created in 1990. And we were making

1 progress on resolution of some of the issues, but in the
2 fall of 1991 when Chairman Selin had been in office for a
3 few months, he requested a paper on SDMP activities and
4 noted that while there had been progress on resolving some
5 of the issues that the progress on actual remediation of
6 these sites had been slow in coming.

7 Chairman Selin and the executive director for
8 operations were taken aback at the lack of visible progress,
9 at the ultimate goal of the program. And they directed the
10 staff to develop a more aggressive program to ensure timely
11 decommissioning.

12 After a series of Commission meetings on
13 strategies to compel decommissioning -- and keep in mind
14 there's nothing in the regulations that say when
15 decommissioning has to occur, it just says it occurs
16 sometime -- the staff developed what became the Action Plan.

17 On April the 6th of 1992 the Commission
18 unanimously approved the Action Plan. And it was published
19 in the Federal Register about a week later.

20 The next chart covers the contents of the Action
21 Plan. It brought a lot of stability to the program. What
22 we had found in the first two years of operating under the
23 SDMP was that there were a lot of different views on what
24 the remediation criteria should be, how do you define
25 unrestricted use.

1 There were varying views on how to enforce the
2 decommissioning regulations in the absence of codified
3 standards. There were issues on whether we should commit to
4 finality at this time or state that if there is a standard
5 more stringent than what we have today that is adopted
6 sometime in the future, should we back-fit that. And the
7 Action Plan established the Commission's position on all of
8 these issues.

9 It resolved the residual contamination criteria
10 which I'll be discussing later today, and the finality
11 issue. The Commission expressed its intent on what
12 timeliness meant. That facilities that were no longer
13 serving or areas of the site that were no longer serving a
14 useful purpose in the activities authorized by the license
15 should be decommissioned as soon as practical and that in
16 any event something like a three-year period should be
17 sufficient in most cases to decommission the sites.

18 The Commission endorsed criteria for
19 characterizing a site. And I believe Tim Johnson will be
20 talking about that later as the very important first step in
21 decommissioning.

22 And finally, the action plan importantly described
23 what type of enforcement actions we might take to compel
24 timely decommission.

25 The next chart -- next two charts, I believe --

1 describe some of the activities that we have been engaged in
2 since the action plan was adopted. There was a press
3 release at the time. It was released by Benaro who held a
4 press conference, and we found that while we went into the
5 Action Plan thinking that we would single out five or six
6 sites to pay a lot of attention to, try to develop
7 experience on using these enforcement tools and based on
8 those experiences with six sites we would then regroup and
9 consider the Action Plan again.

10 The press conference and its coverage, both within
11 the Washington area and in the locality of these sites,
12 captured the attention of everyone listed on the SDMP. And
13 my sense is that in the past when a manager of a site went
14 to the board of the corporation saying that they wanted
15 large sums of money to decommission, the boards would come
16 back and say why now, who's forcing you.

17 Now those managers can go to the board with press
18 releases that are not flattering to the corporation and
19 capture the attention of the money managers of these
20 corporations and they are in most cases paying a lot of
21 attention and a lot of money to carry out their final
22 obligation under the license.

23 We have removed three sites from the listing. And
24 we have terminated one of two licenses at one of the sites
25 since the Action Plan has been in effect. We think that we

1 can remove up to seven additional sites this year. We're
2 right now preparing memoranda to the Commission on two sites
3 that -- informing them that the sites have been remediated
4 and they are suitable for returning to unrestricted use.

5 As I mentioned, we are adding sites to the list,
6 unfortunately, at this time at a faster rate than we're
7 removing them. Hopefully within another year or two that
8 trend will be reversed and the victories will outnumber Paul
9 Goldberg's effort.

10 We are finding that it is very important to
11 interact with the EPA headquarters, EPA regional offices as
12 well as a variety of organizations within the states. We're
13 learning more and more about landfill permits that -- at
14 states that can have an impact on the options that are
15 available to a licensee as whether they can leave a burial
16 behind, whether they have to exhume a burial.

17 And we're approaching those cases through
18 development of agreements, formal agreements, memoranda of
19 understanding, laying out coordination procedures, having
20 joint meetings. Not issuing a directive without
21 coordinating with EPA or the state to ensure that the
22 Government speaks with one voice and it's no one's interest
23 for us to go down a path using some of our criteria to find
24 out that there may be a state regulation that prohibits or
25 somehow alters our thinking or our criteria.

1 Finding that out late in the game is extremely
2 frustrating.

3 We found that there is a lot of interest in the
4 SDMP. It used to be in the form of what we call a "secky
5 paper," and it goes to the Commission. It's a very arcane
6 way of distributing information to the outside interests, so
7 this last year we published the SDMP as a NUREG to
8 facilitate its distribution. It's NUREG 1444.

9 We anticipate updating it through this year, a
10 brief summary of activities to the Commission in a secky
11 paper and probably next year we would issue a supplement to
12 NUREG 1444 to document what I think will be substantial
13 progress that we have achieved over the last few years.

14 We have issued orders. Candidly, we have yet to
15 stretch our -- what we think is our authority -- to the
16 extreme. Although I think there are a few things brewing
17 that we may have a test of how far we can go with orders to
18 non-licensees today or even to some licensees.

19 There are several hearings before our licensing
20 boards involving SDMP sites, and those are always a joy.
21 But at least it provides added emphasis for us to have our
22 logic well in order to go before a board.

23 The next chart continues on the activities. We
24 have promulgated a final rule on record-keeping, which
25 requires that there be in one location all documents related

1 to decommissioning. We would retain those files forever for
2 the purpose of allowing anyone to come in in the next 10,
3 20, 50, a hundred years to see what we did, why we did it
4 and how we reached our conclusion that this site was
5 suitable for unrestricted use.

6 We have issued a proposed rule on the timeliness
7 in decommissioning which tries to set up a clock that starts
8 ticking when business activities have been completed. That
9 clock would start in a way that we would not interfere with
10 business decisions.

11 Some licensees believe that their product may pick
12 up in demand five years from now or three years from now, so
13 it would be inappropriate for the Federal Government to
14 inappropriately force them to go out of business when there
15 may be a viable corporation there providing a valuable
16 service in the future.

17 And when to start this clock was one of the most
18 difficult things to try to codify in the proposed
19 regulation. That proposed regulation calls for
20 decommissioning to be completed in about three years unless
21 there -- and it has a built-in exception to it. In the
22 event that there are circumstances beyond the control of the
23 licensee such that more than three years would be required,
24 we could administratively approve that without going through
25 the formality of issuing an exemption.

1 Hopefully that rule will go to the Commission in
2 final form within a month or so.

3 We have drafted -- not proposed, but drafted --
4 decommissioning criteria. And that will be discussed later
5 in the day. We have come out with a NUREG on how to conduct
6 surveys. That's NUREG CR5849. It's a draft document. But
7 we are encouraging licensees to use it.

8 Surveys are the proof of the pudding. It is -- it
9 develops the data that would serve as the basis for license
10 termination or removal of the site from the list. We have
11 developed a draft branch technical position on how to go
12 about characterizing a site in terms of groundwater,
13 retardation coefficients.

14 It is a rather comprehensive document but it is --
15 I think we just lost the audio -- There is a tension between
16 site characterization and site remediation. In many cases
17 there is a fixed sum of money available to go through the
18 whole process. And what we have to do is strike a balance
19 between obtaining sufficient information about the site
20 characterization, or about the site characteristics, so that
21 we can perform dose assessments versus having sufficient
22 funds available to ultimately dispose of the money -- or
23 dispose of the waste.

24 So we are still sorting through on a case-by-case
25 basis as to how much site characteristic information we

1 need. For difficult cases we resolve the ultimate
2 remediation standard through the environmental impact
3 statement process, looking at all the alternatives, cost
4 benefit analysis.

5 A lot of attention has been given to what is the
6 -- what are the decommissioning criteria. But what we're
7 finding is that establishing the line between acceptable and
8 unacceptable is easier than establishing where one is in
9 relationship to that line.

10 We've had a lot of debates about what scenarios do
11 you consider in a dose assessment. What uses of groundwater
12 do you consider in your dose assessments. That has
13 candidly burnt up a fair amount of staff time debating these
14 esoteric subjects. So we have put together a branch
15 technical position in draft form on scenarios to be
16 considered.

17 The first scenario that we like is the family
18 farm, use the groundwater for consumption on-site, for
19 irrigation, grow crops on the site. And go through that
20 dose assessment and if the doses are acceptably low we stop
21 there and say we're conservative and everything is okay.

22 In those cases where the doses are questionable,
23 questionably high, we start thinking about the practicality
24 of the scenarios that we have considered is the groundwater
25 potable, would it ever be used for irrigation, could it

1 support consumption. Is the area an industrial -- in an
2 industrial area.

3 We recognize that there are some tracts of land
4 that it's very unlikely to be returned to the farming and
5 take those -- try to take those out of the dose assessment
6 and see whether the residual dose assessment is at an
7 acceptably low value and go from there.

8 We're finding it is very important to involve
9 stake-holders in these decisions. The public has a right to
10 know, has a right to be involved and they are interested.
11 And we are intending to have more and more of an outreach
12 program to involve the public.

13 The environmental impact statement process calls
14 for it. We have scoping meetings on what should be included
15 in an environmental impact statement. And hopefully we --
16 well, the goal is to minimize the outrage factor.

17 We're finding that for those cases where the
18 licensee has involved the public early on the process goes a
19 lot smoother. In those cases where the licensee ignores the
20 public they become much more contentious.

21 So the trend is, keep the public well-informed.

22 The next chart covers some of the issues that we
23 are facing now. As Dick mentioned at the outset, GAO is
24 auditing the overall program and our friends from GAO are
25 here, and I welcome you.

1 I hope I'm saying things here that is consistent
2 with what I've said to you all. And we do look forward to
3 your report and recommendations on improvements that can be
4 made to the program.

5 We are finding that after going through all of the
6 agonizing steps of the decommissioning process that when we
7 send our contractor, the Oak Ridge Institute for Science and
8 Education -- it used to be Oak Ridge Associated Universities
9 -- that when they go to the site to confirm what the
10 licensee has submitted to us by way of a final survey that
11 there is in fact still significant residual contamination at
12 some of the sites.

13 That's very frustrating to us, to the licensee,
14 meaning that -- or leading to them to have to remobilize
15 their contractors to go out and do it one more time. And
16 leading to an emphasis on the importance of the orderly
17 process of remediating, surveying and developing guidance on
18 what constitutes a final survey, some licensees survey as
19 they remediate leaving the question as to have they stepped
20 back and tried to learn the lessons of what these surveys as
21 they remediate are telling them.

22 Just chasing a hot spot until it is no longer
23 there may not be an adequate technique because obviously we
24 don't have 100 percent survey of all areas, but rather it is
25 a statistically based survey that is designed to lead to

1 high confidence that there are not unacceptable
2 contamination zones. But licensees have to pay careful
3 attention because to find them in other areas is very
4 troubling as to the ultimate disposition of large volumes of
5 thorium contamination.

6 I'll be speaking more about that later, but the
7 short story of it is that its daughters have rather strong
8 gamma rays and thallium 208 has something like a two MVV
9 gamma and that means that the direct exposure pathway is
10 rather significant in raising the importance of the human
11 intrusion scenario.

12 I have mentioned the need to coordinate with the
13 states on solid and hazardous waste. There will be a
14 separate session on this later today. I've mentioned public
15 involvement and their right and need to be informed of
16 what's going on.

17 On financial assurance, we do have regulations
18 requiring all licensees to have assurance of funding for the
19 ultimate decommissioning of the sites. That regulation
20 works very well for new applicants. We can require them to
21 put the money up, some kind of funding mechanism, before
22 issuance of the license. They can factor in that cost in
23 the product or the service that they are engaged in.

24 But for those that have accumulated large volumes
25 of waste over decades it is rather difficult to back-fit a

1 funding mechanism. Cash flow becomes a problem and we have
2 one licensee that is in Chapter 11 now. And raising
3 substantial issues about how to ensure decommissioning of
4 their sites.

5 We're also confronted with an issue of when to
6 conduct any hearing that may be desired by the stake-
7 holders. Licensees tend to like to avoid or postpone as
8 much as possible hearings on the issues. We believe that
9 there is merit in having the hearing sooner in the process
10 rather than later because if there is a problem with the
11 site characterization we don't want to hear about that when
12 we're trying to reach a decision on the remediation method.

13 For our future activities on the last chart, we
14 have found workshop formats to be invaluable. The affected
15 community has requested that we have a workshop on how to go
16 about surveys. They have a very large number of issues
17 involving things like hot spots, hard to detect
18 radionuclides, should all beta emitters be treated the same
19 or should we allow higher concentrations of lower energy
20 beta emitters. And issues like that.

21 And we're going to have that workshop in May this
22 year. We're trying to put together a workshop with our
23 regional offices. We're finding that with all of the
24 activities going on within the program that we make a little
25 policy decision here, a little policy decision there. And

1 as we're racing along we don't have time to step back and
2 say what -- how do all of these fit together and do all of
3 the regions know of these little policy decisions that we're
4 making. And this workshop would help convey to them some of
5 the things that are going on on a day-to-day basis within
6 headquarters.

7 NUREG 5849 is a very valuable document for
8 conducting surveys, but it does not answer all of the
9 questions and we are going to prepare some clarifications of
10 what our expectations are on conducting -- licensees
11 conducting their final surveys.

12 We're finding that on our confirmatory surveys
13 that there is a need for a clarification of what we are
14 expecting them to do. Our confirmatory surveys through our
15 contractors are not a repetition of the final survey
16 conducted by the licensee. Rather it is like an audit.

17 And we want that audit to be biased in favor of
18 finding contamination in unexpected areas. But at the same
19 time the cost of those confirmatory surveys can run up very
20 quickly and we want to strike a balance between adequate
21 assurance and cost of the confirmatory surveys.

22 We are going to be using the environmental impact
23 statement process to resolve the more difficult remediation
24 standards for those that depart from standards that we have
25 used in the past.

1 The rule makings involved in decommissioning have
2 all been given high priority. The highest one is the one on
3 the decommissioning criteria, and I think Chip Cameron will
4 be here later today to talk about that very important rule
5 making.

6 The Commission has directed the staff to work with
7 the Environmental Protection Agency to try to harmonize risk
8 management goals and risk assessment methodologies. I think
9 Bob Nelson will be talking a bit about that effort. It's a
10 rather fundamental exercise within the two agencies.

11 We're finding that we are not internally
12 harmonized and EPA is not internally harmonized. But it is
13 bringing together in one place risk management practices
14 from the various operations within NRC and EPA, and should
15 serve as a rather educational document and very informative
16 document.

17 You will be hearing later today a lot more about
18 many of the issues. They are not all resolved at this point
19 in time, but we do not allow that to be an excuse for not
20 having progress made at the sites that need to be
21 decommissioning -- to be decommissioned.

22 We think that the SDMP Action Plan approved by the
23 Commission provides sufficient resolution of the more
24 fundamental issues that licensees and responsible parties
25 should get on with their obligations today, and no longer

1 postpone the ultimate resolution.

2 And I understand you all are very friendly and
3 don't have tough questions to ask, so I'll turn it back over
4 to Dick Bangart.

5 MR. BANGART: Are there any questions for John?

6 I knew Ed would have a question.

7 MR. BAILEY: Ed Bailey, State of California.

8 Several times you used the expression "acceptably low." I
9 guess my question is, do you have those defined in
10 regulations as acceptable to who. The second question, you
11 mentioned that early participation by the public results in
12 good results. I'd like some examples of that. And do you
13 intend to use the EPA model for that.

14 Is this going to be an item of compatibility and
15 who is going to pay for it? That's all the questions I
16 have.

17 MR. AUSTIN: Yes, yes, no and maybe.

18 What is acceptably low? NRC has the legislative
19 mandate to determine what is a -- what is no undue risk to
20 the public. We have over the years developed -- translated
21 that concept into first doses, dose rates, exposure rates.
22 And then into concentrations of radionuclides on surfaces or
23 in soils.

24 What we have done over the decades is to generally
25 use a few millirem per year conservatively determined up to

1 a few tens of millirem per year exposure rates.
2 Conservatively determined.

3 Those are a matter of public record. At any point
4 that we go to a site to meet with the public we state that.
5 I think today I have not used the words "cleanup" or
6 "decontaminate." I try not to use those words because I
7 think they're misleading.

8 We try to make it clear that we are reducing the
9 level of contamination to an acceptable level. That there
10 is known to be contamination at sites, that it's impractical
11 to reduce it to -- it's impossible to reduce it to zero.
12 And it's our professional judgment that exposure rates of a
13 few millirem per year to a few tens of millirem per year in
14 some cases is acceptable as a matter of public policy.

15 The enhanced participatory rule-making on
16 decommissioning criteria has had extensive input from
17 environmental communities, from state and local people, from
18 public interest groups and the public in general. And we
19 are attempting to codify acceptable residual contamination
20 criteria through the rule-making process.

21 Does that satisfy the acceptably low?

22 MR. BAILEY: No, because I remember just 500.

23 MR. AUSTIN: It's not 500 today. It's 100. And
24 ALARA. We use ALARA extensively in our determinations on a
25 site-by-site basis.

1 MR. CARDWELL: Excuse me, isn't it proposed to be
2 background or 3 millirem or 15 millirem?

3 MR. AUSTIN: That's a goal.

4 MR. CARDWELL: Background is a goal. Three
5 millirem, ALARA --

6 MR. AUSTIN: Background is --

7 MR. CARDWELL: 15 is going to be a limit.

8 MR. AUSTIN: Yes. Background with three being a
9 practical definition of what is background. 15 the limit.
10 But that's -- our system of government resolves those
11 matters through the Administrative Procedures Act. We're
12 following it. And that rule-making will define acceptability
13 of residual contamination.

14 MS. DIBBLEE: Martha Dibblee of Oregon. When we
15 have to work with EPA on sites we have to be compatible with
16 the EPA criteria, and we use 10 millirem, this usually will
17 fall within the EPAs quantitative analysis criteria. They
18 speak a little different language than we do, but I'm told
19 it's the same. And I think it's very important that we
20 understand their way of doing business and they understand
21 our way of doing business.

22 There's no sense in having the licensee do two
23 separate remedial investigations, one for EPA and one for
24 us.

25 The other comment I have is that I believe May

1 19th is the week of the conference; is that correct? Is it
2 just prior?

3 MR. AUSTIN: Unfortunately for bureaucratic
4 reasons the letters have not gone out, so it is -- we were
5 anticipating your question, so it is possible to change that
6 date. If there is substantial interest here in attending
7 the survey workshop we can try to accommodate you.

8 I see a lot of heads nodding, so Dave Fauver,
9 you're taking note? Thank you.

10 I didn't get to the -- your question about early
11 participation by the public leading to favorable results.
12 The one that comes immediately to mind is the
13 decommissioning of the Ft. St. Vereen reactor in Colorado.

14 The utility there has had for a very long period
15 of time a substantial public outreach program, and that
16 decommissioning case is going very smoothly. And they and I
17 would attribute it to their good standing within the
18 community. The glass is half-full.

19 On using the EPA model for public participation,
20 they do have much more of a documented developed program for
21 public involvement. There is legislation that directs them
22 in some cases how to interact with the public. We are
23 tending in that direction.

24 There is no effort underway at this point in time
25 to adopt their model, but I think you will be hearing later

1 today on the decommission criteria and rule-making, the
2 concepts of how to involve the public.

3 MR. CARDWELL: I'd just like say that we looked at
4 the -- it would be very useful for you to consider the EPAs
5 approach, because it was basically a real problem for the
6 state because of how it was handled in the '60s, '70's and
7 early '80s. But the tag grants to the public were very
8 helpful in getting them involved and keeping them informed
9 about what was going on. So I'd advise you to take a real
10 hard look at that particular procedure.

11 MR. AUSTIN: I appreciate that. Our Chairman has
12 directed us to have extensive public involvement in it, and
13 we will be examining that.

14 On your question about compatibility, that came
15 right after your question about the EPA model but I assume
16 your question about compatibility has to do with the SDMP
17 program. I'll defer to Dick Bangart on that.

18 MR. BANGART: We can't answer the question until
19 we get the new compatibility policy in place. Today it
20 obviously is not a matter of compatibility in any form. If
21 the compatibility policy, new compatibility policy goes
22 forward as presented to the Commission then we have yet to
23 have to go through various program areas to decide whether
24 the national consistency issue is so important as to make
25 something in addition to certain sets of rules a matter of

1 compatibility or identicalness.

2 Obviously the enhanced participatory rule-making
3 is leading to the clean up of residual contamination
4 criteria. Rule-making, our standard will be one that I
5 think is likely to be a matter of compatibility.

6 MS. DICUS: When you think about going to --
7 expressing risk as Martha was suggesting, instead of talking
8 to the people in millirems, the public is getting to where
9 they understand sort of a risk, but there is still not
10 understanding between a millirem and a hundred millirems.

11 MR. BANGART: I think conceptually this new
12 compatibility policy that the Commission is considering
13 right now -- my reading of it says there will be greater
14 flexibility on matters like this according to Agreement
15 States. So I think conceptually at least as long as the
16 standard is the same if it's expressed in one way or
17 multiple ways then it would be consistent with the concept,
18 at least.

19 How it will actually fall out when we get to
20 individual rule-makings and saying on a particular
21 requirement it needs to be identical for national
22 consistency purposes or whether for that particular
23 requirement there is the flexibility that we hope to afford
24 -- the greater flexibility that we hope to afford.

25 We'll just have to see how it falls out. But I

1 think conceptually where we're heading it would accommodate
2 that kind of approach.

3 MS. DICUS: The other thing, it makes it much
4 easier for us if we can say to the public that we're going
5 to require decommissioning to say one in 10,000 or whatever
6 the number we might happen to come up with.

7 When you use a hundred millirem or you use one or
8 ten or ALARA or any of these other buzz-words that we kind
9 of pass around here, it makes the public think that we're
10 waffling. But I think it's important, and I think one of
11 the things I was trying to say when I said dealing with EPA,
12 EPA says we are going to clean up, to you know, whatever
13 their number is, one in 10,000 -- just like I have a site
14 that has got a risk that meets that, from a cancer
15 standpoint the EPA is taking over because the toxicity
16 standpoint requires another remedial action.

17 But at least we're both talking with the same
18 language. And that's why I would encourage you to go to
19 this risk base type of criteria. And if internally we want
20 to use millirem that's fine. If you refer back to the
21 workshop a year ago or two -- when Perez was there and
22 Cheryl -- we were still back in the REG 1.86 era, and you
23 know, we've got to get out of that era. And that was the
24 only thing that NRC could hang their hat on.

25 MR. BANGART: I think we believe that the rule-

1 making process to establish the residual contamination
2 criteria does reflect in the current ranges of doses whether
3 they're goals or limits or whatever, they tend to the minus
4 four risk level.

5 This is an opportunity when you see the final
6 rule-making or proposed rule-making to comment in this
7 regard. It would be welcome. I also think that some of the
8 public outreach, SSAB type provisions that are going to be
9 found in that rule are consistent with the EPA model as
10 well.

11 So we are doing the best we can to work together
12 with the EPA in establishing our rule, and as they move
13 forward to establish their standards, and we hope that the
14 two are going to be close and at least not inconsistent. It
15 looks like they won't be identical.

16 Let's take these two final questions and then
17 we'll move on. Max?

18 MR. BATAVIA: Dick, going off on a tangent a
19 little bit, do you see some commonalities between in some
20 part regulating the radionuclides issue in your discussions
21 on negotiations with EPA, because it would seem that we have
22 some similar issues.

23 If NRC is successful in convincing EPA to rescind
24 some part -- I mean from a standpoint of -- I mean -- do you
25 have any comments on that?

1 MR. BANGART: The doses that we're -- are
2 acceptable doses in the same order of magnitude, but beyond
3 that the issues are quite different, and I think my only
4 comment -- when you said if EPA rescinds is the appropriate
5 introductory clause to use for that sentence, because there
6 are a number of complex issues associated with the subpart I
7 rule-making that basically go back to the philosophy of
8 regulation.

9 And you know, there are fundamentals that -- they
10 involve matters that are -- that go all the way up to our
11 chairman and the administrator of the Environmental
12 Protection Agency, and we're continuing to work with EPA to
13 try to resolve those issues.

14 But as you know right now we're moving forward on
15 separate tracks.

16 MR. AUSTIN: On this issue of compatibility with
17 EPA, as I mentioned EPA is not internally harmonized nor is
18 NRC internally harmonized on risk goals. But within EPA
19 there is usually legislation which dictates a risk
20 management goal for a particular area.

21 There is the zero degradation for some groundwater
22 systems; there's best available technology in some cases.
23 So they have through congressional mandate different risk
24 goals for different aspects of the environment.

25 And making it very difficult for them to harmonize

1 and then they have some court cases which further mandates
2 certain approaches in certain arenas. And we have the no
3 undue risk standard as mandated by congress.

4 So I think we're a long way off from seeing
5 anything like a uniform risk management goal within EPA or
6 between EPA and NRC. It's because of very complex issues
7 and backgrounds on the various silos within EPA.

8 MR. VOLPE: Excuse me, how close are you looking
9 at 40 CFR 195 in comparison to what you all want to do with
10 your decommissioning criteria, because I think 40 CFR 195
11 can play a critical role as far as environmental
12 contamination goes. And I'm wondering how you're
13 harmonizing the approaches. 195, radiation standards for
14 environmental protection, for EPA.
15 Environmental radiation.

16 That's something new that's just come out within
17 the last two months, I believe. And they've requested
18 comments on that.

19 MR. BANGART: Mike Weber I think is more familiar
20 with that.

21 MR. WEBER: The group within the NRC that's been
22 working on our decommissioning criteria meets almost on a
23 weekly basis with the EPA staff that are working on their
24 part 195 rule. The agreement we had when we initiated both
25 rule-makings in parallel was that EPA as part of it's rule-

1 making process would make a determination of sufficiency on
2 the NRC criteria, and if it determined that our rule
3 accomplished a sufficient level of protection then EPA would
4 not apply their standards to NRC and Agreement State license
5 facilities.

6 So we have a heavy burden on us to make sure that
7 whatever we come up with is consistent or sufficient
8 compared to the EPA's. And we've been working at the
9 technical level, we've been working on policy issues
10 together, sharing draft language.

11 We had a meeting this past Monday. We had another
12 meeting last week. There are some issues to be worked out
13 but we're trying to be consistent.

14 MR. VOLPE: I think it's critical that we work
15 that out, though. Because it would put an undue burden on
16 us if we can't work something out. By us, I mean the
17 states.

18 MS. DIBBLEE: Is there any intent for
19 participatory rule-making on that particular issue? Have
20 you had any state involvement in that level there that
21 you're talking about with the EPA?

22 MR. WEBER: The states participated in all the
23 workshops as did EPA. There have not been EPA or state
24 representatives in on the interagency discussions to date.
25 The states do participate in EPA's NACEP subcommittee which

1 is advising EPA on and off on their standards, so it's
2 coming into the process through multiple channels.

3 MR. BANGART: Maggie, you have one last question,
4 I think.

5 MS. REILLY: Has there been any attempt made to
6 reconcile the quote, "current criteria" with the new goals
7 and all that; for instance has anyone tried to cross ref
8 1.86 against the new stuff?

9 MR. WEBER: Yes.

10 MR. BANGART: Yes, they have, and Mike Weber may
11 want to elaborate on this.

12 MR. AUSTIN: REG guide 1.86 was developed in 1974
13 based on instrument capability back then as well as an
14 unfortunate eye to fallout at that given time. For
15 radionuclides other than uranium and thorium we tend to
16 calculate concentrations for acceptability at about a ten
17 millirem per year exposure rate. Assuming 2,000-hour
18 occupancy and stuff like that.

19 For the uranium and thorium cases options one, for
20 uranium and thorium, pass the test. Option 2 for uranium
21 burials essentially passes the test. There may be some fine
22 tuning in the calculation or fine tuning in the second
23 significant figure for uranium contamination.

24 For thorium, option 2, it does not pass the test.
25 But in our SDMP update over the last couple of years the

1 staff has expressed concern about option 2 for thorium
2 anyway. And -- but again, that would not pass the test.

3 Recall REG guide 1.86, the exposure rate is --
4 there is also a five micro R per hour at a meter above
5 background. And that passes the test. So I don't think the
6 decommissioning residual contamination criteria rule-making
7 will have a significant impact on ongoing decommissioning
8 activities other than thorium.

9 Is that right, Mike? Approximately right, I
10 think.

11 Next we've got -- thank you, John, good job.

12 Next we've got Paul Goldberg. He's with the
13 Division of Industrial Medical Nuclear Safety in the Office
14 of Nuclear Materials Safety and Safeguards. He's the
15 project manager for our program to review terminated license
16 files. And he'll describe the systematic way in which
17 that's being conducted and the results that have come
18 forward from that, from the review of those files to date.

19 Paul?

20 MR. GOLDBERG: Thank you, Dick.

21 The origin of this project is sort of multiple,
22 but the main incentive to do it was our continuing discovery
23 that terminated sites had retained some contamination in
24 quite a number of cases.

25 In some cases it was a matter of standards having

1 changed between the time the site was terminated and the
2 present. In other cases it was a matter of the sites not
3 having been cleaned up to contemporaneous standards,
4 standards in effect at the time that the site was
5 decommissioned.

6 So we decided to initiate a project to look at a
7 large group of terminated licenses. We had previously
8 looked in the late '70s at a large number of about 16,000 of
9 the very earliest licenses terminated. And we've
10 subsequently discovered that that examination of those
11 licenses was not really adequate for our purposes.

12 We found -- actually found some contamination in
13 some of the sites examined under that project, so we folded
14 that into the current project.

15 What we have currently, we've looked at about --
16 we've looked at something on the order of 17,000 sites in
17 the first batch and we've got another -- that is 17,000
18 licenses -- and we've got another 16,000 to look at in the
19 second batch. And we will in order to catch up to the
20 present, we'll probably have about another 5,000. So
21 something on the order of 40,000 licenses probably to look
22 at eventually under this project if we get the full funding.

23 May I have the first slide -- These are the
24 primary objectives of the project. And the first -- I
25 should say the first phase of this project is being

1 conducted for us by a contractor, Oak Ridge National
2 Laboratory. They've developed a system to screen these
3 licenses. Obviously this is not a matter of going out to
4 each one of these 40,000 sites and surveying it, that would
5 be impractical.

6 So we've had to find a way to screen, looking at
7 the written information. And we've developed a methodology
8 through which the contractor is able to extract certain
9 information from the license. Materials that are authorized
10 under the license; information on the kind of operation that
11 was done at the site; information on what documentation we
12 have for the close-out of the site; materials disposition
13 forms; surveys and so on.

14 And using that information they run it through an
15 automated system which in the first instance gives a score
16 based on dose factors for the materials, and second
17 increases or decreases that score based on these other
18 factors. Factors like turnover, like use of gloves, glove
19 boxes and hoods, likelihood of environmental contamination
20 and things like that.

21 So these are the objectives. We want to identify
22 the likelihood of contamination and get some estimate of the
23 magnitude for potential contamination. Furthermore we don't
24 want this just to be a yes or no. We have to be able to
25 rank these to establish some priorities for follow-up, so

1 we've come out with an overall score for each of these
2 sites.

3 Now, these of course are the -- we're doing a
4 similar -- along with this we're doing a similar job for the
5 sealed sources. We're looking at primarily contaminated
6 sites, but secondarily also at sealed sources which aren't
7 accounted for. And might be hazardous.

8 Now, these are the nominal objectives. Of course
9 my real objective is to find contaminated sites for John
10 Austin to handle.

11 The next slide -- now, one of the important things
12 about this is that we document this, because these are sites
13 which in some cases have either been lost to living memory
14 or have been revisited time and again and resurface every
15 time we do a project like this.

16 MS. McBAUGH: Could you have them move the slides
17 up, we can't see --

18 MS. FELICE: And they're not in the book, so we're
19 having to --

20 MR. GOLDBERG: Yeah, I do have photocopies so I'll
21 pass them out.

22 MS. McBAUGH: But if they can move them up for us
23 --

24 MR. GOLDBERG: Is that okay?

25 MS. McBAUGH: Yeah.

1 MR. GOLDBERG: Thank you.

2 [Photocopies passed out to participants.]

3 MR. GOLDBERG: Okay, so it's very important that
4 we document this. And for our purposes it's very useful to
5 do it in an automated system. We've actually got a large
6 on-line database that allows us to retrieve a lot of this
7 information in a very useful form for comparing the
8 different sites and for doing -- organizing and sorting them
9 in various ways.

10 Let's go to the next slide, please.

11 As I say, we've actually looked at two batches of
12 licenses. We've identified them as the '65 to '85 licenses
13 -- excuse me -- and the pre-'65 license.

14 We extract this inventory information which is the
15 basis for the evaluation that's made and the score that's
16 given to the site and to the sealed sources. This gives you
17 an idea of the number of files that they've dealt with. In
18 some cases there are multiple files for each license.

19 Let's go to the next slide, please.

20 And this gives you an idea of the decision
21 structure for an evaluation. Obviously with such a large
22 number of licenses to run through, such a large volume of
23 information, you'd like to minimize the work you do. So in
24 a lot of cases we can actually eliminate a score on
25 administrative bases. And you'll be happy to hear that we

1 eliminate them if they've been turned over to Agreement
2 States while they were still active.

3 If they were closed out as NRC or AEC licenses we
4 still retain responsibility for them and we go ahead to
5 evaluate them. For the ones that are turned over to
6 Agreement States we have a provision to override that in a
7 case where there is one site on the license which was closed
8 out before it was turned over to the Agreement State or if
9 there is some overriding likelihood of contamination at the
10 site, which we want to make sure that we identified for our
11 purposes and to the Agreement State.

12 So if you'll follow the left-hand column, you'll
13 see it's fairly short. We look first at the types and forms
14 of materials, the nuclides, the volumes or activity and then
15 what -- how long-lived the materials are. If they're very
16 short-lived we don't go any further.

17 If it's sealed material and it's long-lived and
18 substantial enough to be hazardous, if you'll go down the
19 left-hand column -- and that's a fairly short program -- on
20 the right-hand side for loose material we look in more
21 detail at those factors, at the possibility of environmental
22 contamination, at material that might have been moved off-
23 site, buried in a landfill for example.

24 And where there's a survey we do a detailed -- we
25 have someone who is experienced with surveys take a look at

1 it to evaluate it in detail because a survey -- we may have
2 a site that looks pretty poor, but if we've got a very good
3 confirmatory survey that's very thorough, comprehensive, and
4 shows the site having been cleaned up that will resolve a
5 lot of the questions. That will essentially -- that will
6 reduce the score by an order of magnitude sometimes.

7 So we have to look closely at the survey to
8 evaluate whether it is good enough to allow that kind of
9 change in the score.

10 Let's see -- we can skip the next two slides,
11 maybe to the slide that's headed "Status of Source Material
12 Licenses, Site Evaluation."

13 Okay, this gives you some sense -- it didn't come
14 out too well -- this gives you some sense of how we dealt
15 with the various licenses. As you can see there are about
16 948 total source material licenses that were looked at.

17 A large percentage were removed for administrative
18 reasons. Others had no loose material. A certain
19 percentage received a score above zero. And the smaller
20 percentage received a score above five.

21 Those are the ones that we're concerned about. We
22 set five as the threshold. And we've set an additional
23 threshold of 300 in the scoring system for ones that need
24 relatively quick follow-up.

25 So these ones that are identified as having a

1 score above five are being followed up by the Regions, our
2 Regional offices.

3 In addition we've instructed the Regions to
4 coordinate with all states. For non-Agreement States
5 they're to invite the state to join them in any on-site work
6 that they do. For Agreement States they are to coordinate
7 and ask that the Agreement State take the lead, because
8 other than the -- other than this -- any S&M site that has
9 formula quantities, these would essentially be all under
10 Agreement State jurisdiction.

11 So we at least in theory would have -- don't
12 really have any legal right to get onto the site. In
13 general, licensees have let us onto the site without a big
14 argument, but in fact these are Agreement State sites if
15 there's any contamination there.

16 So what we've tried to do is allow Agreement
17 States to take the lead and to accompany them, have our
18 inspectors accompany them on surveys where those are
19 necessary in Agreement States.

20 This is just terminated licenses. These are all
21 terminated licenses. I'm just trying to catch up to the
22 present. This is our backlog.

23 Okay, we can go to the next slide.

24 These are special nuclear material licenses. And
25 you can see a similar pattern. We haven't -- we didn't

1 identify quite as many contaminated sites out of this
2 number, but this gives you some sense of how we were able to
3 eliminate then and what percentage came out with scores that
4 we'd have to follow up on.

5 Let's go to the next one, please.

6 These are byproduct material licenses, part 30
7 licenses. And this shows you how many came out with scores
8 that we're concerned about.

9 In total for the first batch of 17,000 licenses we
10 came out with 322 contaminated sites that we need to follow
11 up on in some fashion. In some cases the Region or often
12 the state in some cases, former licensees or former licensee
13 employees are able to provide enough information that we
14 don't need to go out to the site. They may have a survey
15 stuck away some where that's adequate for our purposes or
16 there may be enough institutional memory in the Region that
17 they can say yeah, I remember, they cleaned up that site.
18 We looked at it at the time and we've got the information on
19 that and you'll hear later on from Mike McCann about that
20 later today. We came out with something on the same order,
21 about 340 sealed sources, that need will need some follow-
22 up of some kind. Hopefully they can be solved without too
23 much trouble.

24 We're less concerned about the sealed sources
25 because we realize that they weren't necessarily documented,

1 their disposition wasn't necessarily documented very well,
2 but for the most part they were sent back to the
3 manufacturer, they were transferred to another licensee.

4 The problem there is more one of missing
5 documentation than of any real hazard so far as we've been
6 able to tell.

7 The slide has some overall totals and some totals
8 by region for the contaminated sites that we've had.

9 As I said, we did about seven -- if you'll look at
10 the fifth line down, we looked in the first project at
11 17,000 licenses. You can see the distribution across the
12 regions. One and III are the biggest regions, of course.
13 And the numbers in parentheses below those are the sites
14 found contaminated.

15 And then we've got some similar figures for the
16 pre-65 licenses, which we've just started to work on. We
17 haven't gone through those yet.

18 Let's see. We can go to the next slide, the uses
19 of the license information system. This is the database
20 system which is available electronically and which we hope
21 to make generally available through our network and if
22 necessary to other parties, too, to states and others who
23 are interested in it.

24 As I say, this has the evaluations which have the
25 essential information that led to the license getting the

1 score that it did.

2 And they show the decision process. They show the
3 judgments made at each stage along the way. And they give
4 you some -- they're the kind of thing that you can add to.
5 If you're working on a given site, for example, you can
6 append whatever information or judgments you find that are
7 relevant.

8 Okay. I think that's about it. I tried to run
9 through this quite quickly, and I've kind of skimmed -- I've
10 emphasized the contractor effort and kind of skimmed on the
11 regional follow-up, which is a very big part of it, in hopes
12 that you'll be getting more detail about that from Mike
13 McCann. I think he's planning to talk about it. But we
14 need to leave a little time for questions.

15 Do we have any questions?

16 MS. DIBBLEE: I just have a question on the one,
17 licenses, the one that's broken down by region. And you
18 said something about -- in the handout, it says, "percentage
19 of sites," but you mentioned numbers, so I was just
20 wondering what exactly that was, if was actual numbers or it
21 there is indeed a percentage?

22 MR. GOLDBERG: Oh, yeah, I'm sorry, I was
23 mistaken. Yeah, that's right, that's the percentage of
24 license distribution across the regions. That's right. I
25 misstated that. Is that clear now?

1 MS. DIBBLEE: Yes.

2 MR. GOLDBERG: Yes?

3 MR. AUSTIN: Question: Concerning the sealed
4 sources, as I understand, this only includes those who held
5 specific licenses; it does not include those who had sources
6 under a general license?

7 MR. GOLDBERG: That's right.

8 MR. AUSTIN: Is there any way of estimating how
9 many of those might be out there?

10 MR. GOLDBERG: To the -- well, up to a certain
11 point, I think we have that information, but once we stop
12 tracking general licenses, you know, I don't think we would
13 have the information on individual sources.

14 We've had to set some thresholds for these things.
15 That generally is an area that doesn't get captured by this,
16 I recognize.

17 MS. DIBBLEE: Your scoring system --

18 MR. GOLDBERG: Yes?

19 MS. DIBBLEE: -- is that in computer?

20 MR. GOLDBERG: Yes, it is.

21 MR. DIBBLEE: And can you tell us exactly what
22 criteria you used for this scoring or is this something
23 that's subjective?

24 MR. GOLDBERG: There's some amount of judgment,
25 but it's intended to be systematic and standardized. I've

1 actually got a little more detail in the handout on it.

2 MR. BANGART: I will tell you that Oak Ridge gives
3 a very impressive presentation on the work that they're
4 doing for the NRC in this program.

5 And I don't know the likelihood that they might be
6 able to give some presentations maybe at future meetings or
7 even with individual states, but they are really doing a
8 bang-up job I think, and it's good work.

9 I'd just ask Paul if we have any documentation to
10 provide more detail about their scoring system and how we go
11 through this. Apparently we don't have any reports, but if
12 there's interest, we'll look for opportunities to have
13 someone --

14 MR. GOLDBERG: We should be getting something in
15 the next several months. I can arrange to send that out to
16 the people who are interested.

17 I think in the handouts you have there, there's
18 actually some more information, some more detail that I
19 didn't cover here on the scoring system. And it runs you
20 through the decision matrix. It's kind of a decision trip.

21 It just gives you the outline of it. If you want
22 detail, that will be in the report that will come out in
23 NUREG form, our final report on the project.

24 MS. DIBBLEE: Is -- Oak Ridge?

25 MR. GOLDBERG: Elaine Zagami.

1 MR. BANGART: If you're heading up this project
2 and looking at 17,000 terminated licenses, she is really
3 quite expert in handling these judgments, she and her staff.

4 MR. McCANN: One thing, the current licenses in
5 Region III anyway -- I would assume it's consistent in the
6 other regions. Our materials licensing section is referring
7 to our inspection and to the decommissioning so that any
8 site or any licensee is requesting termination which may
9 have, you know, contaminated facilities, so we are looking
10 at current licensees as they request termination.

11 We're also developing a list that will go hand in
12 hand with our current list of contaminated sites or
13 potential sites.

14 Mike Weber just asked if the expert system that
15 Oak Ridge uses to come out with these scores is available
16 for others to use.

17 We hadn't talked about making that available, but,
18 if there's interest, we can certainly consider it.

19 MR. BANGART: Any other questions before we take a
20 break?

21 [No response.]

22 MR. BANGART: Break time then for about 15
23 minutes.

24 [Recess.]

25 MR. BANGART: The next session in the workshop is

1 going to deal with experiences and -- contaminated sites as
2 well as experiences that the State of Illinois has had.

3 We're going to have to change the order a little
4 bit, and Mike McCann, who is Chief of the Fuel Facilities
5 and Decommissioning Section in Region III, is going to lead
6 off these discussions.

7 Mike.

8 MR. McCANN: Thank you. Can you hear me?

9 [Chorus of nos.]

10 MR. McCANN: Good morning. When I found out about
11 three weeks ago that I was going to be able to attend the
12 workshop, I was excited. And then when I found out that I
13 was going to speak at the workshop, I even became more
14 excited.

15 I have a familiarity with a lot of you here since
16 in 1969 I started with the State of Illinois and was with
17 them until 1981 when I began my employment with the NRC.

18 I'm going to speak a little bit about Region III
19 experiences in dealing with contaminated sites in the SDMP.

20 You'll find that these sites, if you choose to
21 accept the mission, I guess, will be a tough one, but I do
22 believe that it is important to control these sites at a
23 local level.

24 It's good to have the close communication with
25 the, what you'll find in many cases, non-licensees and

1 licensees and just plain material that exists that nobody's
2 going to account for.

3 Anyway, in 1989 Region III recognized that the
4 issues regarding waste disposal and potentially contaminated
5 sites were starting to become a main issue based on
6 congressional inquiries and public concern.

7 In 1989, in recognition of this, the Region
8 decided to take an individual radiation specialist and they
9 had him start characterizing the sites and identifying them.

10 And we, based on just institutional knowledge,
11 found that we had approximately 14 sites that had issues
12 regarding large quantities of waste or unused contaminated
13 buildings.

14 As you have already heard, approximately a year
15 later the SDMP came into effect, and the Region decided
16 that, due to the number of the cases that were being -- or
17 the number of former licensees, the SDMP sites that were
18 being identified and the complexity of these sites, and the
19 time requirement, the FTE requirement to handle them, that
20 it would establish what is now the Fuel Facilities and
21 Decommissioning Section.

22 Currently our group has 16 -- I think our slides
23 are -- that's all right. It's Attachment D of your book is
24 where I'm talking from.

25 Currently we have 16 sites. We have four sites

1 that have been identified within the last year, and these
2 are as a result of Paul Goldberg's and NMS's initiative to
3 evaluate terminated licenses.

4 We have eight other sites that we are handling
5 within the Region, and they aren't on the SDMP. John had
6 mentioned earlier, you know, the five criteria of being
7 listed on the SDMP, so I was going to mention it, but I
8 won't go through them again.

9 We have since -- since we started the SDMP
10 program, Region III has only been able to remove one site.
11 That was a Victurine Ink in Cleveland, Ohio. And it had
12 some of the problems I think Paul mentioned earlier.

13 We had two different contract surveys, one by an
14 independent contractor -- two independent contractor surveys
15 in like 1988 and 1989. And these times are approximation.
16 I think you have the SDMP notebook, and you'll find "Old
17 Vic" in there if you'd like to read that later.

18 But basically it's very discouraging even to the
19 NRC to have two reputable health physics groups go through
20 and do characterization surveys and then we pay -- I think
21 it cost, you know, several thousands, maybe a hundred and
22 some thousand dollars -- to have Oak Ridge coming in at the
23 conclusion of that remediation effort and characterization
24 and survey effort and then find that we have significant
25 quantities of contaminated material remaining in the

1 building, which then resulted in "Old Vic" and her parent
2 company going back and contracting with another contractor
3 and remediating the building further and then, finally, just
4 like I say, in 1993, we were able to release that building.

5 Even then, even our last survey, we came up with a
6 problem interpreting the NUREG-5849 as far as averaging
7 concentrations per 100 centimeter squared, how that applied
8 to the maximum of 15,000 disintegrations per square
9 centimeter or, you know, is it averaged over the whole 100
10 centimeters or is it a single point?

11 And we originally interpreted it one way, and,
12 even after that effort, we had to have the contractor come
13 back in and clean up, I think, 15 spots.

14 Dave Fauver, I think, is going to talk more later
15 about 5849 and the technical aspects, so I'd ask that you
16 ask him more of the technical issues.

17 We have what we believe three or four more sites
18 that will be removed from the SDMP this year. I think we're
19 getting our act together, I think would be a good way to put
20 it.

21 John Austin's group is working very hard. We've
22 had three years of trying to decide what are we supposed to
23 do with these sites, that, you know, we've had criteria that
24 hasn't been finalized, it's draft documents. And I think
25 we're starting to see closure coming to these sites because

1 they are getting, you know, closer to resolving the
2 information.

3 Again, as Paul had said, Oak Ridge was contracted
4 to do a survey of all the terminated licenses. Region III I
5 think had about 85 licenses that were identified of which we
6 transferred approximately 15 to 17 to Illinois and Iowa.

7 Of the approximately 70, 72 remaining, we have
8 inspected to date 55 of those terminated licenses. Of the
9 55, we found approximately 20 to have either on-site
10 contamination remaining or other unrelated, you know,
11 contamination problems; that is, they may have a burial
12 somewhere that we can't locate.

13 You're looking at a file that existed, a licensee
14 that existed sometime back in 1956. You try and recreate
15 that file, and you try and recreate the types of material
16 that they had and where it was used.

17 You find vague references in some cases that, in
18 this case, there was a case in Missouri, Crane-Ferguson. It
19 infers in the file that a burial occurred. And I think this
20 license file existed in 1956-1960 timeframe.

21 And we honestly can't find -- most of the
22 employees are dead. And the parent company is somewhere in
23 Colorado, I think. And the records -- they don't have a
24 license, I don't think, in Colorado. The records are
25 nonexistent.

1 So that's something we are continuing to look
2 into. We're looking at such things -- the U.S., the
3 overflight, they do -- yeah. They do overflights and they
4 every so often -- Dave, help me out if I'm missing the name
5 -- they'll map sites, the landscape as it changes.

6 We're trying to go back and look at map that
7 existed, you know, 20, 30 years ago to see if we can look at
8 the site and see if there is any evidence of digging or, you
9 know, burials.

10 You'll be surprised some of the things you'll find
11 that will help you locate these things. An example is a
12 company in Cambridge, Ohio. The maps in the plant manager's
13 office, they had taken sequential pictures of the
14 development of the company over the years, and you can
15 actually go back and look at those maps to get an idea of
16 what was the character of the site as it evolved.

17 And so it's going to be unique what you're going
18 to have to do to recreate some of these files.

19 Today, my section, you know, has, like I said, we
20 started out in 1989, and we had one full-time FTE employee.
21 Today we currently have four full-time radiation
22 specialists. We've had to take over the control of the
23 Region III lab, and therefore we have a full-time radiation
24 technician down there and one other radiochemist.

25 I'd have to say a decommissioning group is going

1 to be a unique group. Your persons doing this work have to
2 be a combination of a license reviewer and inspector.

3 They're going to need to be able to review
4 documents. By the way, since I mentioned that, I think, if
5 you will notice, I had a handout that's titled
6 "Decommissioning, The Decommissioning Process," and a
7 scoping survey plan.

8 "The Decommission Process" will give you an idea
9 of the documentation that the regional inspector must be
10 familiar with. I have to admit in most of our cases our
11 program office is responsible for the review and approval of
12 the plan, but the inspectors have to be just as familiar and
13 in most cases provide input to that process.

14 And you can see it's not a fast process. You
15 know, the decommissioning is where you develop your basis
16 for characterizing the site, where you develop your
17 procedures for the health and safety.

18 You can see as you go down each one of those
19 processes. You're talking a month to three months of effort
20 to review those.

21 It takes an inspector anywhere from a day to two
22 or three weeks just to review those documents to be prepared
23 for an inspection.

24 They also have to be prepared to go out and look
25 at these sites at intervals sometimes as often as monthly

1 because once the licensee gets into characterization or
2 remediation, your effort is going to be, you know -- reflect
3 their work.

4 Your inspector must -- and I'd well emphasize must
5 -- must be capable of performing-physically demanding
6 inspections.

7 I think a lot of you, just based on the character
8 of your state, are already aware of what abandoned sites and
9 waste piles can look like, but it is common, everyday work
10 for a Region III or Region I contaminated site inspector to
11 be expected to have to climb waste piles that are 20, 30
12 feet high.

13 They have to go into abandoned buildings that have
14 no light or electricity or water. A common piece of our
15 equipment is to have, you know, the NRC inspectors helmets
16 have miner's lights on them.

17 I mean, you literally will be walking into Bendix
18 Corporation, which was a former processed -- I can't
19 remember what they processed, but the buildings are
20 thousands of square feet. They're just gigantic buildings.

21 And you could a day just doing a building. And
22 there is no light, no heat. So it's very difficult.

23 They have to get used walking through swamps,
24 walking through sewage treatment plants that may have had
25 reconcentration of cobalt. The smells aren't good, and the

1 looks aren't necessary nice, so it is tough work.

2 I could even relate, you know, a story regarding
3 one of our dump sites that has extensive toxic waste that's
4 bubbling out of the ground.

5 We had a contractor in Michigan at one of our
6 sites -- this is what I'm told, and I believe the story --
7 who drove his rental car into the site, and before he could
8 get it out of the site after the caretaker personnel told
9 him, all four tires were flat and they were basically
10 ruined.

11 So, you know, that gives you some of the character
12 of these sites. They are tough, demanding inspections.

13 So I think you must realize there's going to be
14 bugs. There's going to be animals. Some of our sites, in
15 Cleveland is a good example, you don't go into the area
16 where the site is unless you have a police escort.

17 We had Jack Grove, who is one of our branch
18 chiefs, and another inspector went to one of the sites in
19 Cleveland, and they drove their car up and were sitting
20 looking at the vacant buildings.

21 And they literally had a car drive up behind them
22 and a car starts to drive up next to them, and fortunately
23 they were able to get out of the area. But you will be
24 exposed to all kinds of hazards and risks.

25 Your inspectors have to have above average

1 technical health physics expertise. They're going to have
2 to be able to determine what serving meter that's going to
3 be needed to be used based upon the radioactive material.

4 In other words, you can't use a Ludlum micro R
5 meter if you're out looking at a place that's contaminated
6 with high enriched uranium. You know, you're going to have
7 primarily an alpha problem.

8 You know, that sounds hard to believe, but yet we
9 have a site that we're adding to the SDMP -- no, we're not
10 adding to it. We're going to handle that within the Region.

11 But we actually have a site based upon that exact
12 reason. It had an NRC close-out service, but the wrong
13 meter was used.

14 They're going to have to be able to, and if they
15 don't, Oak Ridge provides several courses, but they're going
16 to have to be knowledgeable in sample collection, sample
17 preparation. And this all in the field. This is not
18 laboratory preparation.

19 And they're going to have to learn chain of
20 custody. It's easy to lose your -- I can't think of the
21 word -- integrity, good word, okay -- the integrity of your
22 samples and leave them in question if you don't have a good
23 chain of custody.

24 To assist our inspectors and to reflect the
25 emphasis that the Region puts on assuring that these sites,

1 once closed, remain closed, I provided you a scoping survey
2 plan.

3 We developed that within the Region. And I think
4 that Dave had mentioned that they're developing something
5 from SDMP in the contractor survey so I'll let him talk
6 about that later.

7 But what we do is we go through, once the
8 inspector has recreated the file and we have a good idea of
9 what we intend to expect -- for example, we have an
10 inspector out in St. Louis, Michigan, this week looking at a
11 54-acre site. Originally we were told it is 54 acres of
12 asphalt.

13 Right now, we have now corrected that, and it's 54
14 acres with a clay cap on the soil and a certain percentage
15 of asphalt.

16 Do you expect for that inspector -- you know, it's
17 difficult to expect that inspector to go out and do a
18 hundred percent walkover of that survey, let alone try and
19 decide what kind of sampling regime that you're going to do
20 to have confidence that once we close that terminated site
21 out that it's done.

22 In that case, what we decided is we're going back
23 -- and we're fortunate, the company owner still exists.
24 We're going back and we are able to key in where the
25 building stood. This was a fuel-processing operation, I

1 think.

2 We are going back and we can determine where the
3 buildings existed. We're going to designate those as
4 affected areas. We'll have to flag it out and then, you
5 know, designate unaffected areas.

6 And then we're going to look for runoff points
7 that would go from the property and then any penetrations to
8 the cap or asphalt to take soil.

9 So that's the purpose of the scoping survey plan
10 is to make sure we're giving guidance to our inspectors as
11 well as having an assurance that, before they go out there,
12 they have their proper equipment, proper sampling equipment,
13 proper sampling tools.

14 I also want to mention, too, regarding the Oak
15 Ridge survey, it is a good tool, and it has identified the
16 sites that were contaminated.

17 In other words, there was a question left in
18 doubt: Did the licensee do an adequate closeout survey or
19 did we have adequate documentation?

20 That's what we've normally found has been the
21 problem. Either, one, we didn't find -- either the licensee
22 didn't provide closeout survey documentation or it was
23 inadequate or we didn't do a closeout, and based upon the
24 type of material and use that there was high probability.

25 But what I was getting at is you have to be

1 careful with the scores. We have found several of our sites
2 that have, say, a more significant residual contamination
3 remaining to exist at the lower scores, I think, in most
4 cases than we have even at the higher scores.

5 Now there may be a reason for that. The reason
6 may be is that, you know, that people are processing the
7 more significant quantities may have done a better job of
8 cleaning and the lower scores may have been considered not
9 quite as significant.

10 Don't just -- I guess my point is don't rely just
11 on the scores. You have to do your own analysis when you go
12 back and recreate those files or you recreate the history.

13 Now we have talked with Illinois, and, you know,
14 our Region has agreed to support them in any way we can with
15 regard to staff in the scoping surveys and things like that.

16 I'm sure that the rest of the Region and the
17 Commission feeling would be the same, although we'd have to
18 work it in with our FTE -- or our work plans at the same
19 time.

20 I guess the other thing, too, as far as field
21 exposure regarding an inspector, he's going to need to be
22 able to be able -- he's going to need to be a good
23 communicator.

24 He's going to have to be able to deal with media
25 situations at any time at any place and know what to do when

1 he's faced with that.

2 We've even had cases of, for example, where --
3 it's unexpected. We've had cases where an individual
4 called, an allegation that there's material existing. And
5 we normally treat allegations as a protected issue until
6 it's been resolved.

7 But we've had -- in one particular case in
8 Cleveland, it was basically a setup. You know, our
9 inspectors arrived at the site and there was newspaper
10 people there. I think it was just newspaper. I don't think
11 there was TV. But you never know when they're going to be
12 faced with media exposure.

13 Since in a lot of the cases our licensees -- see,
14 that's the problem I have. In most cases, when you go out,
15 these people aren't licensees.

16 And when you're dealing with a company that has
17 maybe a \$200,000 a year income and you go out and you find
18 that there's contamination and it may cost them a million or
19 \$2 million or several hundred thousand dollars, it's going
20 to be quite stressful, so your inspector is going to be able
21 to negotiate. He's going to need to be able to deal with
22 upper management in the NRC, you know, the state, to resolve
23 these issues.

24 I think I've already mentioned that these
25 inspections are resource-intensive and we're slow to close.

1 A good site, to show the resource- intensiveness,
2 is at a Chematron Corporation in Cleveland, Iowa, which is a
3 depleted uranium issue.

4 It is costing us approximately half to three-
5 quarters of an FTE, full-time work employment, just to
6 maintain that site. And I know that our program office is
7 expending a great deal of time on that site by itself also.

8 Again. I think I already mentioned that I think
9 our guidance is getting better, and I think we will become
10 more -- close these sites up more quickly.

11 As far as resource-intensive, I think I can give
12 you a good example. Most of us and my background was more
13 -- I was more used to dealing with byproduct material,
14 special nuclear source material licensees.

15 A good inspector -- I shouldn't say it that way.
16 A typical inspector can close around 80 to 100 licenses in
17 Region III. We've normally considered that to be a good
18 average.

19 As you've seen earlier, we closed out 55 cases in
20 two years, so what you're seeing is that it's taking three
21 to four times more effort just to close out and terminate a
22 site.

23 So it is going to be resource-intensive. It's not
24 something that you can review a license file, which we are
25 used to doing, going out and doing an inspection and writing

1 up an inspection report. It just won't work that way.

2 I think I mentioned earlier there's other areas
3 that you're going to need to consider, that you're going to
4 have to look at if you get into this program.

5 Most of you may already have it because most state
6 programs have a good laboratory, but in 1989 when we started
7 seeing that we were going to have all these unusual cases,
8 other than just analyzing white tests or an occasional white
9 test from a university.

10 When we start seeing that we're going to have to
11 do water samples, fish samples, soil samples, we recognize
12 that, hey, we aren't going to be able to deal with it in our
13 lab.

14 And I think Oak Ridge, for example, is charging
15 around \$600, \$800 to analyze certain water samples for
16 alpha. And so it's very expensive.

17 So just within the last year, we've upgraded our
18 lab with about \$50,000 worth of new equipment. And we just
19 bought five new field inspector contamination kits. I'll
20 get into those kits later tonight if you want to talk about
21 what those kits involve.

22 The volume of work going through our lab has
23 significantly increased also. Prior to 1990, 1991, we were
24 averaging about 300 to 350 samples per year.

25 Currently we're processing through at least 1200

1 samples a year, and we expect -- the trend is not plateauing
2 off yet. I don't know where it's going to end, but it seems
3 like the more we get into the confirmatory process of
4 looking at what Oak Ridge does, what the licensee does, we
5 find that we're taking more samples, so that's going to be
6 an area that you're going to have to look at.

7 And again, I don't know about your own case, but I
8 notice that most state labs seem to be in pretty good shape.

9 I'm getting pretty close -- I don't know how long
10 I've been talking.

11 MR. BANGART: I'd plan to wrap up relatively
12 quickly so that --

13 MR. McCANN: Okay, I'll finish up.

14 MR. BANGART: We're running behind schedule.

15 MR. McCANN: That's good, I can quit.

16 I'll just say one thing. When you're at a site,
17 you have to be conscious of the people you're working
18 around.

19 When you go into a site that has not been a
20 licensee for 20 or 30 years and you have people working
21 there on a daily basis and they see you walking in with a
22 survey meter, you're going to get concern expressed, and
23 particularly -- and again, I guess you learn by lessons
24 learned.

25 We had a very conscientious inspector who, when he

1 was doing these inspectors and he found a contaminated area,
2 would put a new "Caution: Radioactive Material" sign, until,
3 you know, it said to the licensee, you know, you should
4 protect this area.

5 Well, if you have a union and all of a sudden they
6 have workers that they recognize have been working in that
7 area for the last, you know, 20 years, and all of a sudden
8 you're saying that they shouldn't work there because there's
9 radioactive material there or if you have female workers who
10 have been working in the area and they start talking about
11 it, you know, you have to touch this, address this type of
12 issue very carefully.

13 And I'll be here tonight. And if there are any
14 questions now, I'll answer them; otherwise, I'm more than
15 happy to talk about more experiences we've had tonight or
16 this afternoon.

17 Any questions?

18 MR. BANGART: Any questions now for Mike:

19 MS. DIBBLEE: May I ask just one question?

20 MR. BANGART: Could I ask you please to state your
21 name before you ask the question so that that will help the
22 transcriber.

23 MS. DIBBLEE: I'm Martha Dibblee from Oregon.

24 Are you going to set up any cross-check programs
25 or any round-robin programs for these labs that are being

1 set up, because at this point the cross-check programs for
2 solids, things like the MOUND program did and POE labs and
3 so on? It's very important to have this QA in place for
4 these labs so that you can establish a nationwide QA
5 program.

6 MR. McCANN: Are you talking about our lab or
7 about contractor labs?

8 MS. DIBBLEE: Well, I'm talking about everybody's
9 labs. It's not something that's just us or just
10 contractors. It would have to be a standardized, standard
11 QA program for all these environmental -- something like EPA
12 does, the Las Vegas cross-checking program would have.
13 They're very few solids soil samples cross-checks.

14 MR. McCANN: You're correct.

15 Dave or Tim, weren't we looking into something of
16 that nature?

17 MR. JOHNSON: I'm not sure. The question is, Are
18 our labs?

19 MR. McCANN: She's talking, I think, Tim, is that,
20 Are we going to have for when we -- and I thought there was
21 a contract document being currently processed that would
22 address the issues of standardization tests and surveys for
23 contractors and labs.

24 MS. DIBBLEE: There's also matter of standard
25 reference materials.

1 MR. McCANN: And standard reference materials.
2 reference materials.

3 MR. JOHNSON: But in terms of quality assurance,
4 the kind of things that we're recommending is the use of the
5 QA procedures and methods that are used by Oak Ridge
6 Institute for Science and Education.

7 MR. BAILEY: Ed Bailey from California.

8 Thank you very much for the list of soil
9 concentrations that are on the back page. Some of you all
10 haven't gotten there might be interested in looking at
11 those.

12 I'm wondering if -- those numbers raise several
13 questions, first of which is, What's the basis for these
14 numbers?

15 And then, there's a real curious one where you
16 have the radium 226 and then the natural uranium, depleted
17 uranium and enriched uranium, and they're rather strangely
18 unrelated.

19 MR. McCANN: These came from -- actually these do
20 have a somewhat of a common theme, but they are not all
21 linked together.

22 The cobalt, strontium, cesium numbers came from a
23 back calculation of an exposure rate of 10 micro R per hour
24 at 1 meter above background.

25 I believe plutonium and americium values came from

1 an EPA regulation. The radium numbers are EPA-derived.

2 The uranium and thorium numbers come from the
3 Branch Technical Position of 1981 for uranium and thorium.
4 Those are option 1 levels, which I will be discussing later
5 this afternoon.

6 MR. BANGART: I might add that in your notebook is
7 the action plan, and that has a reference to the documents
8 on which those numbers in this document are based.

9 MR. FAUVER: There's also an enclosure in your
10 notebook that describes the current dose bases for NRC
11 listing of our area criteria, and that goes into that and
12 provides a reference --

13 MR. BAILEY: They're very curious numbers. Maybe
14 you have to have read the background which you're
15 discussing.

16 MR. WEBER: There is little consistency between
17 those numbers, and that's exactly what we're trying to
18 address through the rule-making to develop the
19 decommissioning criteria.

20 So if you're looking at it from a risk perspective
21 and looking for some commonality in terms of a dose or a
22 risk, you're not going it because it's not there.

23 MR. AUSTIN: The Commission was informed of this
24 disparity and the derivation of these numbers in the course
25 of preparing the action plan.

1 And the Commission directed its staff to continue
2 to use numbers that have been used in the past until there
3 was a record developed to support the uniform
4 decommissioning standard, and that the rule-making that Mike
5 Weber referred to.

6 MR. OWEN: Bob Owens, State of Ohio.

7 How is the Commission planning to factor in the
8 option for creation of a burial cell or site as a
9 remediation option relative to these concentration limits,
10 or are you going to address that? Is that part of the
11 SDMP plan?

12 MR. AUSTIN: We can get into that when we talk
13 about the existing criteria later today.

14 MR. OWEN: Okay.

15 MR. BANGART: But there are sites that need
16 special consideration. That will be covered.

17 MR. AUSTIN: It's a fun issue.

18 MR. BANGART: Okay, if there are no other
19 questions for Mike, thanks. We'll now move to discussion of
20 an experience that our Region I office has had in dealing
21 with a particularly complex-specific site.

22 And Randy Ragland, who is the Region I radiation
23 specialist, will be giving us that.

24 MR. RAGLAND: Thank you. I work with the
25 Facilities Radiation Protection Section and was on the site

1 to the project inspect for the Babcock & Wilcox former
2 uranium and fuel processing facility.

3 John Kinnamon, the section chief of our
4 decommissioning section, will not be here, so he asked me to
5 come and share the experiences that we've had at Babcock &
6 Wilcox.

7 Now we have to move pretty quickly because we're
8 under a time constraint, and we might have to -- I'll be
9 available during lunch to answer some questions if you have
10 them.

11 My experience has been mainly as a site inspector
12 and during the remediation of soils at the site.

13 I'm going to go through some background on the
14 Apollo site, some public relations experience. As I said
15 before, it's a site -- I believe it's like 22 acres
16 industrial complex along the Kiskiminetas River in the
17 Borough of Apollo, Pennsylvania.

18 It was a steel production from the mid-1800's to
19 about 1950, and it's been a fuel processing from the late
20 50's to 1983.

21 On the site, the source of contamination, the main
22 building were process spill leaks; the parking lot, it was
23 contaminated, quit, and stored in outside areas; and for the
24 roof of the main building and adjacent grounds, it was
25 exhaust from stack discharges from what we believe to have

1 been within regulatory limits.

2 There are 489 rail cars to Envirocare for
3 disposal. the site soils, that comes up to approximately
4 800,000 cubic feet of soil contaminated above 30 pCi/g per
5 gram. They only generated about 10,000 to 15,000 cubic feet
6 of building rubble, mostly building rubble that was great
7 2000 pCi/g per gram of uranium.

8 So I'm going to share some experiences with our
9 public relations. And I'm going to go through each one of
10 these goals to establish and build trust between citizens,
11 regulation agencies and the licensee.

12 And you want to minimize distrust, conduct
13 meetings which are open to the public, obtain samples in
14 offsite areas and surrounding community, answer questions in
15 a timely manner, and encourage the licensee to develop a
16 project overview which describes all phases of the
17 decommissioning project. And I'll talk quickly about each
18 one of those.

19 We found that we needed to -- well, we were
20 directed to conduct our exit meetings in a public forum.
21 That's a good practice, especially at a site like Apollo
22 where there was a great deal of public opposition to the
23 facility.

24 They were, just like other individuals have said,
25 they wanted to shut it down even during the decommissioning

1 process, terminate the license.

2 but would encourage that exit meetings are held in
3 the public or that progress reports are given to members of
4 the surrounding community.

5 And you could use a variety of formats. Some
6 meetings may have to be closed, but others would be good for
7 open participation or at least observation and not
8 participation. And it gets the information to the public,
9 and it makes them a part of the process.

10 Now, it does have a disadvantage in that it has
11 the potential for increasing questions, and that could
12 burden your inspection and oversight resources.

13 Another thing that's good for the public is to
14 obtain samples in offsite areas and in the surrounding
15 communities prior to decommissioning, during decommissioning
16 and after decommissioning.

17 And sometimes you might feel like you have
18 sufficient data, but individuals may only trust recent
19 samples and they also may only trust samples that are
20 obtained by either the NRC, or they might only trust the
21 ones that are by the contractor, like we use ORISE. Some
22 only trusted ORISE. Some only trusted us.

23 You can use wind rose data and local meteorology,
24 but in general really have to go 360 degrees around the site
25 because somebody can always ask you a question, What about

1 over here?

2 In obtaining samples, it's good to get written
3 permission from the municipalities, schools and private
4 residences. It was helpful to publish results in our
5 inspection reports and to make them available for the public
6 and include a map for ease of reference, but be careful not
7 to publish a specific address for a private property.

8 Try to -- attempt to answer questions in a timely
9 manner that might be generated. The advantage is it builds
10 trust and improves a relationship, but the disadvantage is a
11 burdening of your inspection and oversight resources, because
12 sometimes when you needed to be inspecting a site and you
13 are back in the office answering allegations or just general
14 questions for the public.

15 And one way that we thought that could greatly
16 help that was to encourage a licensee to develop a project
17 overview which describes all phases of the decommissioning
18 project.

19 Make the citizens of the surrounding community the
20 target audience and try to describe in excruciating detail
21 all phases of the decommissioning project.

22 Include questions and answers for even things that
23 seem obvious. And make it available to citizens, the local
24 elected officials and oversight groups.

25 The advantage is that it has a potential for

1 saving hundreds and thousands of man-hours of time answering
2 requests for information and allegations.

3 And for the Apollo site, when people asked
4 questions, they sent it to the NRC, EPA, OSHA, state
5 officials, federal officials, even to the President.

6 So if you think about all the time that's spent
7 addressing a question or an allegation, if that could be
8 included in just general information that was in a project
9 overview that could be readily handed out to the members of
10 the public or local politicians, it has the potential for
11 saving a lot of time and getting a lot of information out.
12 And it could prevent heated confrontations with members of
13 the public.

14 Make the citizens and surrounding community the
15 target audience and make it so that it's easy to understand.
16 And to a certain extent you have to educate the public on
17 the issues.

18 And we said earlier, in excruciating detail, all
19 phases of it: An introduction to radioactivity, background
20 on it; decommissioning criteria, risks; major steps in the
21 process.

22 Try to explain how the remediation is going to be
23 done. Is it with bulldozers, excavators? What kind of
24 sampling is going to be done?

25 If a truck is going by the person's house and it

1 has radioactivity in it for the waste, people are going to
2 ask questions like, Well, what does that mean to me? What's
3 the risk? What's the dose? What are the future conditions
4 going to be like? What's background? How does this relate
5 to background?

6 All those are questions that we spent many, many
7 hours answering, and if they could have been answered up
8 front, it would have saved a lot of headaches.

9 And the same thing for the questions and answers.
10 When a person sees that one pile, soil pile might be covered
11 and another is not, why?

12 Some people might be wearing what they perceive to
13 be protective clothing; others are not. Why does this
14 happen?

15 Open gates. Unusual equipment: What if somebody
16 is taking a sample in a river, and somebody's going to say,
17 Well, is the river contaminated? Is our drinking water
18 contaminated? And this is still information that could be
19 included up front, and you wouldn't continually answer those
20 questions.

21 Also to a certain extent, you have to justify the
22 inspection and confirmatory process to a certain extent, and
23 you can't be there the whole time. The public may not
24 understand why the NRC or the State doesn't take full charge
25 of the decommission.

1 They might not understand why somebody is not
2 there full-time, and they may question using the licensee's
3 survey results to release the site.

4 And so we found that it's helpful to -- we had to
5 explain our oversight and confirmatory role, and we had to --
6 a good practice was to evaluate the licensee's laboratory
7 and ability to obtain accurate samples and make that -- and
8 describe that to the licensee.

9 If through inspection you develop in the
10 licensee's analytical capabilities, explain why, because
11 there's going to be times when you're using the licensee's
12 surveys to release something.

13 I mean, you might take a couple of samples there,
14 but it certainly isn't going to be the scope of the
15 licensee's, and you're going to have to explain why.

16 Okay, that leaves public relations, and I'm going
17 to talk now about soil pile management.

18 At that facility, we became very focused on a
19 specific square footage of area. This square footage of
20 area is contaminated and has to be cleaned up.

21 So you start digging up piles of soils -- soils
22 and create piles from that area. And we tended to lose a
23 little bit of site over those piles.

24 So you're going to have to track the soil piles,
25 categorize the piles, label them, track the creation of

1 movement, consolidation, use as fill, and disposal.

2 What I mean "categorize the piles," here's an
3 example: Unaffected overburden. Let's say you have a sewer
4 line that's 10 or 15 feet below the surface. The top of the
5 soil is uncontaminated. When you dig that up, that's
6 uncontaminated over unaffected overburden.

7 Your sampling requirements might be different for
8 that than they would be for soil piles that suspect
9 contamination.

10 They had processed soil piles. They sent it
11 through a system which would strain and volume reduce and it
12 would crush rock so that you could efficiently load rail
13 cars and so you actually get a sample so you wouldn't have
14 big like rocks in your sample.

15 They took those and sampled them on a batch basis.
16 If they were clean, they put them in a pile, probably a
17 disposition pile. If it was hot, they put it in a rail car
18 for shipment.

19 So clearly your sample and survey requirements are
20 going to be different for different piles. A disposition
21 pile, a pile that you dig up during your remediation and you
22 sample it and you find it to be clean, like you dug up too
23 much material, you put that to the side, and it's going to
24 have different survey requirements, or it could.

25 And then your contaminated soil piles, you might

1 have different levels of contamination. And then, clean
2 fill. You bring clean fill on the site, and you're going to
3 have different survey requirements for that.

4 So it's very important to categorize what types of piles.

5 Then on the next slide, it talks about labeling
6 the piles, and it probably needs to be expanded, but it's
7 nice to know when you label the piles, you have some idea of
8 where it came from, the type of pile, the category
9 disposition process, unaffected overburden, and maybe a pile
10 indicator, A, B, C, C.

11 And it helps to keep track and maintain control
12 over it and to be able to look at it and understand what the
13 survey requirements for it are

14 Track the life of the pile, the creation, movement
15 and consolidation; it's use of fill; disposal, changes in
16 category; use description, maps and lists to try to keep
17 control over it, because sometimes they might need to move a
18 pile from one location to another to remediate an area, and
19 the next time you go back to the site, that pile's no longer
20 there.

21 Or they might consolidate two piles. You might
22 have a contaminated pile on clean soil or a clean pile on
23 contaminated soil.

24 So it became apparent to us that we needed to
25 focus a lot more attention on the piles that were created.

1 And they shipped off 800,000 cubic feet, then that's a lot
2 of material, a lot of piles that were moved around and sent
3 offsite and placed back into the hole that they were
4 remediating.

5 You have to define the sampling criteria. Usually
6 the licensee is going to have some method for looking at the
7 pile, not just the surface of it but a 3D to characterize
8 what is the radioactivity content in a pile.

9 And that procedure is going to have to have some
10 criteria in it like, for example, you could have a
11 reproducible grid system. You might have to shape the pile
12 into some certain configuration, a certain number of samples
13 based on the volume, a method for selecting sample
14 locations, random sampling.

15 Let's say sometimes you get a core drilling into
16 it. Are you going to consolidate that sample or are you
17 going to take the first two feet, the second two feet, the
18 third two feet and sample it?

19 So it has to meet statistical sampling
20 requirements. And when you do your confirmatory surveys,
21 those confirmatory surveys have to be able to verify it so
22 the regulating agency is going to have to determine what is
23 going to be -- what is a good confirmatory survey. And it's
24 going to be based on this type of criteria and also what
25 type of category the pile is.

1 So you have to define the sampling requirements
2 for each type of pile. And I talked defining soil pile
3 handling requirements.

4 Some you're going to have to cover if it's open
5 for 24 hours or so. Some won't need to be covered. Can you
6 move -- let's say if you have contaminated soil on a clean
7 area and you remove a contaminated pile, then what do you
8 have to go through to verify that the soil beneath is clean?
9 So you have potentially affected that area.

10 And also if you -- you could cross-contaminate
11 clean area when you're moving soil piles in a truck and
12 stuff's coming out the back end. We had that situation
13 occur where, you know, a previously clean pile was
14 contaminated.

15 So the point is the soil piles have to be tracked
16 and evaluated just as much as the area that you're trying to
17 remediate.

18 And also you have to define what type of sampling
19 criteria is going to -- or sampling justifies it as being
20 contaminated.

21 What if you come with this protocol to
22 characterize the radioactivity content and then do, through
23 confirmatory surveys, you take a couple of samples and they
24 come out hot. Well, is that pile hot?

25 Well, under the second definition of the

1 confirmatory survey, it didn't pass that, but are you going
2 to throw that away?

3 You might need to go back to some criteria that
4 looks at the 3D component and gets a better representation,
5 but, either way, you have to think about that in advance
6 because, if your confirmatory survey shows that it fails,
7 then you might tell the licensee to throw that away, and
8 they could be throwing away essentially soil that would pass
9 another protocol, and you don't want to fill up a licensed
10 disposal facility with clean soil.

11 So you need to clearly define how piles which fail
12 confirmatory surveys are going to be dispositioned.

13 Okay, the next topic is going to be general
14 interests that we just picked out. One was low-cost
15 sampling.

16 Because of the nature of uranium, it doesn't give
17 off a high energy gamma and you can't really use -- use of
18 hand-held survey instruments are limited.

19 We had detectors out there that were reported had
20 a LLD of maybe 90 to 100 pCi/g per gram, and that might
21 change with moisture content of the soil, so that is above
22 our release criteria.

23 So one thing that Babcock & Wilcox did, they set
24 up an in-process survey lab, a field laboratory that didn't
25 have to have all the QA requirements for drying it, for

1 exact weight measurements.

2 They just took most the rocks out and filled up --
3 put in a sodium iodine detector which was looking for, I
4 guess, some 184 KED uranium H35 energy and used that as a
5 qualitative check, Was it clean or hot? because you don't
6 want to spend a lot of time, expensive QA samples if you
7 already know that it's contaminated, so they used that in-
8 process sampler to -- they effectively used it to supplement
9 systemic sampling and to determine the need for remediation.

10 You clean up an area. You take in-process
11 samples. You analyze them in the field pretty quickly, and
12 then you move on.

13 It turned out that a system like that could also
14 be used for some kind of oversight group who wanted to obtain
15 samples.

16 If they had used a cheap, inexpensive sodium
17 iodine detector setup, they could find out if there was
18 activity or not and if they should proceed further with the
19 expensive samples. So we thought that that was a good
20 practice and saved some money.

21 Another one that I saw through inspection process
22 was data management. They used a computer system to input
23 their data. They used x, y, z coordinates, and it was
24 entered twice by two separate individuals.

25 And then that data was compared in the computer,

1 and, if it didn't match up, it was flagged, and thereby the
2 could eliminate or minimize errors, so that seemed to work
3 pretty well for them.

4 Also that system allowed them to be able to recall
5 that information either by grid number, survey unit or even
6 the entire site that they were looking at.

7 And it could be easily retrieved, and you could
8 review it by date to see -- you could actually see evidence
9 of remediation where they took samples and they were not in
10 the earlier stages and they were less contaminated or
11 remediated in later samples.

12 Now I'm going to move to some of the -- talk to
13 the state and talk to the licensee, and they had some of
14 these general comments:

15 To coordinate the chemical and radiological
16 remediation. Now, at this certain facility, they were
17 handled separately, in part due to expected loss of burial
18 sites and escalating costs. So they went forward with the
19 radiological remediation. And then, so it was just actually
20 handled separately. Let's see -- does it have -- so it
21 should be coordinated together.

22 Also try to designate one person with authority
23 for both, if the State's handling it, one person for
24 authority for radioactivity and chemicals, because you can
25 prevent conflicting remediation schemes.

1 That site was approached with option 1 of the
2 Branch Technical Position and then ALARA. And the chemicals
3 are often approached as zero background and then they
4 negotiate up. So sometimes the licensee can get conflicting
5 remediation schemes.

6 Establish contacts for air, water, chemical,
7 radioactivity earlier. Another point is ensure that the
8 staff is familiar with the decommissioning plan.

9 The decommissioning plan usually has a lot of
10 information in it that you need to review before you go out
11 there because sometimes, if you're asking the licensee for
12 information and you set up a big meeting with them, the
13 licensee could look at you and say, well, this is already
14 provided in the decommissioning plan.

15 You save a potential loss of credibility if you go
16 asking for things that are already in the decommissioning
17 plan.

18 Keep track of the licensee's schedule because
19 during a major remediation, they could have a lot of
20 equipment on site that they're renting and it can cost them
21 many thousands of dollars for days or weeks or month delays
22 in coordinating with them for surveys, approvals and things
23 of that nature.

24 And then I guess I'll finally just mention
25 maintain contacts with the NRC. When I've had questions,

1 I've found that individuals within the NRC have had a lot of
2 experience and a lot of expertise.

3 And when I started asking these questions, I was
4 surprised that a lot of my questions could be answered by
5 the expertise that the NRC has.

6 And so that's what I've got for you right now.

7 MR. BANGART: We can take a question or two for
8 Randy.

9 [No response.]

10 MR. BANGART: Thank you, Randy.

11 Now we'll hear from Steve Collins, State of
12 Illinois, on the experiences that they've had.

13 MR. COLLINS: I'm going to talk about a
14 remediation that we call successful as does the ex-licensee
15 of a site that was owned by Consolidated Aluminum Company,
16 and it was a joint project between them and Dow Chemical
17 USA.

18 It was a 40-acre storage site in Madison,
19 Illinois, which is the same area as East St. Louis. As a
20 matter of fact, it was located at College at Bokum streets
21 in Madison, Illinois. It's a residential area.

22 The history of that site, it was constructed in
23 the 1940's by the U.S. Government for production of tank
24 turrets.

25 In 1952, the U.S. sold it to Dow. From '52 to

1 '69, they did extrusion and magnesium alloy operations. And
2 from 1969 to '73, Dow leased that to Phelps Dodge, and then
3 in '73, they sold it to Consolidated Aluminum Company or
4 what we normally refer to as CONALCO.

5 The operation continued with barium and thorium
6 and barium/magnesium slag being deposited on site. When
7 they melted this material down and then added bricks of
8 thorium to it to produce alloys, the bottom of their big
9 crucibles or pots were scraped out sometimes and dumped on
10 the back 40, a typical practice in those days.

11 The site was sold to CONALCO, but the -- pardon.
12 CONALCO sold it to Spectrolite Consortium for the
13 production facility. At that time, all of their generated
14 low-level waste was being collected and stored in 55-gallon
15 drums for shipment directly to a licensed waste disposal
16 facility.

17 So since that was a new practice, CONALCO retained
18 the 40 acres back behind the building and kept it so they
19 could sell the other part of the operation that was not a
20 contamination problem.

21 The initial estimates were there were
22 approximately 150,000 to 175,000 cubic yards, which was over
23 100,000 tons, of thorium-contaminated slag on site.

24 The license, when we received it from the NRC when
25 became an Agreement State, authorized only storage of the

1 material and activities necessary to decommissioning the
2 site, planning on what they were going to do to it. And
3 the material also contained barium.

4 The initial plan and what had been proposed to NRC
5 shortly before they just transferred it to us and said, Here
6 it is, you're an Agreement State now, you decide, was to
7 build a burial entombment type facility on site.

8 That next three words kinds of sums our answer to
9 the licensee. That took about a year and a half or two, but
10 in the "understand the answer," it never changed. We just
11 kept giving them different reasons.

12 One of them was that the 100-year flood plain was
13 on a corner of the site. There were several others.

14 One good thing that they did throughout this
15 entire operation was that the licensee maintained very good
16 communications and working relationship with all the
17 regulatory agencies and with their neighbors, including
18 elected officials.

19 Sorry that aerial picture doesn't show up very
20 well. That tries to give you a picture of the big
21 industrial buildings, the residential neighborhood and the
22 surrounding areas, most all of which except for the
23 residential neighborhood, are Super Fund sites due to the
24 U.S. Government activities in the '40s.

25 This shows you that it's not just all slag. There

1 is twisted metal debris, some of it contaminated, some of it
2 now, a whole lot of that sort of stuff along with big chunks
3 of concrete. And by "big," I'm talking about tens of cubic
4 feet chunks of concrete, some big piles that were covered by
5 -- to keep water and wind erosion from occurring in the
6 background.

7 There were monitoring wells on the site. That's
8 what you see in the foreground there.

9 That's the other side of one of those big piles.
10 That was a curved asphalt pad with several thousand cubic
11 feet of the hottest radioactive material on it with a hyphon
12 cover that had ben there several years.

13 They thought they were going to deal with a tomb
14 and store it in a tomb. It was good that they had it
15 consolidated and prevented it from blowing or washing away,
16 though, so that was the hottest material.

17 There were also some other piles of scrap metal
18 and drums of they didn't know what on site. We did work
19 with EPA and with other regulatory agencies throughout the
20 project on all of these materials.

21 Fortunately, none of these other materials on site
22 were contaminated with radioactivity, because, if there had
23 have been, we had no place for any of that sort of mixed
24 waste to go for treatment or disposal.

25 Here's some more of those drums. They contained

1 at that time unknown chemicals. Most of it turned out to be
2 diesel fuel and that sort of stuff that had been used in the
3 process in earlier days.

4 This is what we call a pit. It was a circle six
5 to eight feet in diameter. It was the lowest place on the
6 site. Little drainage ditches drained to it. It is a small
7 site. If you notice, it appears to have liquid in it. It
8 doesn't really. That's just kind of sludge on the bottom.

9 This site is located very near the Mississippi
10 River, and you could get a two-inch rain in one hour and
11 three hours later you could walk over to the site and keep
12 your shiny shoes clean. It was really sandy and porous.

13 Remember that little picture right there. Later
14 on in the talk, I'll show you what ended up because it
15 turned out that there were PCBs in the bottom of that hole.
16 Fortunately they didn't exist on other parts of the site,
17 and those PCBs did not have thorium in them.
18 This was a thorium only site.

19 The concentration of materials there varied from a
20 less-than-background measurement for the thorium to several
21 thousand picocuries per gram.

22 Both thorium 230 and 232 contamination in varying
23 ratios was present. This necessitated a lot of research
24 into efficient analytical methods.

25 I'm not going to go into those, but the handout

1 that I provided you written by CONALCO and Dow people has
2 been presented at some technical meetings goes into a lot of
3 detail about analytical methods that were used by them and
4 some by us.

5 Also we do have a confirmatory survey report that
6 we produced on that closeout of this facility that describes
7 our analytical methods.

8 Let me just say that it is extremely easy to miss
9 thorium 230. If you're going to be involved in some of
10 these, pay particular attention to, How am I going to
11 measure thorium 230?

12 None of this was a problem at this site because of
13 the open communication among everyone involved. Our office
14 processed the information and other information indicating a
15 potential problem was brought to our attention early instead
16 of holding it back to see if we would find it out ourselves
17 like on some other projects we've been involved in.
18 Marjorie may tell you a little bit about that later.

19 It took five years or a little more to
20 characterize the site, to do alternative method assessments
21 and technology development and to construct the loading
22 facility. Only eight months were required to clean and haul
23 and to reclaim the site.

24 The potential volume reduction technology was
25 developed, but due to time constraints, and that was because

1 they wanted to get it done for July 1 of '93 when they
2 thought all the burial sites might close -- the same thing
3 you talked about on the chemical and radiological being
4 considered different because of timeframe considerations
5 from that.

6 March of '92, the rail car, scale and loading
7 facility was completed. April 29 of '92, the first shipment
8 was sent. On December 6th of '92, the project was completed
9 as far as the shipments go.

10 There were 978 rail car loads with 106,000 tons of
11 thorium-contaminated material that was sent to Utah.

12 Now for some lessons: The biggest hurdle for many
13 projects, and this is not news, is agreeing how clean is
14 clean.

15 That didn't take too long on this project. This
16 one was based on the NRC Branch Technical Position of 10
17 pCi/g per gram above background for thorium 230 and thorium
18 and 232 but with an administrative limit, call it ALARA or
19 call it "you're going to have to come back if you don't to
20 it right the first time because of EPA probably," call it
21 anything you want to, but the administration limit was 5
22 pCi/g per gram above background for the thorium.

23 The background for thorium 230 was 1.9 pCi/g per
24 gram, and for thorium 232 it was .8 pCi/g per gram. So 7.7
25 pCi/g per gram was the operative cleanup level for the

1 thorium.

2 And this was for any 15 centimeter thick later
3 averaged over a 400 square meter, a 25 meter by 20 meter
4 area.

5 For PCBs, the appellant EPA and US EPA agreement
6 set 10 parts per million as the soil cleanup limit with no
7 radioactivity different than background.

8 And also, even though it was thought to be
9 unnecessary for this site, 20 micro R per hour above
10 background was the level set for gamma exposure limit.

11 So this, the "How clean is clean?" there's a big
12 problem for SDMP. They've mentioned it already this
13 morning.

14 Some sites are definitely on the list. Some are
15 not. But some are dependent on or tied to the
16 decommissioning rule, which is not being discussed here
17 today. We don't have that much time.

18 Once NRC passes their rule, then the states will
19 implement rules as least as stringent, which may be
20 dependent on the outcome of the war on compatibility.

21 [Laughter.]

22 MR. COLLINS: Another item that is to be agreed
23 upon is the sampling plan. That includes the grid size, the
24 matrix, et cetera.

25 We had agreed to follow what is essentially now an

1 NRC Reg Guide 5849, and that has served us very well.

2 This is a picture -- hopefully you can see some of
3 the strings and some of the little wooden stakes with the
4 flags on them. These are the grids that were marked in the
5 cleanup period.

6 You don't have a nice, flat piece of ground with
7 square grids on it. What you have is square grids that had
8 to be resurveyed and re-marked two or three times a week
9 sometimes because of the cleanup taking out the stakes.

10 But this is an area that is marked as clean and
11 ready for confirmatory sampling and measurements. So these
12 were pits and uneven surfaces. As was stated here earlier,
13 you've got to be capable of climbing in and out of these
14 sort of things to get your samples, tops, bottoms and the
15 sides of these pit areas.

16 We suspect that some of these areas come from old
17 24.304 disposals. There was a regular pattern to some of
18 these lines in the pits that were involved.

19 IDNS sampled 42 out of 415 grids, which are
20 greater than 10 percent, to do confirmatory measurements and
21 to have assurance that the licensee's program was doing what
22 they said it was supposed to do and what we had accepted in
23 their proposal, the cleanup plan.

24 These were essentially 20 meter by 20 meter grids.
25 We also provided splits of every sample that we ever

1 collected and provided it to the licensee and the contractor
2 for the licensee, and we obtained some random split samples
3 from the licensee's contractor, and we grabbed a few biased
4 samples that were based on our surveys with bicron LE
5 organic simulator micro R meter and a 2 by 2 sodium iodine
6 detector with a Ludlum 22 21 scaler that was used for
7 confirmatory measurements.

8 Between June and December of '92, five
9 verification surveys and sampling trips were made for these
10 42 grids. Two additional trips to observe loading
11 operations and to obtain video documentation of the final
12 conditions of the site were made.

13 In addition, I made three additional to survey the
14 vault where they stored some non-contaminated stuff on site.
15 You probably would call that an engineer's landfill. That
16 was magnesium slag that was cleaned, some steel and some
17 concrete. That's a picture of the vault during its
18 construction.

19 A key item, as I've just mentioned, is that a very
20 frequent presence on site and frequent management meetings,
21 at least quarterly, that are non-adversarial in nature are
22 very beneficial.

23 New problems were identified by licensees and
24 potential problems by the regulatory agencies and how they
25 would be resolved during these meetings.

1 On four separate occasions during our gamma
2 surveys, our staff, department staff crews identified small,
3 and my "small," I mean 1 by 4 square feet isolated areas of
4 surface or near-surface contamination.

5 The CONALCO contractor cleaned these up, and we
6 resurveyed them during the day when we were there on that
7 trip.

8 These spots would likely have been within the
9 limits, but they had told us that if we found any "hot
10 spots," as they're referred to, during our survey, they
11 wanted to know about it as a part of their ALARA program.

12 In addition to that, there were was trenching in
13 two different directions -- this shows one -- because each
14 one of these grids, to perform -- to verify the absence of
15 underground layers or deposits of contamination, they either
16 used a two-foot or a four-foot black bucket and dug these
17 trenches across the grids.

18 On the IDNS survey, after all of the rail
19 shipments and equipment, decontamination was completed, a
20 small area of elevated gamma levels was located on the side
21 of the concrete scale pad -- this shows the concrete scale
22 pad -- that was used to decontaminate equipment and metal
23 and concrete and stuff.

24 Where the decontaminated water had carried the
25 materials is where the hot spot was. It had re-contaminated

1 a small area on the side.

2 A biased sample collected from this yielded
3 results of only 9.2 pCi/g per gram, which was above the
4 administrative limit but below the actual reg limit.

5 CONALCO collected it into steel drums and shipped
6 them by truck to Envirocare in Utah, anyway.

7 This site also shows you the protective clothing,
8 respirators, other equipment that was worn. The respirators
9 were not required by regulations or by our agency, but they
10 were agreed to by the company and the contractor.

11 It also shows where the water was generated that
12 went into a collection tank, but still of it splashed and
13 caused recontamination of the surrounding dirt.

14 The average gamma exposure rate was within two
15 standard deviations of the natural background, which was 9
16 micro R per hour plus or minus 2.28 micro R per hour for all
17 of the grids.

18 Selective excavation was a real cost-saver. They
19 basically had guys with survey meters walking around in
20 front of these machines that were picking up the hot spots
21 once they got the initial piles removed and consolidated.

22 They were picking up one- to two-inch layers of
23 stuff so they didn't have to take any more than was
24 necessary to get it cleaned up.

25 The original cost estimates during the early

1 planning stages for this project were \$8 million to \$12
2 million. Final cost was near \$34 million, even with this
3 cost savings.

4 During the early phase, this shows what an on-
5 site accounting room or laboratory looks like. That's
6 inside the tent which is inside a pole barn that was used to
7 store the samples and to keep the wind from blowing them
8 away.

9 This slide shows the kind of equipment that was
10 used in this project. And the guys during the middle of the
11 summer in Illinois were wearing full protective clothing and
12 respirators operating this equipment.

13 This shows the outdoor rail car loading facility.
14 It had a roof over it but was otherwise unprotected.

15 Continuous dust control procedures were necessary.
16 They were spraying water basically continuously because this
17 site was so porous that you could do that and still walk on
18 a ground that wouldn't muddy your feet very much.

19 I think you've seen this. This is the rail car
20 tipping unit at Envirocare in Utah, which was the final
21 resting place for this material.

22 This shows a picture of what was that little
23 6-foot to 8-foot diameter low spot that PCBs in it. They
24 didn't have a cost breakdown of how much was spent for
25 disposal of the soil from the PCB contamination versus

1 radiological, but it ended up that there was just a huge
2 volume of this material, almost as much as there was
3 radiological stuff.

4 This hole ended up being over 18 feet deep to get
5 to the PCBs, so we were very lucky that it was not
6 radioactive also.

7 This is a rail car that was used for shipping the
8 PCB contaminated soil. It had to have plastic liners on the
9 bottom of the rail car, and it had to have a plastic cover
10 over the top in addition to the metal cover that was
11 designed and built by these folks to cover the radioactive
12 materials during the shipment.

13 There were a lot of other hazards at the site.
14 One of them was at this loose material. When they get an
15 area dug and cleaned up, this would clean, but there was
16 about a 10- or 12-foot high wall of loose stuff that, if you
17 happened to get by it and bump into it, it might fall on
18 you. It was very crumbly and soft.

19 But I believe during this entire project, there
20 were no injuries on the site, no work days lost. There was
21 no radionuclide groundwater contamination. We were very
22 lucky.

23 This was very large particle size basically inert,
24 insoluble type materials. They didn't migrate into the
25 soil, nor did any radiological components from them get

1 carried into the groundwater.

2 There were six EPA-approved type monitoring wells
3 as well as a whole lot of other monitoring wells that
4 weren't EPA-approved types that never did show any
5 radionuclide problems.

6 We continued the monitoring of this water after
7 the project decontamination was completed for several
8 months. As a matter of fact, it's still being continued but
9 not on as frequent a basis.

10 The license was terminated after the monitoring
11 well data received in early 1993 showed no change from the
12 previous year's data. And then the surety bond was
13 returned.

14 Marjorie Walle will talk a little bit about a
15 totally different type of cleanup operation and a totally
16 different attitude of a licensee after by closing statement.

17 The basic message for this for the NRC and for
18 other states is that we, the states who are doing these
19 projects, do not need, want or accept NRC management of our
20 programs, SDMP or others.

21 Do not put us into your system or under your wings
22 or into any tracking system to exercise management control.

23 We do not mind telling NRC or elected officials
24 what they need to know about any of our work.

25 The problem that needs to be looked in, and I

1 believe is being looked at, is that we cannot decide on some
2 of these sites until we have the "How clean is clean?"
3 standard?

4 And under 10CFR40, which there is revision work
5 going on, that needs to be completed soon because we suspect
6 that many general licensees under the 15-pound -- 150-pound-
7 per-year possession limit may end up having to be
8 decommissioned and may end up on this SDMP list.

9 And we're not even sure that we can even find a list of who
10 all those people were or are.

11 Another thing that was mentioned this morning that
12 I got a note on is NRC mentioned that they were going to use
13 NEPA in some of this process. Some of us in some states
14 don't have NEPA and don't want it. Don't force it into
15 that.

16 And on any other projects that we're currently
17 working on, please don't mess up our efforts that might end
18 up having a standard that's lower than what you currently
19 perceive your standard to be.

20 MR. BANGART: Any questions at all?

21 [No response.]

22 MS. WALLE: Let me put your minds at rest. I know
23 you hear me coughing and sneezing over there. I'll borrow a
24 line from Jessica Rabbit, from Who Shot Roger Rabbit, she
25 said I'm not bad, I'm just drawn that way. Well, I'm not

1 contagious, I just sound that way.

2 But I want to talk about a much smaller
3 decontamination project, that's AW Technologies that was
4 performed in Morris, Illinois. This actually is about the
5 best of two worlds, because the people in the Morris area
6 had lived around nuclear facilities for years. So we had
7 absolutely no public outcry about this project at all.

8 The building that you can see there is FS
9 Appliances. It's an old brewery -- well, it's part of an
10 old brewery complex that you can see there.

11 It was built in 1888 and virtually the only
12 community involvement that we had any problem with at all
13 was the historical preservation society simply wanting to
14 make sure that there were photographs and a history of the
15 facility before it was razed. Which was what we were -- the
16 licensee was planning on doing. But they cleaned it up to
17 such a level that they didn't have to tear it down after
18 all.

19 You can go on to the next slide.

20 In 1946 the facility was bought by Lindsey Light,
21 and started to manufacturing thoriated mantels there. That
22 process went on until about 1987 when they went down to just
23 doing quality assurance and distributing there, and then in
24 1992 the owners decided that they wanted to decommission and
25 beat the January, 1993, waste costs.

1 So this will show you the facility where the
2 contamination was done. It was characterized by what was
3 around, you can see the top right-hand illustration shows
4 you where the facility grounds were contaminated. And you
5 can see small areas of contamination throughout the various
6 layers of the -- or levels of the building.

7 There was a sub-basement, then a basement, the
8 main floor and then the second floor and a small penthouse
9 at the top. This is a relatively small decontamination
10 project. The financial surety on it was still \$3.5 million,
11 roughly.

12 You can go on to the next slide.

13 This won't give you an idea -- you probably can't
14 see -- I just had the picocurie per gram measurements at the
15 bottom in approximately where they were located. We're
16 looking at the highest area, and it was right there in the
17 lower left-hand corner.

18 There was a drain that came out through there and
19 ran back off of the -- the dash line there is the property
20 line -- back past that. And then we found during the course
21 of reclamation that there was contamination off the site
22 both to the north, just to your left, and it runs back
23 through some public woods and then to the Illinois-Michigan
24 Canal. And then a little bit on the property adjacent, just
25 to the upper part of that slide.

1 You can go on to the next slide.

2 All we had here was thorium, and that's
3 essentially what those slides are going to show you. What
4 you can see from these are that the grid, you'll notice at
5 the bottom, even for the soil sampling and around the
6 facility was a three-foot grid. The people who were doing
7 the decontamination, the owners wanted to be very sure that
8 they didn't come up under any liability later on, so they
9 were very conscientious in their efforts.

10 We took thousands of soil samples, they did. They
11 had a lab on-site that was doing gamma scans and they had --
12 we went out and verified, and you can see we verified almost
13 every one of those squares.

14 You can go on to the next slide.

15 Now, just quickly I want to step through these,
16 one line after another so you can get an idea of what the
17 facility was like.

18 We had a few hazardous materials in there, things
19 besides radiation, but that was not very much. The soil as
20 it was remediated -- or as it was -- the contaminated soil,
21 rather -- was containerized immediately as it was excavated
22 and taken off-site in two or three trucks a week.

23 You can just step right on through here.

24 What we found to be pretty useful in controlling
25 these projects are quality insurance programs and financial

1 assurance programs.

2 Just keep moving through there, that'll be fine.

3 The need that the historic preservation society
4 had we were able to insure by conditioning the financial
5 surety so that we made sure that all of the bills were paid
6 and all the work was done before we released financial
7 surety on that.

8 With regard to the sampling and the testing, and
9 the surveying, we had very few problems. We did run into a
10 problem where someone was notifying us early that the RSO
11 should have notified us of areas that they thought were
12 clean.

13 We went in to verify as they cleaned. When they
14 thought they had an area that was clean then we went in to
15 check it. We would start out at 25 percent and if we found
16 problems then we'd go pretty much closer to a hundred
17 percent. But we tried to keep it reasonable.

18 We also worked very closely with them because
19 these people -- as Mike, you were pointing out -- there are
20 a lot of people who are on payroll. And the licensee is
21 having to fund these people every day that you have an
22 activity awaiting a nuclear -- a regulatory agency, so we
23 tried to be as prompt as we could with them to keep their
24 costs down.

25 We had -- just go on to the next -- these kinds of

1 projects are not like your licensing -- your regular
2 materials licensing at all. You're going to find that
3 people are going to be very much absorbed in what they're
4 doing. You don't just -- that will show you what the
5 gridding was like on the inside of the building, and we went
6 through every one of the reports and made sure that the
7 readings were within our regulations.

8 That's a partial list of the activities, the
9 licensing activities that went on with this project in less
10 than a year. I know you can't read it, I can't read it from
11 here. But there are about four or five other things that
12 went on after that, so -- they're very intensive. You have
13 to work closely with the licensee and you have to move
14 quickly.

15 We had at least five amendments on this license
16 and they were things that had to be reviewed quickly. When
17 we had problems we had to get back with them, they had to
18 tell us how they were going to correct the problem and then
19 we had to get it at least drafted before we could let them
20 go on.

21 But that's where the quality assurance program
22 becomes a very important part of your control over what your
23 licensee is doing. We had their procedures for a number of
24 the activities they were doing there. We went out and
25 actually compared what they were doing to what's in their

1 procedure.

2 At one point we found that they were not living up
3 to the procedure and that they corrected it relatively
4 quickly but even that took awhile. They were surprised,
5 because I guess you don't mostly expect to have a regulatory
6 agency going on and reviewing your procedures.

7 One time one of our licensing people happened to
8 be on site to see just what was going on. I think we were going
9 to have a meeting that afternoon. And he's a tall lanky
10 kind of guy and you put a hard hat on him and a leather
11 jacket and he looks just like some of the construction
12 people there.

13 And he happened to come upon a group of them, so
14 he was standing back behind them, just sort of part of the
15 group but not really part of it. And they were talking
16 about a hot spot that they found. They said oh, we'll just
17 bury it, IDNS will never know about it.

18 And then one of them happened to look up and
19 realized Kevin was standing here, it was like oh, my god,
20 what have we done.

21 So those are some of the fun things that happen,
22 but -- you have to -- we find that if we take over control
23 -- well, we manage the project or try to manage the project
24 for IDNS; let them tell us what they're going to do and how
25 they're going to do it; the frequency they're going to do

1 it; and if we can approve of what they're doing then we just
2 simply go out and verify that they're actually living to all
3 of those.

4 The quality assurance program, like I said, covers
5 everything. The training of your personnel or their
6 personnel, rather. The calibration on their instruments.
7 The tests that they're taking, how they're getting the
8 verification. Essentially it covers the radiation safety
9 program also and any audits that they may do on themselves
10 as well as you can just go out and audit to see how well
11 they're auditing.

12 So it gives you a very strong management tool for
13 these reclamation projects. And you're going to need it.

14 If you have any questions I'll answer them. Yes.

15 MR. BAILEY: How was the contamination identified;
16 I mean had it just occurred? If it hadn't just occurred it
17 seems like it would have been there years ago before it goes
18 out in the environment.

19 MS. WALLE: I always wondered about that myself.
20 It was characterized by ORISE and maybe Steve knows more
21 about it than I do.

22 MR. COLLINS: This was a thorium production
23 facility, they made gas mantles. We received it in that
24 condition when we became an Agreement State. The
25 documentation was that it was contaminated was there. So we

1 were provided that along with license, that here it is.

2 MS. WALLE: Yeah, this is one of those facilities
3 that was on our list from NRC. Actually they had had it
4 decontaminated before we got there.

5 MR. BANGART: That question was from Ed Bailey.
6 I'd like to ask that we hold any further questions until
7 after lunch. The cafeteria is expecting us to be there at a
8 certain time or at least approximately a certain time or
9 we're in danger of missing lunch if we don't get there.

10 I'd like to now introduce Hugh Thompson, the
11 deputy executive director for Nuclear Materials Safety,
12 Safeguards and Operational Support. He's probably the
13 person with the longest title in all of the Nuclear
14 Regulatory Commission. He does have NRC management
15 responsibility for both the Office of State Programs and the
16 Office of Nuclear Materials Safety and Safeguards.

17 John Austin mentioned earlier, Hugh and the
18 Commission have shown a keen interest in NRC's SDMP program.
19 I think as many of you know he's also shown a strong
20 interest in and support for the Agreement State program.

21 So join me now in welcoming Hugh Thompson.

22 MR. THOMPSON: Thanks, Dick.

23 I really want to thank Dick and his staff for
24 selecting this facility and picking this date. A lot of
25 people would have been surprised for us to be in a convent

1 or at least a former convent for this effort, but actually
2 it probably keeps you on impeccable behavior and if not
3 certainly it is a wonderful setting.

4 It actually reminds me of a church service I was
5 at last Sunday, and the pastor asked me did I ever consider
6 the hereafter or worry about the hereafter. And I said
7 every time I get in front of the Agreement State group I
8 wonder what I'm here after.

9 So what I am though, here after today, is to pass
10 along again my support for the SDMP program efforts both by
11 NRC and the states that do have a program. Because it is a
12 very, very difficult effort and one that as you've just seen
13 from today is not easy.

14 As you know, this is Oscar week and I want to just
15 let you know that there's no truth to the rumor that Steven
16 Spielberg has been calling John Austin asking him for the
17 rights for the SDMP program plan. But after listening to
18 Steve and Marjorie and Randy and Mike, some issues kind of
19 came though like Raiders of the Lost Ark for the efforts
20 they are going through, and The Fugitive from the efforts
21 they were looking at, and maybe a cross between that and Ann
22 Sullivan out of The Miracle Worker.

23 If I could just see it, it's Jurassic Park, the
24 SDMP Sequel. But I'm sure that there are those that will
25 recognize this really as a serious effort.

1 Paul Newman in accepting the Oscar said "We are
2 reminded too much about things that don't work and not
3 enough about things that work well." I want to say that
4 before I talk about the SDMP program, I think the Agreement
5 State program and the NRC Material Licensing program works
6 well.

7 I think it works as well as any program jointly
8 together with the state and the federal government, any
9 program that I'm aware of, particularly as it relates to
10 protecting public health and safety. And I personally want
11 to thank each of you here today for your commitment to this
12 activity. I want to you to pass to your staff my
13 appreciation, because we are responsible for tens of
14 thousands of licensees. That job I think you carry out
15 admirably every day and there are obviously areas we can
16 improve on, but I do believe that this is a program that I
17 am proud of and I think that you are proud of also.

18 Nevertheless, we have been I guess criticized in
19 the past and we've been under a lot of scrutiny, both from
20 congressional oversites and from the Commission. And I want
21 to thank you again for your efforts in working with us.
22 Obviously there's varying degrees of support in this effort.
23 But we are really working to make NRC's ability to
24 articulate how the national program for nuclear materials is
25 regulated more understandable to the outside organizations

1 and amongst ourselves, quite frankly.

2 The goal of this workshop, obviously, is to
3 provide you the experience and expertise that we have gone
4 through and obviously with the states which have had some
5 experience with this, and you can understand that this is a
6 very difficult program, often one that we had an immense
7 amount of problems getting our hands around it. But I am
8 certainly pleased with the progress that we've been making,
9 both NRC and obviously the State of Illinois has made some
10 progress and many other states have made some progress in
11 this.

12 But it really takes a management commitment to be
13 able to do this. And this is part of this workshop today to
14 talk about that.

15 Certainly I'm pleased to see some new faces here,
16 in particular Bob Owen from Ohio. We have a saying in White
17 Flint that anything that can go wrong in nuclear materials
18 regulations will first go wrong in Ohio. So we certainly --
19 it seems to be proving the case. I don't know, maybe
20 somebody else wants to take that honor. But Bob, we
21 certainly welcome you here today and let you know that we
22 are delighted to have been working with you on many issues,
23 even this past weekend quite frankly.

24 As you know, this workshop kind of bridges the two
25 workshops that we've had or one that we've had and one that

1 we've got planned, with SDMP licensees that we have or those
2 who find themselves the proud owner of a SDMP site and they
3 didn't realize they had such a site when they bought it.

4 But the next one, I think that the last one that
5 we had was in November of last -- in '92. And we're
6 planning another one with NMSS this spring-time. I think
7 that John or some of the other people in NMSS can give you
8 some more details about that, they certainly would welcome
9 your participation in that program as well as you may have
10 some licensees you would like to have attend such a program.

11 Well, one of the things that we're here today is
12 to kind of look at what I would say is our long-term goals.
13 One of the long-term goals that I have is that the Agreement
14 States and NRC have in place a program which is effective
15 for their overall responsibility for cleaning up the
16 regulatory sites.

17 And that includes the regulations that we all
18 worked on to have a sound regulatory basis as well as a
19 program of financial assurance activities that will provide
20 assurance for NRC to be able to provide assistance on our
21 expertise as we gain experience in cleaning sites up. And
22 also to encourage all of us to continue to work with the
23 other state agencies that are involved, in particular a lot
24 of the state EPA agencies.

25 Part of the benefits of having such a program, it

1 kind of lets us control our own destiny. As we are able to
2 identify the sites, as we are able to say that we have an
3 effective management program for getting these sites cleaned
4 up to an effective standard, then we're able to defend our
5 program from either congressional legislation or other
6 mandates that can come down both from the state side of the
7 house, the EPA side of the house or even from the Commission
8 for that regard, such that we're able to have a program that
9 will withstand external scrutiny and will be credible to the
10 public.

11 My personal experience has been as Dick said
12 earlier, from the inception when I first came into NMSS this
13 was a program that just -- we were not able to make any
14 progress on. We all knew we had contaminated sites that we
15 could not get cleaned up. And until we focused beyond our
16 own management attention in a way that we were able to
17 systematically approach these sites, identify them, put
18 someone in charge, start to identify a licensee to work with
19 and hold responsible or an organization, whether they were
20 licensees or not, we were not able to make progress. And
21 today we are able to make progress.

22 We certainly would -- as we've gone through
23 recently increasing fees, we have identified a lot of
24 facilities that want to go out of the nuclear business.
25 There are concerns about an increased number of sites that

1 need to be surveyed for cleanup activities.

2 So all of these types of things, as your fees may
3 increase also, it's going to be important to have a
4 systematic way to clean sites up, not for you but for the
5 licensees to do that, as well as to ensure that those sites
6 that are out there, your program starts as soon as it can.

7 That basically allows you to prevent a owner from
8 changing companies, from going insolvent, establishing
9 abilities to reach possibly insurance companies or insurance
10 coverage that they may have. We've had cases in the past
11 where there seemed to be transfer of titles and corporations
12 and so it's an area that becomes very sensitive in both the
13 business world and the legal world, and making it very
14 difficult to find someone responsible to clean up a site.

15 And in addition, as you've seen in the discussions
16 on some of the public interest on how well sites are being
17 cleaned up, it can go to a significant degree of credibility
18 of your regulatory program or NRC's regulatory program as we
19 are able to communicate to the public, to the congress, how
20 well we can clean the sites up.

21 Obviously these are fairly expensive programs, and
22 as we've talked about, and they seem to be no profit motive
23 for almost any of the companies to try to clean up a site,
24 so there has to be some external force in order to do that.

25 And in light of the time I will not necessarily go

1 through all the successes, but I would just identify with
2 the Chevron in Pauling, New York. It was a success that we
3 had in cleaning up a combination of Park Service land on the
4 Appalachian Trail and getting the Chevron Company to provide
5 much of the funding. The Budd Company in Philadelphia,
6 Pennsylvania. The Old Vic site which we talked about
7 earlier. And I know the Alcoa site in Cleveland, Ohio, has
8 been cleaned up.

9 But the fundamental purpose that I really wanted
10 to stress is a program consistent with your level of
11 contaminated sites is going to be -- I think is going to
12 vary by state. We have looked at whether this is a matter
13 of compatibility. As you know we have identified not the
14 number of contaminated sites, not the activities, but the
15 fact of how the individual Agreement State's programs were
16 addressing the cleanup of contaminated sites is an issue of
17 compatibility.

18 I know Steve talked about the war on
19 compatibility. Well, it's certainly a friendly war I hope,
20 in the sense that it's an effort by both parties to improve
21 an interest such that we are able to increase the ability to
22 articulate the activities and the affected regulatory
23 programs that we both have for cleaning up contaminated
24 sites.

25 We are clearly evaluating our own success and our

1 own programs. Obviously most states will not have as many
2 contaminated sites as we face and the program will not be
3 quite as large. But the elements are essentially going to
4 be the same. It's going to take highly capable individuals
5 in the field to monitor the activities. It will take
6 management attention to get the licensees' attention, to
7 develop a site characterization plan. It will take effort
8 on your part to identify which of those sites out there in
9 the past may have been contaminated or still in need of
10 cleanup. It will take effort on all of our parts to
11 establish the standards for which cleanup -- sufficient to
12 release the sites is well enough established to carry that
13 out.

14 We certainly do have in place an existing
15 Commission endorsement of standards. We also have in place
16 an effort ongoing that I think will be addressed later, the
17 efforts to establish the rule-making along with EPA as to
18 what the final standards would be.

19 We pretty much have a working relationship and we
20 keep EPA coordinated in the loop as we clean up a site.
21 They are aware that those sites have been cleaned up and we
22 keep them informed. We've not had any experience to date
23 from the radiological health and safety issue. Any site
24 that has been cleaned up under the SDMP program is really
25 subject to or liable to be re-opened, at least from an NRC

1 regulatory perspective.

2 So with those general views, I understand many of
3 you have some concerns about how much NRC is going to fund
4 in this whole area to make sure that your programs are able
5 to carry out this new responsibility. And I wish I could
6 say we have millions of dollars just waiting in the bank for
7 me to just write you out the checks, I would probably be the
8 most popular man that ever was in NRC in this program.

9 I'm probably just the opposite. We don't have any
10 money as the way the program is established today. And
11 that's why I believe the efforts that we have to look at
12 this and whether -- how we articulate this on the issues of
13 compatibility will benefit both of us and us being able to
14 sponsor the need -- if you have need for additional
15 resources that we can be an advocate for you with your state
16 legislature, your state organizations, to ensure that
17 resources are provided for such a program of that nature.

18 So I'm prepared to answer any questions. I know,
19 Dick, we've got a lunch engagement and if it needs to be I
20 can come back after lunch if that's -- whatever your
21 guidance on that is.

22 MR. BANGART: Why don't we go ahead and have
23 questions now if there are any.

24 MR. THOMPSON: If you've got questions that can't
25 stand to wait -- the tickets for Jurassic Park, the Sequel.

1 It can't be this good, now wait a minute -- this
2 is a real hungry group, I can tell.

3 Well, again let me express my own personal thanks
4 to all of you and to your staffs for your efforts over the
5 past year working in all of the areas for which we have
6 mutual interest and responsibilities for. And I do express
7 my appreciation to you who personally came here today to
8 look at the SDMP program because I feel that's an important
9 element in the regulatory activities that you have and
10 certainly the regulatories that the NRC has.

11 MR. CARDWELL: If I may -- Tommy Cardwell with
12 Texas.

13 For this meeting there was a table for the number
14 and size of each one of the states, and I was wondering, is
15 NRC going to publish a list of where these sites are for
16 each one of the states that you all have determined --

17 MR. THOMPSON: If we know of a number of sites
18 we're more than happy to give it to you. I don't know that
19 we have any plans right now to publish them. John, is that
20 from a survey you guys did or from Oak Ridge or --

21 MR. AUSTIN: That's I think part of the
22 information that we've compiled based on the two rounds of
23 questions that -- that's what you're referring to? That
24 will be part of the information that we're currently
25 planning to give to the Commission when we compile all this

1 data and get your comments on it.

2 If there are views that you have about whether or
3 not that should not be released for public information we
4 would welcome those views because right now if we don't hear
5 to the contrary our normal practice would be to eventually
6 make that whole Commission paper including the attachments
7 available to the public.

8 MR. THOMPSON: The question, you thought that the
9 -- you didn't know where the number of the sites came from
10 and how we came up with this number -- it wasn't information
11 you gave us, it was information we developed on our own?

12 MR. CARDWELL: As far as I know we had 11 sites in
13 Texas that were listed, or had 11 sites as the number that
14 we have in Texas. As far as I know we do not supply that
15 number to the NRC.

16 MR. THOMPSON: The number 11 or the numbers -- we
17 had another number, you say?

18 MR. CARDWELL: 11 sites was on the handout that
19 came.

20 MR. THOMPSON: Well, I think that's a detail we
21 ought to make sure we get, and maybe other states have the
22 same issue, so I think we ought to make sure we're in
23 communication with what we think those numbers are before we
24 certainly do anything to make those --

25 MR. BANGART: Yeah, we'll need to -- you could be

1 referring to files that surfaced that involved the Oak Ridge
2 review of terminated licenses that were AEC licenses that
3 are now located in Agreement States.

4 MR. THOMPSON: Hopefully we do not have a random
5 number generator so -- if we do we will shut that sucker off
6 and go back to a more clever way of identifying numbers.

7 MS. FELICE: I'm Julie Felice from Utah, and my
8 management had a concern more or less about having these
9 type of lists being published and put out for public
10 information.

11 MR. THOMPSON: And the concern is based on
12 liability for potential companies that might have sites?

13 MS. FELICE: Well, I think it's probably that plus
14 also public concerns, having to do with answering a lot of
15 extra questions about different sites. Every time something
16 happens in government we get a lot of excess phone calls.

17 MR. THOMPSON: So it would be the sites that are
18 potentially contaminated but there's not yet confirmation
19 that there is indeed unacceptable levels --

20 MS. FELICE: Yes.

21 MR. THOMPSON: I would say we'd have to look at
22 whether that's with-holdable. Certainly one could make an
23 argument that a -- publishing such a list puts a financial
24 impact on a licensee which may or may not be accurate, and
25 we would want to look at that and there may be preliminary

1 information, so I think --

2 MS. ROGERS: But by the act of sending this to us
3 you have made this a public document. And the public will
4 see it and they will be concerned and they will call me and
5 say Alice, what about these 27 sites you've got, and I'll
6 have to say I don't know. I don't even know which ones they
7 are.

8 MR. THOMPSON: That's what you'll say today, and
9 hopefully somebody will tell you by tomorrow what those 27
10 sites are if we know it --

11 MS. ROGERS: That would be real handy.

12 MR. BAILEY: Ed Bailey from California. I have
13 just a clarification. If the licensee that's terminated was
14 never a state licensee are you saying that NRC will not be
15 responsible for that or will the state be responsible for
16 that?

17 MR. THOMPSON: As I understand it, when we
18 relinquished authority, rightly or wrongly we relinquished
19 authority. And we would right now expect the states to do
20 that. If there is a different approach we can certainly
21 discuss that with the Commission. I don't think we even
22 have a regulatory authority to go there, and that's my
23 problem. I don't think there's a -- we could only assume
24 regulatory oversight as I understand it on classes of
25 licensees, and unless the state says this is a class and

1 identifies a class, not just one of a class or two of a
2 class, then we can't do that.

3 MR. BANGART: On the publicly available
4 information, all we've sent back to representatives of
5 Agreement States is the matrix which would have numbers in
6 it obviously but we don't think it's in the public documents
7 to it's -- we'll confirm that for you.

8 MR. THOMPSON: But my guess, Alice is saying that
9 somehow or another every document that we send out
10 eventually gets out somehow, and --

11 MS. ROGERS: By sending information to my agency
12 it becomes a public document as far as my agency is
13 concerned.

14 MR. THOMPSON: Right, the information is available
15 to the public if only by asking for it or you may put it in
16 the PDR, your public document room before you -- put it in
17 the PDR before reading it.

18 A PARTICIPANT: One of the things to be concerned
19 with also is how the financial responsibility such a public
20 list would put on the old licensee or whoever it was that
21 was responsible for that, but with us now hearing that we
22 may be responsible for licenses that were terminated before
23 we even became Agreement States that puts on economic burden
24 on the state regulatory agency that we may not have been
25 aware of or even prepared for.

1 MR. THOMPSON: That's true.

2 MR. BAILEY: Bailey again from California. I
3 guess I don't like to hear that because what you're telling
4 me is I'm to go to G.E. Valcidos and tell them to clean up
5 their act for the three reactors --

6 MR. THOMPSON: No, no, no. Not reactors. We
7 don't include reactors, I don't believe.

8 MR. BAILEY: We have a license at G.E. Valcido,
9 and I think they've had a total of like four reactors there,
10 only one of which is still operational. We've got SMUD
11 sitting there with Rancho Sanco, we've got --

12 MR. THOMPSON: You don't have SMUD.

13 MR. BAILEY: We don't have SMUD but we could.

14 MR. THOMPSON: I'm not sure that you could right
15 now, but --

16 MR. BANGART: We have Rancho Sanco, we have
17 Valcido's reactors and -- but what has happened in --

18 MR. BAILEY: What about the reactors that are no
19 longer there?

20 MR. BANGART: They still are under our
21 jurisdiction of part 50 aspects of the reactors.

22 MR. BAILEY: And the fuel too?

23 MR. BANGART: I believe that's an S&M license that
24 we retain jurisdiction over. But a part 30 license the
25 Agreement State would be responsible for it.

1 MR. THOMPSON: But if we have the regulatory
2 responsibility obviously we'd want to work and probably take
3 the lead in any cleanup effort if it gets on the SDMP or
4 whatever site it -- however we go about cleaning that
5 facility up.

6 MR. AUSTIN: We have a similar facility in the
7 State of New York, and I think the coordination is working
8 quite well.

9 MR. THOMPSON: Well, any other problems you can
10 think of over lunch or something please, Ed, I'm sure you'll
11 probably have indigestion if you can't come up with
12 something for me. I will be around either during lunch or
13 whatever and again appreciate the opportunity to be here
14 today and I certainly thank you for coming.

15 MR. BANGART: Time for lunch.

16 [Whereupon, at 12:15 p.m., the workshop was
17 recessed for lunch, to reconvene later, this same day.]
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AFTERNOON SESSION

[1:00 p.m.]

MR. BANGART: One administrative, logistical kind of announcement -- if you haven't noticed the schedules for limo departures for the airport for the various flights are in the back of your notebook, for those of you who are traveling by air. And I know that some will have to catch a limo as early as 5:00 so we'll try to get everything covered in the time available this afternoon.

We're now going to move into more specific issue areas, a number of them technical, others more programmatic or policy related. I suggest that after each of the presentations we have at least a short period for a few questions and then we'll reserve some time at the end of all the presentations where we'll have some more general discussion and we can cover any and all topics where we need to have further dialogue.

We'll also take a break in the middle of the afternoon so that we can get refreshed. So with that, let's start and we'll have Tim Johnson, section leader in John Austin's branch, talk about site characterization.

MR. JOHNSON: Thank you very much.

There is a hand-out in your notebooks, I believe it's under tab F if you want to follow along.

The objective of my discussion today is to talk

1 about site characterization and some of the lessons learned
2 that we've -- that have fallen out of the SDMP process. And
3 my objective today is first of all to reinforce with you the
4 importance of site characterization activities and the need
5 to do site characterization in a very technically competent
6 way.

7 I think all of you are aware that site
8 characterization is a first step in the decommissioning
9 process. And it's through this activity that data is
10 generated describing the extent and nature of the
11 contamination on the site. And this can be, for example, in
12 buildings.

13 What we're looking for is how large is the
14 contaminated area, what are the range of the activities. It
15 involves soils and groundwater. The aerial extent of the
16 contamination as well as the depth.

17 We're interested in groundwater effects, has
18 migration taken place. What's the direction that the
19 groundwater is moving. And it can also involve chemical
20 contamination. We're interested in chemical contamination
21 not so much because we need it for a decision that the NRC
22 needs to make, but because chemical contamination can
23 trigger other laws and regulations, for example regarding
24 solid wastes or hazardous chemical wastes. And the effect
25 of that can be having to bring in other agencies. It can

1 affect the schedules as well as ultimately the type of
2 remediation technique that's chosen for the decommissioning
3 by the licensee.

4 The importance of site characterization is also
5 that it becomes the basis for the remediation plan. And the
6 licensee is going to want a good characterization in order
7 to be able to select the remediation techniques. He's going
8 to want it for his own cost estimating purposes.

9 It's also important for designing the radiological
10 controls that would be in place during the remediation for
11 protection of his own workers as well as the public. And of
12 course it's also important because it may trigger other laws
13 and regulations from other agencies outside of the NRC, for
14 example.

15 The first important lesson I'd like to talk about
16 is the need for a real high quality characterization. And
17 we've had a number of SDMP sites that have had some problems
18 in this area, and I'd like to talk about one specifically.
19 That's the Chematron site in Cleveland, Ohio.

20 This was a company that made a depleted uranium
21 catalyst for the plastics industry. Their operations were
22 in the late '60s to early '70s. They stopped operations in
23 1972. And since that time they've been struggling with
24 decommissioning. And probably the most important reason why
25 they've been struggling is because they didn't do a very

1 good characterization of the site.

2 In fact what they did was they only looked at
3 surface activity in soils and in a ravine where wastes had
4 been dumped. And this ended up being a substantial problem
5 because NRC was not looking so much at the quality of the
6 data that was provided in Chematron's remediation plan but
7 focused more on the health and safety aspects of how it was
8 done.

9 And the result was Chematron did some cleanup.
10 They called NRC twice and said well, we're done. We sent a
11 confirmatory survey team from Oak Ridge out there twice, and
12 they continued to find more material.

13 Up until 1990 Chematron was telling us that they
14 only had 5,000 cubic feet of waste that needed to be cleaned
15 up. When they had a contractor go out there and remove
16 that, as they scraped off the first layer they kept finding
17 more, and when they had a pile that was about 150,000 cubic
18 feet they decided to stop and relook at what was going on.

19 They then proceeded with a much more comprehensive
20 characterization program and the estimate for the total
21 volume of material that was contaminated is now up around a
22 million cubic feet. So you can see that the initial
23 estimates from the poor characterization very drastically
24 underestimated the total volume of material that they had to
25 deal with on the site.

1 And the result of this is principally significant
2 delays in the cleanup. And what that has exacerbated is
3 political concern. One of the sites that Chematron has to
4 deal with, they have residents that live immediately
5 adjacent to the site. In fact one house is ten feet from
6 the fence line. So obviously the residents are extremely
7 concerned about this. There's been a lot of political
8 activity. It's resulted in lawsuits and also substantially
9 higher costs for Chematron in dealing with this material.

10 So it's very important to generate a very high
11 quality characterization, especially when you're dealing
12 with contaminated soils and so on.

13 The second important lesson I'd like to talk about
14 is the need to understand how the data that's generated from
15 the characterization will be used. We had recently reviewed
16 a characterization plan that it looked to us like the
17 licensee was generating data for the sake of generating
18 data.

19 He was going out and taking samples and thousands
20 of direct measurements and he was going to do all of these
21 statistical analyses on them. But it didn't look like the
22 program was focused toward identifying the extent and nature
23 of the contamination that you could gather by for example
24 doing scans, trying to mark out where the contamination was
25 and then doing direct measurements to determine what the

1 range of activities would be that would have to be dealt
2 with.

3 So it's important when a licensee goes about
4 developing a characterization program that they look at
5 well, how is this data going to be used, and not necessarily
6 to just get data for the sake of generating data.

7 Now, what we've tried to do to eliminate some of
8 these problems is for the more complex decommissioning
9 cases, these would be very large buildings or where we have
10 groundwater or soil contamination. What we are asking the
11 licensee to do is provide us with a characterization plan
12 before he goes ahead and begins his activities. And we
13 would review that and approve that, and hopefully come to a
14 general agreement as to what the scope of characterization
15 should be before he starts.

16 Once we come to an agreement on the plan the
17 licensee would go ahead and undertake the characterization.
18 They would prepare a characterization report that would
19 again be reviewed and approved by us. And hopefully if
20 there's sufficient characterization data that meets our
21 requirements we would authorize the licensee to go ahead and
22 develop the remediation plan.

23 The NRC has also prepared a couple of guidance
24 documents that are relevant to characterization. The first
25 one is a draft characterization and is in the process of

1 being updated and hopefully we'll have something completed
2 later this year.

3 Another document that has some information that is
4 relevant to characterization, although it doesn't
5 necessarily need to be followed completely, is the
6 termination survey manual, NUREG 5849. And many licensees
7 have had suspect areas of contamination or they know that
8 there are unaffected areas that in their characterization if
9 they choose, they can do a survey in accordance with the
10 termination survey plan. And this in some cases might
11 eliminate them from having to go back in and resurvey these
12 same areas for the final survey.

13 So for cases where there's suspect areas of
14 contamination or areas that they know would be unaffected
15 areas it might be useful for the licensee to basically do
16 their final termination survey early on and eliminate those
17 areas from consideration right away.

18 So in summary then, I guess what we've found is
19 that the SDMP program has helped us focus our resources,
20 management and staff, on some of the critical
21 decommissioning issues like site characterization and as we
22 have gone through some of these site characterization
23 reviews there are a couple of important lessons.

24 One is we need a high quality characterization to
25 be done initially or else the licensee may end up

1 remediating something that is totally different from what he
2 really needs to deal with. And that a good site
3 characterization is really necessary in order to march down
4 the decommissioning path without a whole lot of unnecessary
5 delays.

6 If you have any questions I'll be happy to try to
7 answer them.

8 MR. BANGART: I recommend you refer to the report
9 that Jim referenced, because that is a very comprehensive
10 document which provides I think a lot of good guidance on
11 site characterization. The only problem is can the licensee
12 pay for that and then make the cleanup, both, as John
13 mentioned earlier.

14 MR. BAILEY: Can I ask a question --

15 MR. BANGART: Sure.

16 MR. BAILEY: You said a million cubic feet. So
17 that's over \$100 million just in the disposal cost alone.
18 If they had known that would you have allowed them to leave
19 it there, if they'd come in and said --

20 MR. JOHNSON: Well, we've got a remediation plan in
21 from Chematron and what they're proposing is to send for
22 off-site disposal those materials that exceed our option 2
23 limits in our branch technical position on uranium and
24 thorium. And the rest of the material will be put in an on-
25 site disposal cell.

1 MR. BAILEY: Just out of curiosity, if they're
2 going to leave some why can't they leave all?

3 MR. JOHNSON: Well, because the other material
4 substantially exceeds the option 2 limits. The option 2
5 limit for depleted uranium depending on its solubility is
6 either 100 or 300 picocuries per gram. There's material in
7 there that is over 9,000 picocuries per gram.

8 MR. BAILEY: But once you've got a waste site why
9 does it --

10 MR. BANGART: The goal is to release the site for
11 unrestricted use.

12 MR. BAILEY: Oh, so you're going to have a waste
13 site but still release it for unrestricted use.

14 MR. JOHNSON: Right, what we are -- what the
15 ballgame is is that it -- on-site disposal of up to option 2
16 limits would be acceptable for unrestricted release. If
17 it's over the option 2 limits we would not accept it for
18 unrestricted release, and that waste would have to go to a
19 licensed disposal facility.

20 MR. BANGART: John's going to explain all this in
21 his next presentation.

22 MR. SIMPSON: Don Simpson, State of Colorado. Is
23 this branch technical position on site characterization
24 available now? I was under the impression that it's not
25 available.

1 MR. JOHNSON: Yes, it is available.

2 MR. COLLINS: Steve Collins from Illinois. Do you
3 still in that option 2 only require about four feet of
4 cover?

5 MR. JOHNSON: Yes.

6 MR. COLLINS: And that's going to be okay for
7 unrestricted use?

8 MR. JOHNSON: Yes.

9 MR. COLLINS: So they'd never build houses with
10 basements in this area?

11 MR. JOHNSON: Well, if you look at depleted
12 uranium, even if the cover is removed the doses to an
13 intruder for depleted uranium would be up to about 20
14 millirem per year. And we've found that to be acceptable.

15 MR. COLLINS: That excludes radon and radon
16 daughters; does it not?

17 MR. JOHNSON: Yes. Our policy is that we would
18 evaluate these on-site disposals up to a thousand-year
19 period.

20 MR. BANGART: Thanks, Tim. Now, John will
21 continue this, I'm sure, with an explanation of our existing
22 remediation criteria.

23 MR. AUSTIN: Now that Tim has told you how to
24 characterize the site, the next thing you would be asked is
25 what are the residual contamination criteria. And my charts

1 are at tab G. If I could have the outline, please.

2 Decommissioning is defined in the regulations as
3 removing as a facility safely from service and reduced
4 residual radioactivity to a level that permits release of
5 the property for unrestricted use and termination of the
6 license.

7 The regulations do not specify what exposure rates
8 or exposure scenarios are to be considered in making this
9 determination of unrestricted use. So I will be describing
10 what our existing criteria are, where they came from, some
11 of the issues associated with them and then a little
12 discussion on the thorium matter which is posing some
13 challenging issues for us, and then describe some future
14 activities in this area.

15 On the next chart, we use Regulatory Guide 1.86
16 which was developed in 1974 for the termination of operating
17 licenses for nuclear reactors. That REG Guide has levels
18 and DPM for 100 square centimeters, for fixed, removable and
19 average, for beta/gamma, for alphas and for particular
20 nuclides.

21 As I said earlier, this REG Guide was developed
22 based in part on instrumentation sensitivity back in the
23 early '70s. For the materials licensing program. I think
24 it was in the last '70s. We developed guidelines for
25 decontamination of facilities and equipment prior to release

1 for unrestricted use or termination of the licenses. That
2 has been reissued in August of 1987. It incorporates
3 basically the table from REG Guide 1.86.

4 Now, these deal with equipment and structures for
5 soils. In 1981 the fuel cycle group developed a branch
6 technical position on the on-site storage of thorium or
7 uranium waste from past operations. In essence that branch
8 technical position had five options.

9 I'll talk a little bit more about options 1 and 2
10 in a moment, but option 3 had higher concentrations than
11 option 2. It called for burial, called for deed
12 restrictions and for markers.

13 Option 4 had yet higher concentration levels
14 involving deed restrictions and markers and other special
15 precautions. And option 5 was one of those if you can't do
16 it by any of the others come and talk to us and we'll see
17 what we can do.

18 In 1988 when the decommissioning rule was
19 promulgated with the unrestricted use standard not a whole
20 lot of attention was paid to that standard by the fuel cycle
21 folks. They had assumed that options 3 and 4 were still
22 viable until SDMP began to focus attention on what were the
23 acceptable levels. And we interpreted the term
24 "unrestricted use" literally. And stated that deed
25 restrictions are inconsistent with an unrestricted use

1 standard.

2 Therefore options 3 and 4 were no longer viable
3 after great debate, and eventually we took this through the
4 SDMP Action Plan to the Commission and the Commission
5 adopted only options 1 and 2 for uranium and thorium.

6 Within structures we used the five micro-R per
7 hour at one meter above background as an acceptable exposure
8 rate multiplying that out for the standard 2,000 hours per
9 year occupancy factor, and that translates into ten millirem
10 per year.

11 On the next chart the action adopts as a point of
12 departure EPA's National Primary Drinking Water Standard in
13 40 CFR 141. That is about four millirem per year drinking
14 standard, I think it's two liters per day of the water under
15 consideration.

16 We also use EPA's Guidelines for Protection
17 Against Transuranic Elements. Those were based on a
18 presumed dose of 1 millirad to the lung with a quality
19 factor of 20 and a 3 millirad dose to the bone.

20 We also use ALARA, and I'll be talking more about
21 that later.

22 On the next chart regarding where did all of these
23 numbers come from, it was a collection of past practices
24 since the mid-'70s. There is no real coherent underpinning
25 for this collection of standards, some developed by us, some

1 developed by EPA.

2 But they have been reviewed and approved by the
3 Commission for use in the SDMP. We use them to define
4 unrestricted use until the rule-making on residual
5 contamination has been completed. So it translates -- you
6 meet these numbers and you are home free and you may use the
7 site in any way you wish. And as I mentioned earlier, a
8 crucial factor in all of this is how do you go about the
9 analysis.

10 We have analysts, modelers that can take a given
11 problem, make their assumptions which are plausible,
12 defensible; grind out the number and say it's all below the
13 line.

14 You get another collection of modelers, make
15 reasonable defensible assumptions, go through their analysis
16 and they'll say it's all above the line.

17 In fact one of our first attempts to perform a
18 dose assessment through a contractor involved a 20.304
19 burial, and we told our contractor, tell us what the
20 exposure rates might be assuming unrestricted use of this
21 site containing buried thorium.

22 After about six months they came back with the
23 draft report and they said well, the exposure rates are
24 somewhere between a few micro-R per hour and a few tens of R
25 per hour. Which was kind of an interesting example of what

1 modelers can do, and we're supposed to make decisions on
2 that?

3 These values do not carry the force of a
4 regulation. Therefore if the licensee wants to challenge
5 them they can. Thus far, we and the licensees have been
6 able to live with these values.

7 As the last bullet indicates, they have associated
8 with them doses ranging from a few millirem per year to a
9 few tens of millirem per year, usually involving the human
10 intrusion scenario.

11 The thorium option 2 level has doses much higher.
12 There the dominant exposure pathway is human intrusion with
13 direct exposure and the 25 picocurie per gram thorium 232
14 option 2 level has a dose associated with it of about 170
15 millirem which exceeds the new part 20 and therefore we have
16 struggled with what to do about these thorium sites.

17 On the issues, the Action Plan does call for the
18 ALARA principle in deciding on acceptable individual
19 remediation standards using the ALARA principle. The
20 Commission has not adopted a dollar value for a person REM
21 averted in the environmental setting. We have a lot of
22 experience in performing ALARA analysis on emissions, but
23 that is a well-defined problem. You know the demographics,
24 you know the wind direction, you know concentrations and you
25 can grind out those numbers relatively easily to calculate a

1 person REM.

2 But when you're involved with radionuclides that
3 have very long half-lives such as uranium and thorium and
4 radium it raises a question of what is the population group
5 that w' ' be exposed; how many generations do you have to
6 add in to this person REM calculation; discounting human
7 life in future.

8 It raises a lot of fundamental questions about how
9 to do an ALARA analysis. So we are tending to accept
10 qualitative arguments. That is, if it cost -- the easiest
11 example I give to licensees is that if it cost a billion
12 dollars to remediate the site we would consider alternatives
13 other than those described in the Action Plan.

14 And in fact we are going to resolve some of these
15 more difficult problems through the DIS process.

16 One of the things high on the minds of the
17 licensees that have these SDMP sites is will they be
18 vulnerable to EPA and Superfund coming along later. Our
19 argument to them is of course the closer you are to the
20 Superfund minus four goal the greater the chance that you
21 would not be revisited through the Superfund process.

22 Nonetheless, the Superfund legislation states that
23 it is not -- Superfund is not applicable to "Federally
24 permitted releases." It is possible, although it has not
25 been tested in the courts, that if NRC approves a burial as

1 a licensing action that that could be deemed to be a
2 federally permitted release, and therefore not subject to
3 the Superfund legislation. But as I said, this has not been
4 tested in court.

5 We do keep EPA informed of our decommissioning
6 actions under the SDMP.

7 On the next bullet, should we and how would we
8 issue an exemption to the unrestricted use standard. As
9 many of you probably know, in the Envirocare case in Utah
10 the State of Utah had exempted Envirocare from the
11 institutional control provisions of part 61. NRC took the
12 review of that matter from the compatibility perspective.
13 The issue went to the Commission.

14 Following a letter to the State of Utah that said
15 that it could be possible to justify such an exemption if
16 there were deed restrictions, restricted covenants placed on
17 the deed of the following kind -- Utah did that and after
18 Commission review the Commission endorsed that approach for
19 ensuring long-term control and better insuring that there
20 would be no human intrusion in the future.

21 So that is a possibility that we are exploring in
22 some of the thorium contaminated sites under the SDMP.

23 How to be pragmatic. There is big attention on
24 how much money should go into site characterization, how
25 much money should be spent to move dirt from one location to

1 another location. And the direction to us is that we should
2 look for pragmatic resolutions of very complicated problems
3 with the public involvement. And we are trying to enhance
4 the public participation process in making decisions on
5 decommissioning criteria at sites.

6 One of the technical underpinnings of the -- or a
7 parallel effort under the enhanced participatory rule-making
8 is a cookbook on how to go about translating a dose
9 objective into concentrations on structures or in soils.
10 That is coming out volume by volume in NUREG 5512. And many
11 are wondering, is that going to resolve the analytical
12 approach for SDMP sites.

13 NUREG 5512 has been developed like the residual
14 contamination criteria rule-making, and that is to cover 99-
15 plus percent of the cases. As with most regulations one
16 does not try to write a regulation that will cover every
17 possibility.

18 I am rather skeptical that NUREG 5512 will be able
19 to come up with a generic groundwater model that could be
20 used to screen burials. The starting point for -- I think
21 essentially all of the 5512 calculations is surface
22 contamination, not volumetric contamination, and that is
23 what we are dealing with in SDMP.

24 What to do about thorium. That's on the next
25 chart. As I mentioned, option 2 for thorium has a human

1 intrusion exposure rate of 170 millirem per year. And
2 assuming the factors that are listed there including a
3 2,000-hour occupancy factor, this raises the question as to
4 whether four feet of cover would be adequate for thorium
5 disposal.

6 We think it is adequate for uranium disposal under
7 the option 2 as Tim mentioned, even assuming human intrusion
8 for option 2 on uranium the doses are around 20 millirem per
9 year calculated conservatively.

10 We have suggested to SDMP sites that we would
11 entertain the possibility of neglecting the human intrusion
12 scenario if the material were sufficiently isolated from the
13 potential for human interaction such as burial in an
14 abandoned mine or burial in a rather remote part of the
15 country.

16 No one has come forward with that kind of
17 proposal. Rather, we're getting many more requests for what
18 amount to exemptions to the unrestricted use standard. And
19 those will be resolved under the DIS process and public
20 involvement.

21 Future activities. We certainly look forward to
22 our Office of Research to complete the enhanced
23 participatory rule-making. If it doesn't solve many of our
24 problems it certainly gives us something better to use as a
25 crutch in making decisions on these complicated sites.

1 We will continue to make case-by-case
2 determinations on the thorium sites. We will be exploring
3 the potential for exemptions to the unrestricted use
4 standard and possibly by necessity the part 20 limit that
5 those kinds of exemptions may be required if substantial
6 concentrations of thorium are to be disposed of under four
7 feet of cover.

8 And I think you'll hear a little bit more later
9 today about the effort to harmonize risk assessment
10 methodologies and risk management goals with the EPA. That
11 is a very exciting and illuminating exercise. It's been
12 underway for almost a year now, I think. We are getting
13 close to a final paper on it.

14 It is not a issue resolution paper. It is
15 intended to be a factual "here is the way it is" paper.
16 Then we'll enter the more interesting part of that exercise
17 and that is who is going to get it, the EPA or NRC.

18 So that's all I have on our criteria. I hope
19 they're all very clear and understandable and defensible.
20 Ed?

21 MR. BAILEY: Bailey from California. I find it
22 interesting that for unrestricted use you use 2,000 hours a
23 year. And that five micro-R -- you could put a day-care
24 center in there, right? And if you did you would certainly
25 -- the little toddlers and stuff would certainly exceed

1 2,000 hours a year because they generally stay in a day-
2 care center ten hours a day.

3 For unrestricted, 2,000 is to my way of thinking
4 totally unreasonable. It should be the 80.

5 MR. McCANN: You just introduced a factor of five
6 dispute here. We've got more.

7 MR. BAILEY: Well, I mean that jumps it up to 44
8 millirem a year which is not acceptable by anybody's
9 standard, and I guess I don't understand your problem with
10 applying either the uranium and thorium mill standards or
11 the low level waste standards to these disposal sites that
12 you're going to create. I don't know why they don't have to
13 do an analysis for a thousand years, for -- there are not
14 many places that four feet of cover is going to end up
15 lasting a thousand years like a mill site.

16 So I -- it's like we're taking the same material
17 and we're going to treat it differently because it's in a
18 city where there are more people around it than a low level
19 waste site where there's nobody around it, or a uranium mill
20 tailing site which normally you don't have a lot of people
21 around.

22 So all you're doing with this kind of stuff is
23 increasing the risk for no apparent benefit. To my way of
24 thinking.

25 MR. AUSTIN: Well, the low level waste standard is

1 25 millirem per year from all pathways. I believe that the
2 decisions that we've made thus far on SDMP sites are better
3 than 25 millirem per year on conservative analysis.

4 The mill tailing standard, that has been proposed.
5 At one point we argued that it is not like mill tailings
6 because in mill tailings you have removed essentially all of
7 the uranium. Therefore no more radium, very little radium
8 would be growing back in. With uranium disposal radium in
9 fact does grow back in.

10 That invoked great debates on whether we calculate
11 the risk out to a million years or a hundred million years
12 to find this peak from daughter ingrowth. The decision was
13 made to truncate the calculations at a thousand years. As a
14 practical matter that makes very little difference in the
15 calculations because for thorium they're already in secular
16 equilibrium after about 50 years.

17 For the uranium radionuclides, the daughters
18 cannot grow back in in a significant way until several
19 hundred thousand years.

20 MR. BAILEY: I guess I have to take exception to
21 one statement you made, and that was that you're already
22 meeting the low level waste site standard. And certainly 44
23 millirem from direct exposure is not less than the low level
24 waste site standard.

25 MR. AUSTIN: That 44 millirem that you calculated

1 is one modeler's approach. There are other approaches to
2 perform these analyses. 2,000 hours is the typical
3 residence time that we use, and I believe EPA uses. And
4 DOE.

5 MR. BAILEY: You certainly don't use it though for
6 modeling releases from a low level waste site or for a
7 uranium mill tailing site. If it's unrestricted, to my way
8 of -- what I've always been told is you take every hour in
9 the year if it's unrestricted. And I think that's the way
10 NRC has inspected against a 500 millirem a year fence line
11 dose that used to exist.

12 To take suddenly 2,000 is brand-new news to me,
13 and if anybody else -- maybe I've just been out of it and
14 didn't know that.

15 MS. McBAUGH: Well, for the new part 20 though the
16 hundred millirem allows occupancy, so I think maybe that's
17 where they're using that 2,000.

18 MR. BAILEY: But that's -- it finally allows you
19 to take into account occupancy.

20 MS. McBAUGH: But for unrestricted as well, so it
21 seems reasonable to not take every hour in the year even in
22 unrestricted --

23 MR. BAILEY: No, but if you remember in the
24 calculation, when you take the unrestricted you may end up
25 having to take every hour in the year if you contemplate

1 somebody living right next door. So what we're doing here
2 is saying we don't care what happens any time in the future
3 and there's no way you can prevent somebody from building a
4 house and living on that property.

5 MR. AUSTIN: A person may well die of boredom
6 standing on one of these sites for every hour of the year
7 for 70 years. But there is a trend to be more realistic
8 about how one goes through these assessments. Under
9 Superfund, EPA has performed demographic studies. What they
10 have found is that with 95 percent confidence people do not
11 live in the same dwelling for more than 30 years. Therefore
12 they are allowing their calculations to use the 30 years,
13 not the 70 years that we currently use.

14 And that's to factor in reality. It's in
15 recognition that it -- costs to protect every single
16 individual in the world would be prohibitive. That we're --
17 we will not have a perfect solution to some of these very
18 complicated problems.

19 MR. BAILEY: Well, I would have to make the
20 argument to you that whereas their results show that a
21 single person lives in a house no more than 30 years or
22 whatever, there are exceptions to that --

23 MR. AUSTIN: Yes.

24 MR. BAILEY: -- and houses tend to be occupied for
25 longer than that. So from a risk standpoint or effect

1 standpoint it doesn't matter how long they live there. It's
2 for the life of that house.

3 MR. AUSTIN: From the risk perspective which I
4 believe normally includes a probability, what is the
5 probability that this person who stays in their house 24
6 hours a day 365 days a year for 70 years, maybe 80 years,
7 happens to be the one individual that builds a home on one
8 of these sites.

9 That sounds like a rather low probability to me.

10 MR. BANGART: Ed, I think the general point is
11 well-taken. There is a need for NRC, EPA, DOE and the 29
12 Agreement States to approach the scenario for dose
13 calculations in a similar or consistent way. And that's a
14 goal that certainly I think we're trying to work for, work
15 towards. And the enhanced participatory rule-making process
16 is going to be one avenue to help us try to achieve greater
17 consistency, and workshops like this and us working together
18 in the future I think will help achieve that goal.

19 But it's an important point, I agree with you.
20 Yes.

21 MS. DIBBLEE: I want to make just one more
22 comment. When NRC is the risk assessment, they came out
23 last year I guess it was, the one that Cheryl did -- you did
24 good -- that was very conservative, that was on the other
25 end of the spectrum is what I'm trying to say. So that if

1 we had done this risk assessment the same way we did the
2 sewer risk assessment then we would -- you know, on equal
3 ground. That was a very conservative --

4 MR. BANGART: Are there any other questions for
5 John? Bob?

6 MR. OWEN: John, one concern that we have in Ohio
7 is the relativity concept or the options of burial cells, is
8 the difference between -- and in the case of Chematron about
9 300 years in the ground and the soil concentration limit of
10 35 -- understanding that there are additional barriers with
11 the burial cell which seem to permit the higher limit per
12 se, but then having said that my understanding -- and you
13 correct me if I'm wrong -- is that once that is accomplished
14 the NRC would terminate the license and walk away. And the
15 site is released for unrestricted use.

16 No one will say you don't care what people do
17 after the fact, but I'm very close to saying that. In fact
18 you do walk away and you really are not cognizant of what
19 people do and bulldoze it up and dig the ground up in order
20 to put a underground parking garage there or whatever they
21 want to do is permissible. Absolutely, because it's quote,
22 unquote, "unrestricted use."

23 What happens when you disturb that four-foot layer
24 is that you now present the same scenario as does that which
25 requires the 35 picocurie per gram limit. Which is a factor

1 of ten difference. Or close to it.

2 I don't believe that -- something is not
3 consistent there. In that analysis. And I would highly
4 recommend if the NRC is going to insist upon burial cells
5 continuing to be an option -- which is not my favorite
6 option, but -- then there needs to be some restrictions, in
7 other words not unrestricted use. But there needs to be
8 some post-closure requirements so that people can't just do
9 whatever they want to do with that material given that it is
10 ten times higher than what you would allow for a bona fide
11 unrestricted use of 35 picocuries per gram.

12 MR. AUSTIN: A point well-taken. We have had I
13 think Dick Bangart would say too many debates internally
14 when he was director of the low level waste and
15 decommissioning about the usefulness of option 2. But again
16 that has been reviewed by the Commission and approved.

17 The doses that I have been mentioning here for
18 option 2 assume that the cover is removed. And that there
19 is human intrusion. And they are for uranium about 20
20 millirem per year. And that in many minds is not an
21 unacceptable exposure rate.

22 The cover is probably more of prudence, that you
23 would prefer that people not interact with the buried waste
24 but if they did they would not receive a -- we think is a
25 harmful exposure under reasonable scenarios.

1 There is a case -- it's the Cimarron case in
2 Oklahoma where they have something like a half a million
3 cubic feet of contaminated soil that they have proposed to
4 scoop up and bury under option 2. I think the average
5 uranium concentration would be around 70 or 80 picocuries,
6 something like that. It's not the full-blown option 2
7 disposal.

8 The staff is prepared to authorize that. The
9 Commission has reviewed and approved this authorization for
10 release -- unrestricted use with the caveat that as a matter
11 of prudence there should be a notation placed in the deed
12 that uranium is in fact buried in the following location and
13 that there would be markers placed on the site as a matter
14 of prudence.

15 But the policy call has been that doses under the
16 human intrusion scenario of 10 to 20 millirem per year are
17 acceptable.

18 MR. OWEN: John, if the cap is simply a issue of
19 prudence, it's not public health and safety, then -- and
20 thus you assume that 300 picocuries per gram is the
21 acceptable limit for unrestricted use, why do you hang your
22 hat on 35?

23 MR. BANGART: You might want to mention
24 groundwater, John. Groundwater analysis for option 2.

25 MR. AUSTIN: Oh, yes. We have to go through a

1 groundwater analysis on option 2. The 300, though, is for
2 the insoluble uranium.

3 MR. BANGART: I'd just like to throw in one
4 comment. There was a great deal of pragmatism thrown into
5 the Commission's decision to go forward and approve the
6 continued use of the interim criteria. Recognizing the
7 inconsistencies, recognizing if you put them under a
8 microscope and start to criticize you're probably going to
9 find some weaknesses or some arguments to be made against
10 their use.

11 But the dilemma that the Agency was facing is do
12 we do nothing in terms of arguing for the cleanup or forcing
13 licensees to clean up until such time as we get in a more
14 defensible position where we have the enhanced participatory
15 rule-making in place and all the guidance that goes with it,
16 which we hope would have a more consistent picture laid out.

17 And the Agency basically said the existing
18 criteria for reasonable scenarios are safe and it's
19 acceptable to continue with their use. They were the
20 criteria that existing licensees had been made aware of and
21 were exposed to when we first entered into a dialogue with
22 them about the need for cleanup or remediation.

23 So basically when you balance that the Agency felt
24 it was safe and it was in the national interest to move
25 forward with a program that would call for action to

1 remediate these sites rather than to wait until such time as
2 we got the rule-making in place and completed. Because we
3 knew that was going to be a multi-year process.

4 So you know, that was basically the policy kind of
5 rationale that was used to endorse and support the criteria
6 that we're using now. However flawed you might view it.
7 But that was the balancing that was done and that was the
8 decision -- the decision-making process.

9 But let's take two more questions, I think they
10 were over here, and then we're going to have to move on.

11 MS. CRAWFORD: It's not really a question, it's
12 really just a suggestion that I would like to get on the
13 record and I don't think anybody would argue with your issue
14 that you're trying to be pro-active rather than reactive.

15 But on down the line when you start talking about
16 these SDMPs and the potential for compatibility of this
17 whole issue with the studies, it's just to keep in mind what
18 we've just heard here. Everybody's assumptions are
19 different. Everybody's models are different, and it doesn't
20 mean that any one person's model or one state's programs is
21 any better than another.

22 When you start looking at the issue of
23 compatibility please keep that in mind because a prime
24 example is what I just heard John say, was we started
25 talking about EPA's assumptions, and they actually dealt

1 with reality which floored me to begin with when he said
2 that nobody's going to stay anywhere more than 30 years,
3 because we have been dealing with EPA representatives for
4 the past three or four years on the norm issue which I
5 realize is an aside issue that the NRC doesn't have a
6 problem with, but the states really do have a real problem
7 with, and EPA is going with the 70-year period.

8 So I'd love to see any kind of documentation you
9 have from EPA that says 30 years is more acceptable for
10 someone building a house and staying there. But it's a
11 prime example of pointing out the fact that we certainly
12 don't need to get into model wars and that needs to be
13 considered on down the line when we start talking about
14 states possibly implementing the plan.

15 MR. BANGART: I would just offer one comment. You
16 know, the black box of the models is something that we're
17 all vulnerable to in terms of public acceptability of our
18 programs, and when we have these black boxes that people
19 don't understand very well and when you start looking at
20 them in detail and you find that there are different
21 assumptions, different scenarios that are being used by
22 different agencies, it's terribly difficult to attain a high
23 degree of public credibility when you have to -- you have to
24 try to work through that and explain it, because it doesn't
25 make sense to people outside where you're dealing with

1 people in the public.

2 Steve?

3 MR. COLLINS: Steve Collins from Illinois. One
4 comment and one question.

5 We had a lot of modeling for a site we're working
6 with right now. We found that four meters -- most all of
7 the modeling and scenario problems, if you take away four
8 feet and make it four meters it really helps a lot. With
9 all of these places. And with most all of these intruder
10 scenarios the problems go away, for any residential or
11 typical industrial places.

12 The question is, are we in this workshop going to
13 hear anything about a technical basis for either a 25
14 millirem or 15 millirem standard?

15 MR. WEBER: Yes.

16 MR. BANGART: Mike I think will be talking about
17 the decommissioning criteria and rule-making and its
18 relationship to other standards.

19 MR. COLLINS: I heard him say yes and you say
20 maybe.

21 MR. BANGART: There are two initiatives, I think,
22 that are perhaps more important or as important as any other
23 in rule-making space for NRC that will help solve problems
24 that we're currently dealing with and prevent them from
25 occurring in the future.

1 One is the decommissioning financial assurance
2 rule that I'm sure all of you have in place, and the other
3 is the timeliness rule that will assure cleanup in a timely
4 fashion.

5 So Cheryl?

6 MS. TROTTIER: Thank you. Good afternoon. Now
7 that I'm old, I have to put glasses on, so I better do this;
8 otherwise, I'll never read this stuff.

9 Okay. On the first slide -- my primary purpose
10 today is to try to give you some perspective of where we are
11 all the time in this rule.

12 And I thought I would begin by running through a
13 little bit of the components of it, since it's been some
14 time since it went out for public comment and you probably
15 long ago forgot about the timeliness rule.

16 It was published in January of '93. We did not
17 get many comment letters. We have a total of 17 letters. I
18 broke them to get a feeling of where the letters came from.

19 And to be honest, during a lot of this time
20 period, there was some discussion about whether we should
21 hold off on the timeliness rule because of the residual
22 criteria that were being developed for decommissioning.
23 And when we get into the comments you'll see why there were
24 a number of comments on that issue.

25 So that's one of the primary reasons why it's been

1 held up.

2 But, of course, the real purpose of issuing this
3 rule is just to establish time periods for decommissioning,
4 so we finally made a decision that we could go forward and
5 finalize the rule as long as we stuck to that issue only and
6 didn't bring in any ancillary issues associated with other
7 aspects of decommissioning.

8 Next slide. What I thought I would do is run
9 through a little bit of the primary provisions that were in
10 the proposed rule and then tell you where we're thinking of
11 going in making changes.

12 In general, the final rule will look mostly like
13 the proposed rule. And, as I said, I'll run through some of
14 this modification.

15 There are certain time periods identified in the
16 rule.

17 Maybe it would be better to put up the next slide,
18 Nick, because I decided when I was doing this to do time
19 line.

20 You don't have this in your book, but at least
21 it's easier to look at, I think, as to when things occur.

22 We do get a lot of comments on the timing of
23 various aspects, and I think part of that is -- there was
24 some confusion when they read the proposed rule as to what
25 was intended by various time periods. We'll try and clarify

1 that when we publish the final rule.

2 Initially, the first time period is 60 days after
3 cease activities or have been -- let me back up a minute.
4 The 30 days is up there, but I'm going to back up to 30
5 days.

6 When you hit the 60-day mark, which is that you
7 have either decided to terminate your activities or you have
8 not conducted activities -- terminate your license or
9 conducted activities for two years, you have to submit a
10 notification.

11 Now, the 30 days is in there because, if you
12 decide that you want to request a delay to begin
13 decommissioning, you have to submit it prior to hitting that
14 60-day mark.

15 The intent was that there was sufficient time
16 ahead of time for people who know they wanted to delay
17 decommissioning and so that they didn't have to wait until
18 that 60-day point to go ahead and submit a request to delay.

19 So there's a 60-day mark, but prior to that, if
20 the licensee wants to delay the onset of decommissioning,
21 they have to put that notice in prior to the 60-day cutoff
22 point.

23 All right. At that 60-day point then, licensees
24 are either supposed to begin decommissioning or that starts
25 the clock on preparation of a decommissioning plan, which

1 must be submitted within 12 months of that 60-day date or
2 that 60-day notification.

3 Now, the rule does have provisions for requesting
4 an alternate schedule for submitting the plan and there are
5 no dates associated with that, but there is a provision in
6 there that if you want to have an alternate schedule, you
7 can submit a request for that; in other words, not submit
8 the plan within the 12-month period.

9 The next date then is to submit the plan at the
10 12-month timeframe, and then it would go through an approval
11 process, and then you would begin decommissioning.

12 Again, there is another provision there, and that
13 is a provision for getting an extension on the time to
14 decommission.

15 As the rule was proposed, the rule is proposed
16 with an 18-month period for completing decommissioning, so
17 from the beginning of decommissioning to the end, it should
18 take 18 months, and there was a provision that that could be
19 extended.

20 The next slide, please, Nick.

21 As you might guess, most of the comments were
22 related to extending the time period.

23 First of all, there were a lot of comments on
24 extending the time period for inactivity prior to
25 notification.

1 In reviewing the comment letters, there didn't
2 seem to be any strong justification for not proceeding with
3 the two-year cutoff.

4 In other words, if -- many of the comments were
5 related to, "If we have a building that we haven't used for
6 two years, you know, our business might be slack, we may
7 hav more work and we wouldn't know it," it really seems
8 like a two-year time period is a long enough time period
9 that most licensees would be able to make a judgment.

10 There is a provision to request a delay if there
11 are some extenuating circumstances and the licensee knows
12 what they are. So there is a provision if there is some
13 unusual circumstance that would prompt them to know that
14 this is truly a temporary condition and that in a few months
15 they would be using the facility again.

16 Again, there were more -- this was a lot of
17 comments on needing more time to submit the plan. Again,
18 none of them really produced a strong basis. It seems like
19 a one-year time period to develop a decommissioning plan was
20 perfectly adequate.

21 A lot of these comments were also tied in with the
22 issue about the decommissioning criteria, and I'll talk
23 about that last.

24 And then there were a lot of comments, in fact
25 almost all commentators commented on the need to extend the

1 time period to complete decommissioning and many of them had
2 some very good justification on why they felt they would
3 need additional time.

4 We decided to put into the final rule the 24-
5 month period instead of 18 months to complete
6 decommissioning.

7 It seemed that it might actually lessen the
8 staff's burden on handling exemption requests because of the
9 number of commentors who indicated that that's exactly what
10 they would need to do and that there was not a strong basis
11 to go with 18 months, so we felt that it was reasonable to
12 accommodate that request and move the completing date to be
13 within 24 months.

14 Now, as far as the delay for the decommissioning
15 criteria, as I said initially, we did decide, although there
16 were a number of comments related to timeliness that also
17 involved various aspects of decommissioning and some of them
18 were very good, for instance a comment about you should
19 include a QA plan, that there's a lot of things associated
20 with decommissioning that fall into that area.

21 And some of these are very good comments, but we
22 decided that we would hold them until the actual criteria
23 are established and just stick with the timing, not any of
24 these other issues.

25 We do not feel at this time that the criteria will

1 affect the time period for decommissioning. We feel that
2 these time periods are long. There's plenty of time for
3 carrying out decommissioning now by extending it to two
4 years. A year's time to submit the plan should not be
5 affected by the criteria that are established.

6 So we felt that we were justified to move forward
7 with finalizing the rule. In fact, many people on the staff
8 felt that it was really imperative in order to get some
9 control on some of these difficult sites by getting the rule
10 in place, so we have proceeded to finalize the rule.

11 And the last slide.

12 The schedule right now is that we should have it
13 to the Commission by early May. It's been going through the
14 final concurrence process.

15 We are still waiting on some of the comments to
16 come in. Once we have received them and addressed those
17 comments, then we should be able to forward it to the
18 Commission and hopefully meet the target of early May.

19 I put down a July date for publication, which is
20 possible. And a lot of that, again, will depend on whether
21 we are able to stick with our schedule.

22 And we will then plan to make this a rule
23 effective immediately in the normal 30 days after
24 publication.

25 Any questions. Yes, Steve?

1 MR. COLLINS: Steve Collins from Illinois.

2 What criteria would you use for judging the
3 reasons for delay, which may be primarily financial or
4 business forecast basis as opposed to any possible health
5 and safety basis.

6 MS. TROTTIER: You mean the delay to complete
7 decommissioning or the delay to start?

8 MR. COLLINS: Yes. You basically said the rule
9 allows postponement of either one of those start dates.
10 What you alluded to were reasons that were not health and
11 safety based, so what kind of criteria are you going to use,
12 because I'm assuming that this rule may have some level of
13 compatibility which makes us put it in place, and we can't
14 put it in place without providing the criteria in or with
15 the rule on how that judgment will be made? Our statutes
16 don't allow us to do that. And I'll say that as much for
17 the other government agencies' that are here benefit as
18 yours.

19 MR. TROITTER: I guess I'm trying to think of what
20 the criteria -- do we have cases now? Maybe Tim can answer
21 the question.

22 MR. JOHNSON: Well, maybe I can help answer that.
23 Right now the rule doesn't have specific criteria for how
24 you would make that judgment.

25 I think what you're going to find is you're going

1 to find a wide range of possible reasons why a company might
2 want to delay.

3 Some are going to be financial. Some are going to
4 be market-related. Some are going to be health and safety-
5 related. Some are going to be related to the fact that
6 maybe they can't get rid of the wastes.

7 Maybe they have some other interactions regarding
8 hazardous chemicals or whatever, but I think the decision
9 was made not to try to be prescriptive here, but to allow
10 the licensee to present his case, and we would evaluate it
11 based on its reasonableness.

12 MR. BAILEY: Ed Bailey from California.

13 That was -- you mentioned one of the reasons that
14 you might delay and that was waste sites not being
15 available.

16 And I think it's ironic or whatever that you're
17 going to publish the rule the same month that half the
18 nation is cut off to waste disposal.

19 My point is that I think that, when we look at
20 this, there will be some states that this decommissioning
21 type activities will require in essence what you call NEPA,
22 what we call SEQA review to occur, which may go on for
23 years.

24 And so having a two-year period for
25 decommissioning I think is not always realistic at all.

1 And you may not know when you can start it.

2 MS. TROITTER: But the two years would begin once
3 you had plan approval. Now, if there were a NEPA process
4 going on, you wouldn't have plan approval, correct?

5 MR. BAILEY: No, you would not.

6 I thought it was two years from the notification.

7 MR. JOHNSON: It's two years from the time you get
8 your decommissioning plan approved. The goal would be to
9 have remediation complete within that two-year period.

10 Now, what we've found in a lot of SDMP cases is
11 that for other reasons, say state interactions, maybe
12 there's hazardous chemicals there, maybe there's mixed waste
13 and so on, that there probably are legitimate reasons for
14 extending that, and we would evaluate those based on what
15 the situation was.

16 MR. BAILEY: And this not apply to reactors or
17 fuel pads or anything like that?

18 MR. JOHNSON: It applies to 30, 40, 70 and 72
19 licenses. It does not apply to Part 50 licenses.

20 MR. BANGART: Diane?

21 MS. TEFFT: Yeah, Diane Tefft here.

22 I was just curious. Maybe you answered it with
23 how the time period for review of the submittal of the
24 notification for intent or the request for a delay.

25 I mean, it's going to take a period of time to

1 review that. Is that filtered in, for the state or the NRC
2 to review what has been submitted?

3 MS. TROITTER: I think the way the rule was
4 proposed, the 12-month clock starts after the 60-day
5 notification, not after that.

6 MS. TEFFT: Not after review of the 60-day notice.

7 MS. TROITTER: No, it's just a notification.

8 MS. TEFFT: So NRC or the state would be under the
9 gun to -- to drop everything essentially and review what has
10 been submitted.

11 MS. TROITTER: Well, it's just a notification.

12 MS. TEFFT: All right. Or the requests or even
13 the plan.

14 MR. AUSTIN: In any event, based on this request
15 for a delay, if they use the basis as government delay and
16 we would give that very serious consideration.

17 If we used up all of their time in the review,
18 that's a legitimate basis for extending the time period.

19 MR. BANGART: Was there a question over here?
20 Alice?

21 MS. ROGERS: I'm Alice Rogers from the State of
22 Texas.

23 Perhaps you said this and I missed it, but I was
24 curious to know where the submittal of the site
25 characterization plan and the approval that Mr. Johnson

1 urged about three presentations back falls into this time
2 frame.

3 MR. JOHNSON: Well, the site characterization
4 review and approval would fall into the two-year period for
5 accomplishing the remediation.

6 That would include, if there was a need to review
7 a characterization plan, it would be factored in there.

8 If the site decommissioning was a very complex
9 case with perhaps, you know, a large amount of soil or
10 groundwater contamination, I think that if the licensee
11 proposed an extended schedule because of that, we would
12 probably accept that and extend the date, the timeframe from
13 beyond the two years.

14 MR. FAUVER: Tim, do you recall the proposed rule
15 also requires the submittal of a characterization and
16 characterization data with the decommissioning plan, and
17 that was added so it's a valid question as to when the
18 characterization would be performed.

19 My assumption in reviewing the rule is that it
20 would be performed during the 12-month period of preparation
21 in the decommissioning plan.

22 MR. VOLPE: John Volpe from Kentucky.

23 I don't see how you could submit a decommissioning
24 plan without the site characterization. It doesn't make any
25 sense to me.

1 MR. JOHNSON: As I said --

2 MR. VOLPE: I mean, first of all, you do it --
3 you'd super when you do an RI. Then you do your feasibility
4 study or you could do it concurrently, but you still have to
5 do it before you come up with your remedial alternative or
6 your, as you call it, your decommissioning plan. It just
7 doesn't make any sense to me, and I think that's what Diane
8 is trying to say.

9 MR. JOHNSON: Right, Dave is correct. It would be
10 done in that period for the generation of the
11 decommissioning plan, which is a 12-month period.

12 And if there was a need to extend that date
13 because of the complexity and it was a reasonable request,
14 we would allow that.

15 MR. VOLPE: That seems like a very short period of
16 time to me. Some of the sites -- I mean, a couple of the
17 sites that I've worked on have gone on for years.

18 MR. JOHNSON: Well, I think if you look at -- we
19 terminate probably about 300 licenses a year. Most of them
20 are very simple cases. Not all of them have the complexity
21 of what's in an SDMP.

22 And I think the SDMP sites are probably the
23 exceptions rather than the rule, so for most cases, these
24 time periods are probably going to be more than adequate.

25 But I agree with you, for cases of the complexity

1 of the SDMP level, the timeframes would have to be extended.
2 I agree with that.

3 MR. BANGART: Okay. Let's move on to surveys.
4 Dave?

5 MR. VOLPE: Is he implying that you would have to
6 submit a decommissioning plan for a simple license?

7 MR. JOHNSON: No, what I'm -- the way our
8 regulations -- the termination regulations are involved is
9 that for the cases where non-routine activities would need
10 to take place for decommissioning.

11 Things like, in a normal operation, people
12 wouldn't go into a hot cell or have access to it, but during
13 decommissioning, you would.

14 Because the activities involved in decommissioning
15 involve things that weren't reviewed during the operating
16 license reviews, that would be the case, the type of cases
17 where a decommissioning plan would be required.

18 But our regulations do not require proposed
19 decommissioning plans to be submitted for every termination,
20 only for those cases where decommissioning involves
21 activities that would not be performed during normal
22 operations and haven't been reviewed.

23 MR. BANGART: Okay. Thanks, Cheryl. Dave Fauver
24 is our survey expert. He deals with things like statistical
25 analysis of data and how to factor in hot spots.

1 And I've seen him up looking at the Shoreham plant
2 and trying to design a confirmatory survey and review the
3 licensee's termination survey plan.

4 He also is a member of the Decommissioning
5 Regulatory Issues Branch. Dave.

6 MR. FAUVER: What I want to do this afternoon is
7 just briefly give an overview of the decommissioning or the
8 termination survey approach that we take.

9 I'm not going to get into a lot of detail on grid
10 sizes or statistical analysis or that type of thing.

11 I think it was mentioned that on May 19th or
12 perhaps another date to be set if there's enough interest
13 today, if some of the people here would like to attend,
14 there is going to be a workshop on a detailed explanations
15 of the survey approach.

16 And it would be a technical, very technical
17 workshop on our approaches, our experiences and all the
18 statistics, grid sizes, based on 5849 predominantly, but
19 branching off from there considerably I would think.

20 What I'm really going to just go over are briefly
21 the regulations which essentially require a termination
22 survey plan and a termination survey report.

23 I'm going to talk a little bit about what the
24 components of those -- or the plan and report basically are.
25 I'm going to talk a little bit about guidance, which is

1 NUREG 5849 -- it's been mentioned several times today -- and
2 a little bit about the confirmatory survey.

3 The nomenclature that we use typically at NRC, the
4 termination survey sometimes is called the final survey.
5 That's done by the licensee.

6 The confirmatory survey is a quality control type
7 survey that's done by the NRC contractor, or, in some cases,
8 the NRC inspectors, depending on the size of the job.

9 Basically regulations require a description of the
10 planned final radiation survey. You will find that in the
11 requirements for the decommissioning plans. You will be
12 required to submit the plan for the radiation survey.

13 In cases where a decommissioning plan is not
14 required, the regulations simply require that the data and
15 the oral report be submitted.

16 Those are typically such small cases and limited
17 contamination that the review of the plan is probably not
18 required. It wouldn't add significantly to the results.

19 The second regulation basically states that you
20 must submit documentation that the facility meets the
21 unrestricted use criteria. Typically that's the survey
22 report.

23 And one could imagine that there would be some
24 type of other documentation such as processed knowledge, et
25 cetera, but I haven't seen it yet, and I don't think it

1 would ever happen, especially on some of the large sits
2 discussed today.

3 The termination survey plan, basically a lot of
4 this is common sense. You should describe the potential
5 contaminants, the release guidelines you intend to use and
6 this type of thing.

7 Currently, we find many instances where the
8 licensees don't necessarily what the guidelines are and it's
9 a good point to clear it up.

10 I want to mention that the review of the plan up
11 front for the survey plan is very critical. I think that 75
12 percent of the effort should go into the review of the plan,
13 and the 25 into the review of the report.

14 You can get ten people in a room, and you're going
15 to have ten different ideas on how to design a survey plan.

16 You need to understand what the goals of the plan
17 are and have that all agreed to up front so that everyone
18 understands what the design is going to be and et cetera. I
19 find that that really eliminates problems on the back end.

20 What happens is the licensee will stage all their
21 survey people, they're performing the survey and submit a
22 report, and it's after the fact, and then it becomes very
23 difficult to go in and redesign the survey and try to fill
24 in the gaps and this type of thing.

25 So it's very important to spend the majority of the time up

1 front.

2 Okay. The plan also includes instrumentation and
3 background, and it should basically say what instruments
4 you're going to use. Hopefully, it will include the type of
5 instrument and not just an instrument number.

6 How are you going to determine background? That,
7 believe it or not, and many of you have dealt with this,
8 it's a difficult question. Do you hold the instrument up in
9 an open field? Do you try to find a comparable building
10 that's not affected by the contamination, et cetera? What
11 kind of statistics do you use to come up with an average
12 value?

13 You need to discuss the MDA for your
14 instrumentation and the calculation you use to determine MDA
15 should also be included.

16 Quality assurance, it's a big part of the plan.
17 The confirmatory survey is nothing but quality assurance. I
18 believe that the more thorough the licensee's quality
19 assurance plan the less resources needed to be expended on
20 your confirmatory survey.

21 It's all a quality assurance effort. And so if
22 they're going to take some duplicate samples and they're
23 going to have a QA come in and audit or whatever the case
24 may be, it will save resources on the end.

25 Of course, you have to include a sampling plan,

1 grid sizes, how they're going to break their facility up
2 into different contamination potentials and this type of
3 thing.

4 A very important point is the data reduction and
5 statistics. That should be clearly stated. What kind of
6 confidence level are you going to use, how you're going to
7 perform the calculations, and the method you're going to use
8 to reduce the data.

9 Also, it's -- I didn't add this, but it's nice if
10 they would discuss the format of the report, the detail of
11 the report, whether all of the individual sample results or
12 summary results would be submitted.

13 Of course, it is a new record, and the final
14 record of the decommissioning action, and it's the final
15 documentation.

16 The survey plan finally should discuss what
17 decisions are going to be made to determine the unrestricted
18 use or the need for additional remediation.

19 We have in the past run into some problems with
20 this where the licensees were using the standard clean-as-
21 you-go format, which is you'll initiate the termination
22 survey, you'll be on your merry way, you'll find a hot spot
23 and clean it up and re-sample; you find another hot spot
24 down the road, you clean it up and re-sample.

25 What we have found and what in actuality happens

1 is that you end up with a view or a representation of the
2 site which is not actually representative of the site
3 conditions.

4 The report, for example, will show that every
5 location was less than the limit, that there were no hot
6 spots identified.

7 In actuality, when they went and performed their
8 survey, they found several hot spots and they cleaned them
9 up as they went.

10 Well, when our confirmatory survey would be
11 subsequently performed, you would find approximately the
12 same number of hot spots as the licensee found during their
13 survey, and then you have an inconsistency, in fact, because
14 the licensee would submit all data less than the guideline
15 and then the confirmatory survey shows data, a few hot
16 spots.

17 Even though the hot spots may actually be
18 acceptable from an average perspective, it casts a shadow of
19 doubt on a licensee's data in general.

20 And the purpose of the confirmatory survey is
21 simply to provide confidence in the results and having a
22 disparity doesn't provide that confidence.

23 So you need to, in the plan, the preparer of the
24 plan should really evaluate how the decisions are going to
25 be made, whether to remediate additional areas based on the

1 final survey or not and how you're going to record the data
2 and how you're going to remediate.

3 In 5849, you're not going to find much of a
4 discussion of that. That's something we've learned, you
5 know, the hard way, just from experience. Through some
6 forum, some mechanism, we need to come out and clarify that,
7 maybe some guidance document. I'm not sure how that would
8 happen.

9 But it's very interesting that it seems so simple
10 to just go through and perform the documented 5849 protocol,
11 but the method and the way that you interpret that data is
12 critical on whether you're going to perform additional
13 remediation or not.

14 So after you approve the plan, basically your work
15 is done. If you approve it up front, then all you have to
16 do is confirm that they actually did the measurements they
17 said they were going to make, that the measurements in fact
18 were accurate and precise and that the data was properly
19 reduced and used.

20 In your survey report, as I mentioned, this is the
21 final documentation of the action. And it's difficult
22 sometimes to impress on the licensees. I'm not sure why
23 they are so -- or there appears to be in general a
24 resistance to strong documentation.

25 I perceive it as people get the idea that, well,

1 everybody understands what's going on with this site, and,
2 you know, you don't necessarily -- we're just going to
3 submit this report for NRC or whoever the licensing body is
4 and that everybody understands what went on at this site.

5 But the fact is that somebody's going to open up
6 that report five, ten years later, and they're going to look
7 at it, and there's going to need to be an objectively, self-
8 supporting document in place or there's going to be
9 questions and the site will be reopened.

10 I personally reviewed several of these documents,
11 and when you look at an old survey report and it's not
12 convincing and somebody asks you, "Are you convinced?" you
13 have to objectively say no, you're not convinced. So it's
14 just important to completely document any report.

15 You need to talk about the facility condition, a
16 little bit of background in the report; talk about what you
17 did in your final survey, what activities you performed, a
18 little bit about procedures possibly; a detailed description
19 of survey results.

20 It's debatable whether every sample point needs to
21 be submitted or not, but I guess the more you submit, the
22 better chance you have of not being questioned in the
23 future.

24 You should identify in the final report where you
25 found contamination above the guideline, what you did about

1 it, what kind of averaging you did, what kind of
2 investigations were performed, whether you remediated,
3 didn't remediate, what kind of additional measurements were
4 done.

5 Again, investigations, that should be part of the
6 termination survey report. They shouldn't just go through,
7 make the measurements and remediate and submit only the
8 final results because you will be surprised when it comes to
9 the confirmatory survey if they just submit the post-
10 remediation results if they remediate as they go. And it's
11 real important to clarify these things up front in your
12 plan.

13 The last thing you do in the report obviously is
14 make a clear demonstration that you met the unrestricted use
15 criteria by clear statistical analysis that's easy to read
16 and understand.

17 Survey guidance, 5849 has been mentioned a number
18 of times. It is a document that we're currently using.
19 It's quite a prescriptive document.

20 I think it's easy to use, and I haven't heard a
21 lot of complaints about the detail required in the plan and
22 the grid sizes and this type of thing. I think it's worked
23 quite well for us.

24 And as I say, you come to the workshop in May and
25 you're going to know more about it than you ever wanted to.

1 5849 superseded 2082, NUREG 2082. 2082 is a good
2 document, but it -- and it's a good primer for surveys. And
3 I recommend anyone involved in surveys to get the document
4 and read it. It has a lot of good statistical information
5 and background information.

6 But it doesn't -- you don't end up with a good
7 idea of how to design your plan. It gives a lot of leeway
8 on plan design that we found causes some problems.

9 I just want to talk a little bit about the
10 confirmatory survey process. Basically -- this is not in
11 your handout, by the way. I added this yesterday.

12 Confirmatory surveys are quality control. And as
13 I mentioned, they are intended to show that the licensee's
14 data is correct.

15 Confirmatory surveys are not meant to add
16 additional data. You should not approve -- we don't approve
17 of the plan if the plan is not completely, you know, self-
18 sufficient and provides all the information that we need to
19 support the unrestricted use of this site.

20 The confirmatory -- you shouldn't -- what has
21 happened in the past and I think should be avoided at all
22 costs is to say, well, we're missing a little bit of data,
23 and we're going to take the confirmatory survey and
24 hopefully fill in the gaps. That really should be avoided
25 because that's not the purpose of the survey.

1 There are two goals. There's a data accurate and
2 precise -- that's an obvious function -- and also, Is it
3 representative?

4 In other words, the confirmatory group is going to
5 go out and perform some brand of measurements on locations
6 other than the locations that the licensee measured and
7 they're going to -- what we're working on now is an actual
8 statistical comparison of the confirmatory survey data and
9 the licensee's data to see that the two distributions are
10 not statistically different as opposed to a subjective
11 review of the data.

12 And I think that's going to allow us to use less
13 resources on the confirmatory survey and actually get a
14 better decision point out of it.

15 We've been using about 10 percent of the
16 licensee's sampling frequency in the confirmatory survey. I
17 hope that we can reduce that somewhat to 5 percent.
18 Some of the bigger jobs, we might even go down to 1 percent
19 on the very large jobs.

20 Again, the confirmatory survey is just to simply
21 verify licensee's results. A licensee is the -- their
22 function is to demonstrate unrestricted use, not the
23 confirmatory survey, so you shouldn't use the confirmatory
24 survey for additional data, simply QC.

25 That's all I have.

1 MR. BANGART: No questions? I think it's time for
2 a break then. We'll take 15 minutes.

3 [Recess.]

4 MR. JOHNSON: The next discussion here is going to
5 deal with financial assurance. And there are some handouts
6 under, I believe, it's Tab J in your notebooks.

7 What I'd like to discuss today is a couple of
8 areas that surfaced because of the SDMP sites. And they
9 identified a need to clarify some of our regulations dealing
10 with financial assurance.

11 And I think most of you realize that in 1988, NRC
12 promulgated a series of decommissioning financial assurance
13 requirements.

14 And some of you have been involved in some of
15 these discussions. Previously we've talked about this area
16 at some of the previous all Agreement State meetings.

17 And last August, we held a financial assurance
18 workshop in Houston, which some of you attended. This
19 workshop was oriented toward the reviewer level person in
20 the Agreement State programs.

21 But what I would like to talk about is some of the
22 clarifications to regulations that we have in process now
23 and try to explain to you the implications in terms of the
24 site decommissioning management plan.

25 As it turns out, we have some licensees that have

1 large unfunded decommissioning costs that aren't reflected
2 in their financial assurance instrument even though they
3 specifically meet all the financial assurance requirements.

4 And in order to try to explain these, I guess I'd
5 like to provide a little bit of background on what I'm
6 talking about so that you refresh your memory on some of
7 these requirements.

8 But I think you realize that our financial
9 assurance requirements for decommissioning for materials
10 licensees are basically broken down into three categories.

11 We have one category that would be for licensees
12 whose possession limits and type of material that they have
13 is generally of low activity. And for these licensees we
14 don't require any financial assurance instruments to be
15 provided.

16 There's also a second category where modest
17 possession limits are in place. And for these licensees, we
18 allow them to use the fault amounts that are specified in
19 the regulations.

20 And the third category would be for the licensees
21 that have the largest amounts of activity in their
22 possession limits. And they fall into a category that
23 requires what we call a decommissioning funding plan.

24 And a decommissioning funding plan is a cost
25 estimate based on a site specific analysis with an

1 instrument, financial assurance instrument, a bond or a
2 letter of credit or a trust fund or something like that, to
3 match the value of that cost estimate.

4 And when we did the regulation, we realized that
5 we had a fairly large number of licensees that would fall
6 into this decommissioning funding plan category.

7 And we realized that we would have a hard job
8 trying to review all of those at once if they came in all at
9 once.

10 So what we allowed this group of licensees to do
11 was that, at the time of the date of implementation of the
12 rule, which was July 27th, 1990, we allowed these licensees
13 to provide \$750,000 in their instrument.

14 And we would require that at their next renewal
15 they provide the decommissioning funding plan with their
16 cost estimate and the associated instrument to match that
17 value.

18 But what we didn't expect was there was another
19 category of licensees that didn't really quite fit that.
20 These were licensees that were in timely renewal at the time
21 of the implementation date in the rule.

22 And our Office of General Counsel, they're
23 interpretation was that these licensees would need to
24 provide the decommissioning funding plan before we approved
25 their renewals.

1 And that seemed pretty simple. But as it turned
2 out, we've had one licensee who didn't agree with that
3 interpretation, and we now have that case in litigation
4 along with some other decommissioning issues.

5 But in order to resolve that matter and to be
6 specific as to how we handle these licensees and timely
7 renewal, we are in the process of developing some amendments
8 to the regs that would require, specifically require
9 licensees that were in timely renewal at the time of
10 implementation to provide decommissioning funding plans so
11 that we could approve their renewal package.

12 The second important issue involves some SDMP
13 sites that, as it turns out, have very large unfunded
14 decommissioning costs without a financial assurance
15 instrument to match it.

16 And they do have the \$750,000 instrument, but it
17 looks like they will probably not get to the next renewal.

18 In other words, they decided to decommission
19 between the time of the implementation date and their
20 renewal period. And an example of that case is the Sequoia
21 Fuels case in Oklahoma.

22 We also have a case where the licensee, he has a
23 \$750,000 instrument but in the meantime, he's petitioned for
24 a reorganization under Chapter 11 of the Bankruptcy Code.

25 So, you know, we're kind of caught in the middle

1 of this interim time period that we allowed licensees to be
2 in before coming in with their full decommissioning funding
3 plan.

4 And the way we're going to try to resolve that
5 problem is through the proposed decommissioning plan that we
6 talked a little about earlier.

7 The proposed decommissioning plan is different
8 from the decommissioning funding plan. The proposed
9 decommissioning plan is a document that certain licensees
10 submit at the time of termination.

11 And the regulation requires that the proposed
12 decommissioning plan have in it tell us how they're going to
13 do the remediation, tell us what radiological controls are
14 going to be in place during remediation, and it also
15 requires the cost estimate to be provided in this document.

16 But what the regulations don't require is that a
17 financial assurance instrument be upgraded to match that
18 cost estimate in the decommissioning plan.

19 And our resolution to this problem would be to
20 amend our regulations so that, when these licensees provide
21 their decommissioning plan with the cost estimate that's in
22 it, that they also be required to upgrade their financial
23 assurance instrument to match the amount that's in their
24 decommissioning plan.

25 We would also require that the financial

1 instruments be effective until the license is finally
2 terminated. And we would allow licensees to decrease the
3 value of their financial instrument to reflect any
4 decommissioning that takes place.

5 In other words, if they complete half their
6 decommissioning, they can reduce the value of their
7 instrument to whatever it costs to finish the job.

8 The proposed schedule right now is to issue a
9 proposed rule in the Federal Register in the May, 1994,
10 timeframe.

11 Now, I realize that this discussion is, you know
12 -- isn't very straightforward, and it does involve some
13 legal issues that aren't very straightforward, but I hope
14 you realize that perhaps one of the values of the SDMP is
15 that it does flesh out these kinds of problems so that we
16 can identify it, and the SDMP also gives us the resources to
17 address some of these issues that come up.

18 Are there any questions? Yes?

19 MR. BAILEY: Doing a cost estimate these days like
20 between now and June 30th, if \$2500 per 55-gallon drum is an
21 appropriate cost to use for this holdover waste, what figure
22 do I use after June 30th when there's no place of it to go
23 to?

24 MR. JOHNSON: The cost estimates for burial that
25 we're allowing now are the current costs that are published

1 in the rate sheets for Barnwell and Hanford, for example.

2 And those estimates would be upgraded, depending
3 on when these new sites come on line and what they charge,
4 so right now we're using the current day cost estimate with
5 the anticipation that when the appropriate time comes that
6 will be cleared up.

7 MR. BANGART: Any other questions?

8 MS. FELICE: I have one. Julie Felice from Utah.

9 I was just wondering is this also going to allow
10 for a periodic review of the costs to update the costs?

11 MR. JOHNSON: Yes, yes. If you're in a
12 decommissioning funding plan category, what is required is
13 you would provide an updated cost estimate at each renewal.
14 And from just about all our materials licensees, that's on a
15 five-year period, so at each renewal they would come in with
16 the updated estimate.

17 MR. COLLINS: Some states have an annual update
18 allowed by the regulations, and the regulatory agency can
19 require it if they want to, an annual update.

20 MR. JOHNSON: Are there any other questions?

21 [No response.]

22 MR. AUSTIN: We now turn to 20.304 burials, and I
23 will be discussing a bit about the issue of finality in
24 decommissioning activity.

25 This presentation may sound inconsistent, but we

1 think it is really consistent. But we should be doing -- if
2 I could have the first chart.

3 Burials of certain quantities of radioactive waste
4 at a licensee's site without prior AEC approval were allowed
5 through the adoption of an old regulation, 20.304 in 1959.

6 That regulation was repealed in 1981 because it
7 was felt that it was inappropriate to authorize generically
8 burials of radioactive waste without regard to the location,
9 the concentration or the packaging.

10 Now, licensees may bury waste at their site or, as
11 a factual matter, at any site with prior NRC approval
12 through the regulations of 20.2002, the old 20.302 burials.

13 In 1988, the Commission adopted the
14 Decommissioning Rule, and in the Statement of Considerations
15 it said that, "The Agency will take a hard look at the
16 extent to which the site has been previously used to dispose
17 of low-level radioactive waste by land burial and decide
18 what remedial measures, including removal of such soil
19 offsite as appropriate, before the site can be released for
20 unrestricted use and the license terminated," close quote.

21 In a way, the Agency took back what it had said
22 when it repealed 20.304. At that time in 1981, it said it
23 would not revisit, but in the Decommissioning Rule,
24 considerations have changed and the Agency said it would, in
25 fact, review these 20.304 burials.

1 The General Counsel tells us -- the Office of
2 General Counsel tells us that we retain jurisdiction over
3 20.304 burials. And there are a handful of sites on the
4 SDMP there solely because of 20.304 burials.

5 Those sites are among our more difficult ones
6 because the licensees are not leaping forward volunteering
7 to exhume this material after 20 or 30 years, but we are
8 performing exposure assessments.

9 We're looking at the groundwater contamination
10 potential, the human intrusion potential. And we are in a
11 continuing dialogue with these former licensees as to what
12 should be done.

13 On the next chart, we will be talking about the
14 finality issue. Many licensees in the past did not want to
15 decommission their sites or revisit old burials at that
16 point in time because of the uncertainty as to whether, if
17 they did do it and revisit the site one more time, would
18 they be asked at a later date, with the potential for more
19 stringent decommissioning criteria, to revisit it one more
20 time.

21 The Commission resolved that matter in the action
22 plan by stating that, if a licensee decommissions its site
23 in accordance with an NRC-approved decommissioning plan, the
24 Agency would commit to that licensee or responsible party
25 that they have no further obligations to NRC if they

1 remediated the site in full accordance with the approved
2 plan and that if they did that, we would not back-fit any
3 new NRC criteria for decommissioning.

4 The exceptions to this, which I think are very
5 logical and defensible, is that if later we found additional
6 contamination that presented a significant threat to the
7 public health and safety, we would revisit the site, or that
8 if we later learned that the licensee or responsible party
9 did not in fact carry out its decommissioning plan by the
10 Agency.

11 And the third exception would be if false
12 information was submitted that might have altered the
13 Agency's decision to authorize unrestricted use.

14 In our letters termination licenses, we do state
15 the language in the action plan. We do not say the NRC
16 staff, we say the Commission would not do this.
17 And we think that's appropriate because the Commission has
18 approved this policy.

19 The industry has still expressed some concerns
20 about the finality. The response to them is that in the
21 past it was a staff person that made the decision to
22 terminate a license, in some cases with minimal information
23 on surveys.

24 What's different today is that it is the
25 Commission that has approved this policy and that in my

1 almost 22 years' experience with AEC, NRC and working for a
2 number of commissioners over that timeframe, one commission
3 tends not to reverse a previous commission; that if you look
4 at the new decisions coming out year after year, it
5 generally involves a shift, not a reversal.

6 And I think that we are creating a record and
7 writing letters to licensees that would give them a very
8 defensible basis for not revisiting it.

9 And there happens to be another court case. I
10 forget what -- Georgetown versus somebody, I believe, in
11 which some new regulation was attempted to be back-fitted.

12 And it went to the appeals court. And the appeals
13 court noted that an agency may not retroactively enforce a
14 requirement unless Congress specifically authorizes them to
15 do that.

16 The example would be if the IRS were to attempt to
17 say that we want to change the tax rates for 1985, and you
18 are hereby billed some additional money for taxes in 1985,
19 they're not authorized to do that.

20 Super Fund legislation specifically authorized EPA
21 to back-fit the process and procedures for Super Fund sites.

22 So I think the Agency is firmly committed to this
23 concept of finality and that, I think, removed a significant
24 barrier to timely remediation.

25 On the last chart, some of the issues, we do

1 treat, in decommissioning, the site as a whole. If there is
2 a 20.304 or a 20.302 burial at the site, we consider that
3 along with any other additional contamination at the site
4 that would be proposed to be left behind.

5 We treat all of those in our dose assessments.
6 It's as if the licensees had a bank of millirem per year to
7 draw on, they choose to use it up in burials, and that would
8 mean that perhaps the surface would need to be remediated
9 more than if there were not a burial.

10 The Energy Policy Act of 1992 called for -- or
11 allowed that the states have authority to regulate disposal
12 for offsite incineration of low-level radioactive waste if
13 NRC exempts such waste from regulation after the date of the
14 act.

15 The question the is, Does that act, the Energy
16 Policy Act, authorize states to regulate 20.302 and 20.304
17 burials?

18 And it's our opinion that those types of burials
19 are licensing actions, not exemption actions, and therefore
20 that policy act does not apply.

21 Are there any questions on burials and how we
22 treat them? Yes, Ed?

23 MR. BAILEY: If you have a DOE facility on the
24 same site as the licensee's site, do you take into account
25 the DOE activities in the decommissioning and the impact of

1 DOE burning or burials?

2 MR. AUSTIN: Very likely. We do have -- Rockwell
3 Sand & Suzanna happens to be a case in point in Canoga Park.

4 The Part 20 regulations apply to all sources of
5 radiation, and we would examine the potential for
6 interactions of burials on a DOE reservation on the
7 groundwater and whether that combined with a licensed
8 burial, whether the combined two create a problem in
9 deciding whether to authorize further burial of licensed
10 material.

11 Yes?

12 MR. OWEN: Bob Owen, Ohio.

13 You indicated that 20.302 and 20.304 burials
14 relative to the Energy Policy Act of 1992 that if -- and I
15 don't recall whether you said policy or opinion of the NRC
16 -- but the states do not have the authority to delve into
17 those.

18 MR. AUSTIN: Those licensing actions.

19 MR. OWEN: Right. At what level was that -- in
20 the NRC was that made and --

21 MR. AUSTIN: I hope it said, "It's as our view."

22 MR. OWEN: Oh, that's your view. Well, whose view
23 is it within the NRC?

24 MR. AUSTIN: With consultation with members of the
25 Office of General Counsel. As the regulations always says,

1 Any interpretation of this regulation is not binding unless
2 the General Counsel has spoken. The General Counsel has not
3 spoken, and that's why the proper word should have been
4 "view."

5 MR. OWEN: Oh, okay.

6 MR. AUSTIN: Thank you.

7 MR. BANGART: Thank you, John.

8 Your next presenter is Bob Nelson. Bob has been
9 both in the Low-Level Waste Branch and the Decommissioning
10 and Regulator Issues Branch, and I know that he's had a lot
11 of experience in working with organizations outside of NRC.

12 And he'll be making a presentation now that will
13 summarize the experiences that we've had and some of the
14 lessons learned. Bob.

15 MR. NELSON: Thank you.

16 In short, on the topic of interacting with other
17 organizations or authorities, we have, we do, and we will do
18 so more in the future, I'm sure.

19 I believe we're at Tab L of your book, if you'd
20 like to follow along rather than craning your neck at the
21 overhead.

22 The first slide simply addresses some of the items
23 I'll talk to in my brief presentation. I'll probably spend
24 the majority of my time on the fourth bullet.

25 Next slide, please.

1 The interested parties: We tried to identify on
2 this the principal parties that we typically deal with in a
3 number of different fashions.

4 In the groups area, that would include citizen
5 groups, environmental groups, public interest groups,
6 whereas the public is more intended to identify individuals
7 in the public; other Federal agencies, notably EPA and the
8 DOE; elected officials, both at the national, state and
9 local level; local agencies, state agencies obviously and
10 even employees often have an interest in the outcome of a
11 site decommissioning.

12 In the case of state agencies or local,
13 particularly state agencies, if there is sufficient interest
14 by a state agency, there's a number of ways we would
15 interact with possibly that agency, either through, if there
16 is an environmental impact statement, through a cooperating
17 agency status or another way is through a memorandum of
18 understanding, which we would execute with the state to
19 delineate the responsibilities and authorities of the
20 parties involved.

21 This slide shows our role. And I'll leave you to
22 read that. It's pretty straightforward.

23 We try to a great extent to keep our process very
24 open to all the interested parties. We distribute
25 documentation to all the involved agencies. We solicit

1 their comments, both informally and formally.

2 And we actively solicit where we have an
3 environmental impact NEPA process participation, formal
4 participation as cooperating agencies.

5 We do actively seek EPA and state agency review of
6 important decommissioning documents; for example, site
7 characterization reports and decommissioning plans.

8 When we get comments, we compile them from all the
9 involved agencies, prepare a single, consolidated comment
10 package. And these would be returned to the licensee for
11 resolution.

12 We also encourage other agencies to reciprocate if
13 they are doing some local evaluation of the site that we may
14 not have regulatory authority over.

15 Next slide, please.

16 Some specific examples of our interactions with
17 other agencies, the most notable, of course, is the
18 Environmental Protection Agency. And the next presentation
19 will get into the enhanced participatory rule-making, but
20 they've been a player in this rule-making clearly.

21 We are, in fact, waiting for their formal comments
22 on the rule-making. We have had some discussions with them
23 as to what those comments might be, but they are definitely
24 involved in a major way, in this and other areas.

25 The Clean Air Act, again, is another area where we

1 are significantly involved with EPA, the Federal Guidance on
2 Public Exposure, and the other item on the slide, the
3 Standard Scenarios for Pathways Modeling, are both examples
4 of other involvements, recent involvements.

5 We will also coordinate our individual
6 decommissioning actions with the EPA regions. This is very
7 common where project managers will talk to the EPA regions
8 sometimes weekly or more so if a lot of activity is going on
9 at various sites. We often have conference calls with the
10 various EPA offices.

11 The NRC also informs EPA headquarters, both the
12 Super Fund and radiation programs, and the region about any
13 intent to terminate licenses.

14 John Austin mentioned this morning several times
15 the topic of risk assessment, one area I want to spend just
16 a few moments on.

17 We are currently -- this is currently a major
18 coordination effort with the EPA, and it has been ongoing
19 for some time.

20 This is due to overlapping, implementing and
21 enforcement jurisdictions principally under the Clean Air
22 Act, together with differing statutory mandates and Agency
23 objectives and priorities.

24 And our memorandum of understanding that was
25 signed in March of 1992 established a framework for

1 resolving our joint concerns regarding the regulation of
2 radionuclides in the environment.

3 Specifically one section of this memorandum of
4 understanding addressed the topic risk harmonization in
5 which both agencies agreed, in carrying out the memorandum
6 of understanding, to explore ways to actively harmonize risk
7 goals and to cooperate in developing a mutually agreeable
8 approach to risk assessment methodologies.

9 The agencies have, in fact, used the two-phased
10 approach for generic exploration of risk harmonization. The
11 first approach examines the differing or similar risk
12 assessments, approaches to risk assessment used by the
13 agencies, and the second phase of the analysis looks at
14 various risk management policies.

15 To distinguish between the two, risk assessment in
16 these terms is essentially a scientific process that
17 involves methods, assumptions and other considerations
18 involved in the description and quantification of a
19 potential hazard from a particular activity or situation,
20 whereas a risk management is a judgmental process that leads
21 to regulatory decisions such as selection of risk goals,
22 methods to achieve those goals or selection of regulator
23 preferences.

24 We have jointly examined various program areas.
25 We have compared these programs and focused on health risk

1 assessment approaches and techniques.

2 We did not address engineering risk assessment,
3 which considers the probability and consequences of failure
4 of components and structures.

5 We are currently hopefully nearing the final
6 stages of putting together a risk assessment paper to be
7 presented to the Commission.

8 Our current schedule calls for that to go up to
9 the Commission in early April. This has been a rather
10 protracted project because of the need for interagency
11 review and competing priorities, so it's taken us a little
12 longer than we would have liked to get this to this point.

13 It was currently going through NRC interoffice
14 review, and, assuming that that moves forward smoothly, we
15 hope to have, as I said, the paper up to the Commission
16 sometime in early or mid-April.

17 That concludes my comments about interacting with
18 other authorities. I'll be glad to take your questions.
19 Roland?

20 MR. FLETCHER: Roland Fletcher from the State of
21 Maryland.

22 I'm concerned. I've heard for some time about the
23 coordination and cooperation between EPA and the NRC, and I
24 guess I -- I don't have a sense that there is some
25 negotiating and decision-making going on that can ultimately

1 benefit this process. Could you elaborate, please.

2 MR. AUSTIN: I'll try. There are some -- first of
3 all, there are some very strongly-held positions at the very
4 highest levels of both the Commission and the Agency that
5 have not necessarily been resolved at this point.

6 I'll use as maybe an example implementation of the
7 Clean Air Act, a rescission of Subpart I. We have -- as you
8 know, EPA is withholding rescission of Subpart I
9 for material licensees.

10 We have both, through a series of letters between
11 the chairman and the administrator as well as Mr. Benaro of
12 our office and Sogay of the Office of Radiation and/or Air
13 have exchanged letters concerning a participatory process to
14 examine the issues and to hopefully come to some closure on
15 that particular issue.

16 There seems to be some agreement between the two
17 agencies on that process, and we're proceeding to implement
18 a participatory process hopefully which would end with EPA's
19 agreement to rescind Subpart I.

20 But there are some -- in various areas, there are
21 some underlying fundamental differences. The purpose of
22 this risk harmonization paper is to identify areas of
23 commonality, areas of difference.

24 There is a -- there will be a recommendation and
25 conclusions area, but it will be basically recommendations

1 for further action. So we are making progress, albeit slow.

2 A PARTICIPANT: The Subpart B part of the Clean
3 Air Act regulation is a success story where the agencies are
4 working together --

5 MR. BANGART: Chip, do you want to say anything?

6 MR. CAMERON: I guess I'd just add one other thing
7 on that, Roland. The first step in cooperation is sharing
8 information and sitting down to discuss the issues.

9 And on all of the interactions with EPA, I think
10 that there is good cooperation from that regard. That
11 doesn't always mean we're going to come out with the same
12 conclusion, but at least from that aspect, I think that
13 there is good cooperation, almost too much it seems
14 sometimes.

15 MR. BANGART: Any other questions?

16 [No response.]

17 MR. NELSON: Thank you very much.

18 MR. BANGART: Thank you, Bob.

19 Well, there are three lead people in the NRC that
20 have worked on the enhanced participatory rule-making
21 process, Don Cole from Research, who isn't here, but we're
22 lucky to have the other two players, Chip Cameron from the
23 Office of General Counsel and Mike Weber from MNSS.

24 Chip, I think, is going to take the lead, is that
25 right, on the presentation to describe the status of that

1 rule-making effort.

2 Unfortunately, he came in late, and he didn't hear
3 the questions and discussions earlier, so --

4 MR. CAMERON: You mean fortunately.

5 [Laughter.]

6 MR. CAMERON: Thanks, Dick.

7 I just wanted to reiterate a little bit of what
8 Dick said in his introduction. The development of the
9 enhanced participatory rule on site cleanup standards has
10 been a really strong cooperative effort within the NRC.

11 And we've had a lot of offices participating
12 thoroughly throughout this process, not only the Office of
13 General Counsel but Research, Nuclear Materials, Safeties
14 and Safeguards, Nuclear Reactor Regulation, the Office of
15 State Programs, and also the Office of Public Affairs.

16 And ODC has the lead for developing the
17 participatory aspect of the rule-making and the workshops
18 that I'll talk about later.

19 Research, under the lead of Don Cole, has been
20 working on drafting the proposed rule and the generic
21 environmental impact statement that goes along with this and
22 also the reg guides that are so important for its
23 implementation.

24 And we've all received invaluable technical
25 support from MNSS on this rule-making. And that's a rather

1 long-winded way of saying that Mike Weber is here to answer
2 any questions on the technical aspects of the rule.

3 And I'd also like to thank Mike for preparing some
4 slides on this presentation, which I gather are in your
5 notebooks. And there's a lot more detail in there than I
6 think I'll go into, but we wanted to provide them for your
7 information.

8 As I'm sure you've talked about all day, there are
9 no general standards, NRC standards for site cleanup at this
10 time.

11 It's done on a case-by-case basis using branch
12 technical positions and guidance that have been developed
13 over the last 20 years.

14 And the Commission, with the enhanced
15 participatory rule-making, made a decision that general
16 standards should be developed for predictability, for
17 consistency to ensure that the standards were based on
18 current scientific and technical information, and also to
19 ensure broad public input to the development of the
20 standards.

21 And that's where the enhanced participatory rule-
22 making process came along. We wanted to get early comment
23 and recommendations from a wide spectrum of interests on the
24 rule-making issues, and we also wanted to encourage some
25 active discussion among the diverse interests.

1 There wasn't a consensus process. After we were
2 done with the public input, the staff took all those
3 comments and tried to fashion the best rule that we thought
4 would take into consideration those comments and also our
5 obligations to provide for adequate protection of the public
6 health and safety.

7 At any rate, we held a series of workshops around
8 the country. I know that a lot of people here participated
9 in one or perhaps more of those workshops.

10 And we used something called a "rule-making issues
11 paper," which laid out a number of approaches to how we
12 could do the rule-making.

13 And we looked at those approaches from a number of
14 different perspectives: health, safety and the environment,
15 waste management implications, implications for the existing
16 regulatory framework with the states, with EPA.

17 And we looked at the costs of different ways of
18 doing site cleanup and also whether the technology was
19 available for that.

20 I think the -- from the NRC staff point of view,
21 we think the workshops were a very productive process.

22 And the workshops generated a lot of information
23 that really changed the way that we went
24 about this rule-making. And I think there's a number of
25 places that that's reflected in the rule.

1 Now, we did take all of the information from the
2 workshops, we took the information that's being generated in
3 the development of the draft generic environmental impact
4 statement on this rule, and we developed a draft proposed
5 rule.

6 It's a staff draft. It hasn't been blessed by the
7 Commission yet, but we issued this draft rule for comment in
8 early February of this year. We specifically asked the
9 participants in the workshop and the states for comment on
10 the staff draft.

11 And the reason we did that is we heard a lot of
12 discussion about the general rule-making issues in the
13 workshops, but we thought it would be productive to put a
14 specific proposal in front of people to get some specific
15 comment on that proposal and to reveal any implementation
16 problems that we hadn't considered or hadn't considered
17 thoroughly so that we could get the soundest rule as
18 possible before the Commission.

19 I haven't had a chance to look at all of the
20 comments that came in on the staff draft. I believe the
21 comment period closed March 14th or 10th, somewhere, 11th.

22 And the staff is currently looking at those
23 comments before the rule is sent to the Commission. But a
24 little bit later on I'll just flag some issues that have
25 popped up on the radar, and I'm sure that people here have

1 other concerns that may match those or new ones that you may
2 want to mention.

3 But basically the rule has three major components
4 to it. And I'm going to switch the presentation that Mike
5 has in his slide somewhat.

6 The three major components are provisions related
7 to unrestricted release of the site and termination of the
8 license.

9 The second major component are provisions for
10 restricted termination -- well, restricted release of the
11 site. The license is terminated, but the site is released,
12 not for unrestricted use, but for restricted use under
13 particular conditions.

14 And the third major component is provisions for
15 public participation.

16 In terms of unrestricted release, a site is going
17 to be -- or would be considered acceptable for release for
18 unrestricted use and the license terminated if the total
19 effect of dose equivalent does not exceed millirems per year
20 to the critical group. Now this is the limit for
21 decommissioning established in the rule.

22 There is also a goal for decommissioning in the
23 rule, and that's reduction of residual radioactivity at the
24 site to a level that is indistinguishable from background
25 radioactivity or three millirems for certain radionuclides.

1 The rule requires application of an ALARA process
2 to the 15 millirem limit, and the goal of that ALARA process
3 is the indistinguishable from background level.

4 So that's what happens when you look at the
5 provisions for unrestricted release. And of course, this
6 rule applies to most NRC facilities, not the high-level
7 waste facility, not the low-level waste facility or uranium
8 mill tailings. And it only applies to soils and structures
9 at this point explicitly.

10 Now the second major component of the rule is
11 something that deviates from past Commission policy on
12 decommissioning.

13 And past Commission policy is that all sites to be
14 decommissioned and have the license terminated, they have to
15 be cleaned up for unrestricted use; unrestricted use meaning
16 you can go on the site and do -- anybody can go on the site
17 and do whatever they want there, grow crops, the pigs,
18 carrots and kids phrase, I guess, that came out of one of
19 our workshops.

20 Everybody agreed that the goal of decommissioning
21 should so that you can raise pigs, carrots and kids on the
22 site.

23 The big disagreement came as, What does that mean?
24 What level is associated with being able to do that?

25 But we heard a lot of comment at the workshops,

1 and there's a lot of discussion generally, not only with
2 radioactive materials but Super Fund sites, on having some
3 provisions for restricted use of the site.

4 Now the draft rule would allow the license to be
5 terminated based on restrictions on the future use of the
6 site.

7 Now a licensee, to qualify for a restricted
8 termination, would have to show a couple of things. One,
9 the licensee would have to show that they could not meet the
10 requirements for unrestricted release of the site because
11 it's not technically achievable, it's prohibitively
12 expensive or it would result in excessive environmental or
13 public harm.

14 In other words, if the licensee can show that one
15 of those conditions are met, then the licensee can propose
16 certain types of institutional controls or land use
17 restrictions on the use of the site.

18 If the licensee can demonstrate that those
19 controls on the future use of the site would assure that the
20 total effect of dose equivalent at the site would not exceed
21 15 millirems, then the license could be terminated and the
22 site released for restricted use.

23 The most -- I guess the simplest example is a land
24 use restriction on a site that would only allow the site to
25 be used for industrial purposes in the future so that,

1 because of the type of exposure or extent of exposure at the
2 site, because of those restrictions, that the 15 millirem to
3 the critical group that uses the site would be met.

4 There's one other aspect to this that's on Mike's
5 slides and is one of the issues, I think, that's catching a
6 lot of attention in the comments is the fact that the
7 licensee, even if they can show that 15 millirems can be met
8 with the land use restrictions or institutional controls,
9 the licensee still has to demonstrate that, if those
10 controls failed, that the dose equivalent at the site would
11 not exceed 100 millirems; in other words, the public dose
12 limit in Part 20.

13 The third major aspect of the rule is public
14 participation. And one of the provisions specifically
15 relates to the restricted termination of the license.

16 In cases where a licensee proposes restricted
17 termination, the licensee has to establish what's called a
18 site-specific advisory board.

19 In other words, all the interests in the local
20 community that might be affected by decommissioning compose
21 a board to advise the licensee on the type of land use
22 restrictions that might be placed on the site, whether it
23 would be effective to look at questions of, Is it
24 prohibitively expensive? Is it technically infeasible?

25 And those -- the recommendations of that site-

1 specific advisory board have to be provided to the
2 Commission with the site decommissioning plan.

3 The second aspect of public participation is a
4 broader requirement which requires that when the licensee
5 submits the decommissioning plan for the facility, the
6 Commission will solicit public comments on the
7 decommissioning plan.

8 The rule doesn't specify having a meeting, a
9 public meeting in the vicinity of the site, but that
10 certainly is something that will probably happen with some
11 facilities.

12 Okay. As Bob's presentation demonstrated and as
13 your presence here indicates, we're not operating in a
14 vacuum here. There's other institutional actors involved,
15 one of which is the EPA.

16 We have been working cooperative with the EPA on
17 this rule-making. They have been at all of the workshops.
18 We've been meeting with them on the so-called technical
19 underpinnings for the rule, the material and the draft
20 environmental impact statement, modeling methodologies, and
21 things like that.

22 And they are a cooperating agency in the
23 preparation of the generic environmental impact statement on
24 this rule.

25 Our goal is to try to arrive at consistent

1 standards; in other words, consistency, not necessarily
2 uniformity, because there may be reasons for differences in
3 the rules, the two rules, but consistency and efficient use
4 of Federal resources.

5 The idea here is that if the EPA finds the NRC
6 rule to be sufficient to protect public health and safety,
7 then the rule-making that EPA is working on will exclude NRC
8 and Agreement State licensees from its coverage and will
9 focus only on Federal facilities.

10 And that's the intent that the EPA is working to
11 in the development of their rule. And that's a good
12 illustration of why we might not have to be uniform in all
13 respects because there may be a difference between what's
14 required in terms of the Federal facilities than NRC
15 facilities.

16 But EPA has their own process going on. They are
17 aiming, I think, for a proposed rule in the fall of this
18 year.

19 And they have an advisory committee. It's a
20 subcommittee on site cleanup standards of the National
21 Advisory Committee On Environmental Policy and Technology.
22 And Roland Fletcher sits on that particular committee.

23 The EPA basically had one full meeting of that
24 committee, and they had a conference call last month, I
25 believe. And the next full meeting of the committee is

1 going to be May 16th and 17th in Washington, D.C.

2 But basically I think they're at the stage where
3 they're discussing the major rule-making issues, the EPA
4 issues paper.

5 And all of that is available from EPA. And they
6 also have an 800 number that you can call into.

7 Obviously, the states are an important
8 consideration in terms of implementation of this rule-
9 making.

10 And I think someone told me earlier that Dick
11 Bangart had addressed the relationship between the
12 development of the compatibility policy and this rule, and
13 basically the Commission said don't specifically deal or
14 address compatibility; in this rule-making, we need to
15 establish some general criteria for compatibility and apply
16 those criteria to the compatibility rule-making and see
17 where we end up with it.

18 And that's still the game plan at this point,
19 although we are getting into a funny sort of a timing
20 situation. But that is getting close, I think, to
21 Commission approval.

22 See, we say something like that but you have to
23 watch the body language and things like that to really get
24 what the true picture is, but we may need to discuss this
25 particular aspect of the site cleanup rule-making. In other

1 words compatibility with the Commission in terms of what we
2 have in the draft proposed rule.

3 And basically the schedule is the staff is going
4 to send the draft proposed rule, the draft generic
5 environmental impact statement and most -- an important part
6 of this is the regulatory guidance that's being developed on
7 the rule.

8 That guidance deals with how you address the
9 indistinguishable from background issue; survey methodology;
10 measurement verification; all of those items are being
11 developed and I believe that Cheryl from Research is playing
12 a large part in the development of the regulatory guidance.
13 And that all goes to the Commission in probably early May of
14 this year and we hope to have a proposed rule out for
15 comment at the end of June of this year and a final rule in
16 May of 1995.

17 A lot of the issues that have been raised will be
18 addressed by regulatory guidance that I talked about. The
19 ALARA concept in terms of what must be considered -- what is
20 reasonably achievable on this context. The background
21 issue. A lot of commentators think that the goal, the
22 indistinguishable from background three millirem goal is
23 going to become a de facto limit and I think Mike
24 illustrated on one of his slides that the EPA has three
25 basic concerns with the rule.

1 One is that the goal will become a limit; the
2 second one is, is that there should be separate standard for
3 groundwater protection. Right now the standard incorporates
4 all pathways, I believe. And the other aspect is the --
5 what I call the fail-safe analysis, which may be the wrong
6 term to use, but in terms of the restricted release of the
7 site, the licensee demonstrating that if those controls fail
8 it's still under 100 millirems.

9 The EPA believes that that should be 50 millirems.
10 It should be some portion of the 100 millirem. And there's
11 been a lot of comments from industry that 15 millirems as a
12 limit has no technical basis. It's too costly. It's
13 unnecessary. And of course we're getting comments from the
14 citizen group community to the effect that 15 millirems is
15 too high.

16 And so there we are, I guess, and I'd be glad to
17 have Mike answer any of your questions.

18 MR. FLETCHER: Now, what is the plan for revising
19 the draft and then submitting it up the chain for review
20 again; what kind of a timing schedule do we have?

21 MR. CAMERON: Basically the comments have to be
22 evaluated and plugged in as appropriate into any revisions
23 of the rule so that we can submit the draft proposed rule to
24 the Commission in May. So that's a little bit -- five or
25 six weeks away. And you've reminded me of the fact --

1 another thing that Mike had in his slides is that there is a
2 NUREG comment analysis that was done on the workshop
3 comments and also on the written comments that were
4 solicited on the issues paper.

5 But yeah, we're working on a tight time frame and
6 the Office of Research is -- has the lead and is, you know,
7 taking the brunt of trying to analyze this problem.

8 MR. BANGART: Let me just add to that, one of the
9 disadvantages we recognized at the time that the draft
10 criteria went out for early review is that it was not
11 accompanied by the draft generic environmental impact
12 statement.

13 Many of you and I believe many of the commentators
14 are seeking the kind of technical background and basis for
15 the numbers that are in the draft criteria. And a lot of
16 that will be found in that draft generic impact statement.

17 Unfortunately that was not sufficiently prepared
18 for dissemination to the world. There is such a document
19 and it does exist, and in fact we're using that as part of
20 the decision process to come up with the draft criteria.

21 But that will be part of the proposed rule package
22 that goes out after the Commission has reviewed it and it
23 will be something that we'll certainly be looking for your
24 comment on.

25 As you sit back from your regulatory perspectives

1 and contemplate what's all involved in the analysis of such
2 a broad range of license facilities, everything from nuclear
3 laundries to nuclear power reactors to fuel facilities,
4 radiators, sealed source users, everything you could
5 possibly imagine that's using radioactive material for the
6 most part, you can certainly I think have an appreciation
7 for the breadth of the kind of analysis that would be
8 required to support that kind of a rule-making.

9 We have attempted to do that by identifying
10 reference facilities and by looking at specific
11 radionuclides that we have dose projections for under the
12 different scenarios and that we have information on in terms
13 of the cost and the technical achievability of the dose
14 values that are in the draft criteria in terms of what can
15 reasonably be detected in the field versus what do you have
16 to collect samples for and take back to the laboratory to
17 get the levels of detection that we're looking for. Some of
18 the modeling implications. What does all that entail in
19 terms of cost and complexity. And all those aspects are
20 addressed in this draft generic environmental impact
21 statement.

22 MR. FLETCHER: Roland Fletcher, Maryland. In your
23 consideration on restricted termination of licenses you
24 dealt with the group that might be there for a long period
25 of time. But have you dealt with those who would be

1 involved in preparing whatever facility might be going in
2 there? In other words the construction, the land
3 disruption, et cetera? How can any standard that you apply
4 accommodate the disruption before another facility even gets
5 there?

6 In looking at this criteria, how have you viewed
7 what's necessary to build something else there?

8 MR. CAMERON: You mean if we in other words -- the
9 hypothetical would be that the site is released for
10 restricted use, for example some industrial kind of --

11 MR. FLETCHER: Industrial, parking lot, something
12 where you --

13 MR. CAMERON: I think the way we looked at it is
14 that just as with any new facility that's being built they
15 would have to comply with the applicable state or federal
16 environmental public health and safety laws to build and
17 operate that new facility, including anything that dealt
18 with transportation impacts or anything like that.

19 At least that's pretty much the way I think we
20 would look at it. I don't think that we've had a specific
21 discussion on what would come after other than how can we
22 ensure that the land use at the site is restricted and as
23 the rule provides and Mike had on his slide, some type of
24 financial assurance for any continued monitoring activities
25 at the site.

1 But I think that the way we're thinking is that if
2 you're going to start something anew there that there's a
3 strong foundation of regulatory law that's going to apply to
4 that new facility. There's -- it won't be exempt from it.

5 MR. COLLINS: Steve Collins, Illinois. On your
6 overhead it indicated that the limit was applied to the --
7 those equivalent to the critical group. Is that in fact to
8 the average member of the critical group?

9 MR. CAMERON: Yes.

10 MR. COLLINS: What's an average member? Is that
11 the dose to the critical group divided by the number in that
12 group, or is that something else?

13 MR. WEBER: That's one of the things that's going
14 to be addressed in the guide being developed. That's not a
15 cop-out. Those of you who have dealt with that issue know
16 what I'm talking about. That's not a simple straight-
17 forward solution. I think initially our intent was that the
18 kind of scenarios that are described in 5512 would
19 accommodate -- NUREG CR5512 -- would represent the average
20 exposure to the critical group. But the more we probed into
21 that the more we realized well, that may not in fact be the
22 case.

23 There's a lot of conservatism in that 5512 was
24 intended as a screening methodology. If you get in and try
25 to actually estimate what the average exposure is it might

1 be a little more complicated than as we've described in
2 that.

3 And that's what we're sorting through and trying
4 to evaluate, the answer to your question.

5 MR. BAILEY: Bailey from California. I just have
6 one comment. I really don't look forward -- since we're
7 getting to talking about risk -- I really don't like looking
8 forward to saying that essentially a risk of one in a
9 thousand is an acceptable for unrestricted use. And that's
10 what you're doing with the 15 millirem. Is one in a
11 thousand chances of cancer.

12 And at the hundred millirem you're up into the
13 neighborhood of four or five cancers per hundred. So I
14 don't think many people are going to buy into that being a
15 real clean level.

16 MR. COLLINS: I believe in -- I do.

17 MR. BAILEY: Well, there are some --

18 MR. CAMERON: And there's nothing on thoromosis in
19 our rule.

20 MR. BAILEY: Maybe that would make it more
21 palatable, if there was a whole section that gave us the
22 scientific information that says hey, this may be good for
23 you.

24 MR. CAMERON: Do we consider that a formal comment
25 from the State of California?

1 MR. BAILEY: Probably, but it better be a personal
2 comment rather than a California comment.

3 MR. COLLINS: Let me ask a related risk question.
4 How much did the attendees at the workshops or how much did
5 the people who wrote comments address the ecological risk
6 issue and whether or not that should be factored in, and as
7 I understand it, it can cut both ways.

8 There may be more sensitive organisms than man
9 that should be considered or the remediation that's required
10 using the proposed criteria would be so draconian that it
11 would be so disruptive to the ecological cycle that it could
12 never recover.

13 MR. CAMERON: It was discussed specifically and I
14 think I'm going to let Mike talk a little bit about that.

15 MR. WEBER: You can imagine the range of
16 perspectives that might be offered on that issue. We had
17 everything in the workshops from protection of the people is
18 adequate to ensure protection of the ecological system,
19 which is basically the view that's been propagated by the
20 ICRP, the NCRP, the IAEA and other consensus technical
21 communities versus people who clearly rejected that,
22 rejected any opinions of those scientific bodies and said
23 how do we know that, we haven't tested all organisms. We
24 haven't tested all eco-systems. We don't know what the
25 long-term cumulative impacts are of the exposures to

1 different sectors of the ecological system.

2 So I don't know, I think the reason you don't see
3 something intentional in there is that the body of
4 scientific information in that area right now is not very
5 great. And it seemed from the views we heard in the
6 workshops that it was a wash.

7 People basically viewed that from both
8 perspectives and until we develop additional information
9 which indicates clearly that that is a significant concern
10 that needs to be addressed I think it's our intent not to
11 develop specific criteria for ecological protection.

12 But having said that, certainly those kind of
13 concerns are going to be addressed through the National
14 Environmental Policy Act process and the development of
15 environmental assessments and environmental impact
16 statements, again to the extent that the information
17 supports.

18 Now, I recognize that as we've discussed so far
19 today some of the states don't have those kind of
20 procedures. And it would be an interesting issue I think in
21 the application of this rule in those states how those kind
22 of considerations would be addressed.

23 MR. CAMERON: And I think that the supplementary
24 information in the draft rule specifically addresses that.
25 We're not going to establish any separate requirements for

1 protection of ecological systems. And if any of you do not
2 have a copy of the --

3 MR. WEBER: It's in the book.

4 MR. BANGART: A question back here, I think.

5 MS. WALLE: Is EPA co-authoring the GEIS or will
6 they have their own background document on this?

7 MR. CAMERON: They are what's called a cooperating
8 agency which means that they review drafts of the EIS and
9 they provide us with information where we need it. But the
10 EPA's legal viewpoint I think is that they do not need to
11 prepare an environmental impact statement for their rule-
12 making. But there will be a regulatory analysis and the --
13 I believe the -- yeah, the BID, the B-I-D background
14 information document will have that type of information.

15 But as far as we understand it there's not going
16 to be any formal environmental impact statement.

17 MR. KULIKOWSKI: To offer a somewhat contrary
18 opinion to Ed from California, in New York we have managed
19 to avoid completely in all of our guidance documents any
20 reference to the risk dose relationship. We think the
21 numbers are far too soft, that making references to one,
22 five, however many cancers per is an imagination, and that
23 we would -- we would certainly not like to see the NRC be
24 jerked around by numbers that are not that scientifically
25 credible.

1 MR. BANGART: Any other comments or questions on
2 the rule-making? Okay, well, then it's time to open the
3 floor up for any question or comment.

4 MS. DICUS: Greta Dicus, Arkansas. A couple of
5 things that I want to bring up that I noticed as we've gone
6 through the day that are concerns, and one of those concerns
7 is what I perceive to be somewhat of a fragmented approach
8 on the part of the NRC to the overall issue, decommissioning
9 and decontamination.

10 You clearly have several offices involved and we
11 apparently have multiple rules going through, the criteria
12 rule, the rule -- the participatory rule-making that is
13 going on, the timeliness rule, financial assurance. Then
14 there are position papers and there are guidance documents
15 and so forth and so on.

16 As I have listened today to some very good
17 presentations I think I've heard conflicting things. And
18 I'm very concerned. And I would ask if you have somebody
19 that's going to do a study of all these rules and determine
20 where they conflict with one another. And determine where
21 they may complement one another, determine where there may
22 be gaps in the rules, that something implied isn't going to
23 be addressed or is going to be dropped or it's not going to
24 show up in the guidance documents to try to help remove some
25 of the enormous confusion that conflicting rules or

1 incomplete rules or non-complementary rules are going to do,
2 particularly to us in the states when we go to implement
3 standards that may be troublesome because of that nature.

4 For example in public participation we have in the
5 preliminary draft rule on enhanced participatory rule-making
6 a strong voice for public participation. And we've heard in
7 another presentation this morning the importance of public
8 participation. And I'm not naive enough and I don't think
9 most of us here are to believe that if you involve the
10 public everything is going to be just wonderful, that's not
11 the case because there's going to be a lot of other criteria
12 that decide whether they're wonderful or not.

13 But I think it's important and you always have to
14 leave that door open. I'm not sure the timeliness rule is
15 even addressing it nor do I think it will even allow it.
16 That to me is a tremendous conflict and I would be real
17 concerned about that.

18 The four feet of cover is troublesome in light of
19 some of the other things that we've heard. Dose levels,
20 dose limits, we're bouncing all over the place. it's bad
21 enough that the various federal agencies cannot agree, but
22 we've got to at least -- somebody's got to agree and -- some
23 sort of unity on those sort of things.

24 I'm concerned in difference I hear between this
25 authorized unrestricted releases when there's still clearly

1 material there with some dose potential. And then
2 restricted releases, and how are these things going to mesh
3 and do they mesh. Well, I'm not sure that they do, and I
4 think it seriously needs to be looked at.

5 Other concerns, of course obviously the dose
6 modeling. Do you do it, do you not do it, what kind of dose
7 modeling do you do -- I think Cindy spoke to that extremely
8 well in her comments.

9 Site closings. I think Steve brought up the fact
10 that hey, in about three more months we have no place to
11 send the waste for most of our states. Don't bury that
12 concept. Because we truly must deal with it in our states.
13 You just have to take that into consideration, and you've
14 got to deal with it with your licensees, you're on this limb
15 with us in many of these situations.

16 We still have got to get the compatibility issue
17 resolved. Particularly with these standards we're looking
18 at. Coordination with EPA I think would be particularly
19 important. But also keep in mind concerns that we may have
20 when there is the inability to remediate at all.

21 And maybe for very good reasons, some of which
22 have been brought out in the presentations today. The mixed
23 waste, I've got a site with mixed waste. It's going to sit
24 there, people, because there's no place for it go even if I
25 had a low level waste site open for it.

1 Cost, and also which we've just talked about a
2 little bit, there can be health and safety or environmental
3 reasons you don't want to remediate. It's the worst thing
4 to do, and that needs to be factored in some place.

5 But those are my concerns. The bottom line, I'm
6 very concerned about what I think is fragmentation. And
7 then I think you need to get a handle on that. I think the
8 draft rule, early draft rule from the enhanced participatory
9 rule-making -- clearly there are some things with it need to
10 be changed maybe, but I think it's a good core document.
11 And I think it encompasses a lot of concepts and it gives us
12 a good document to work with. And I think the other rules
13 need to be brought into line and complement that and support
14 it rather than in any way being in conflict with it or in
15 any standards that we find difficult to understand, to be
16 able to support or to be able to explain to the folks that
17 we'll have to explain them to.

18 Overall, to end on a positive note, I think the
19 presentations today, clearly there is a lot of good work
20 that has gone into this, and there's some very good concepts
21 and I want to be sure those get pulled out and used in spite
22 of some troublesome issues that I've noted, and I would say
23 also we appreciate the workshop and appreciate the
24 opportunity to participate in this.

25 I don't get to come to many workshops but -- and

1 maybe you've been doing it, you know, I haven't been to
2 many, I didn't know it, but I thought the briefing book was
3 very good. It was very helpful to have the slides together
4 and we certainly appreciate that. Thank you.

5 MR. BANGART: Greta, certainly our objective is to
6 not have a fragmented regulatory program, and your comments
7 are well-taken.

8 Certainly I think that our objective here
9 obviously is to reduce some of this fragmentation or
10 inconsistencies that you see, but the specific points you
11 mentioned, we'll look at those and hopefully be able to find
12 out that we have a plan to reduce those fragments into a
13 consolidated whole. Maybe not immediately. All of this is

14 --

15 MS. DICUS: Sooner is better than later.

16 MR. BANGART: Sooner is better than later, yes.

17 But at least have a plan to recognize where those
18 exist and try to reduce them. Point well-taken.

19 MR. AUSTIN: If I could -- if you think the
20 decommissioning program is fragmented, inconsistent and
21 confusing, you should have seen it before the SDMP was
22 written. That was the whole concept, was to bring all of
23 this stuff together. And it is not perfect, but each year I
24 think the report on what's going on within the SDMP improves
25 dramatically and we are, as Dick said, striving to make it

1 even better.

2 MS. DICUS: Sooner is better than later.

3 MR. BANGART: I have a new saying and it's that in
4 this program area as in any other area where Agreement State
5 and NRC regulate use of radioactive material that the goal
6 is to have a consistent, coherent, credible national program
7 for the regulation of atomic energy and materials. Your
8 comment fits, I think, right square with that broader
9 objective that we're working towards. And that's the goal
10 that we're trying to achieve as state programs and NMSS and
11 research and all the other offices in the NRC working more
12 closely together.

13 Any other general comments or specific comments on
14 other topics? Yes.

15 MR. WRIGHT: Yeah, Bill Wright from Arizona. You
16 know, one of the interesting things about this whole thing
17 is that our sister agency is the Arizona Department of
18 Environmental Quality. And they use EPA standards when you
19 talk about radiation.

20 And one of the interesting thing is whether we
21 like it or not we're going to have to work around EPA
22 standards. And that may not make any difference to NRC or
23 anything, but it's a real problem for states that are faced
24 with that situation.

25 So be aware that we have a problem. That's all I

1 have.

2 MR. BANGART: I think we're aware of that and one
3 of the prime examples of that is -- it's one of the major
4 issues that we're addressing with EPA headquarters, is how
5 is that going to play out in the states.

6 MS. DICUS: Greta Dicus, Arkansas. One more thing
7 also which I think at some point some Agreement State always
8 brings it up so I guess it's my turn.

9 Keep in mind that we also have to remediate our
10 norm sites, and we want to be consistent with that with any
11 other standards.

12 MR. BANGART: Yes.

13 MS. ROGERS: I'd like to build on something that
14 Martha has said and that Greta has said and that Bill has
15 said because my agency does it all. We do air; we do water;
16 we do waste; we do EPA and we do NRC. And it's really hard
17 for my pollution cleanup division to go to a public meeting
18 and say well, guess what, guys, today you get one in a
19 thousand for lead and you get one in a hundred -- excuse me
20 -- that's right, a hundred thousand -- for radiation. And
21 to explain that to the neighbors is one thing. To explain
22 it to the PRPs is entirely another.

23 And we try to take a holistic view towards
24 contamination in our state.

25 MR. BANGART: That kind of issue is what -- the

1 effort that we have underway between EPA and NRC on risk
2 harmonization, and that's a lofty goal to try to get there
3 given where we are today where there is not a lot of
4 consistency as you just spoke to.

5 But that is basically where we're trying to get to
6 with the EPA. And we've taken the first step, completed the
7 first step at looking how we both assess risk and then the
8 more important and more difficult step to take is to better
9 understand how we both manage risk and are there
10 opportunities to have consistent approaches between
11 ourselves and EPA.

12 So the people in NMSS, OGC or working hard on
13 that. But it's a very, very difficult issue and it's really
14 a major national policy issue.

15 MR. AUSTIN: I would keep in mind that EPA
16 frequently receives a risk management objective from
17 congress. And that legislation drives them in their
18 regulations. In some cases they've had adverse court
19 rulings that influence what standard and how they go about
20 setting that standard is adopted.

21 And that over time environmental legislation has
22 tended to become more and more restrictive, so that there is
23 not an effort to go back, to step back and say does all of
24 this legislation with all of these different standards make
25 sense today.

1 And for us to harmonize risk management goals with
2 EPA could well result in -- or only come about through
3 legislation. So there are limited things we can do in
4 trying to set up this consistency.

5 MS. ROGERS: So are you and EPA approaching
6 congress to ask for some sort of uniformity in the programs?

7 MR. AUSTIN: We're still in the process of trying
8 to understand the programs, and that's what this paper that
9 Bob Nelson mentioned is all about. After we have developed
10 a sufficient understanding of what they do and what is done
11 throughout NRC and then EPA learns that, we would then
12 approach the question of what to do about it.

13 MR. WEBER: If I could add to that, one of the
14 things that was contained in the 1992 memorandum of
15 understanding between EPA and NRC is the commitment by both
16 agencies that where we found an obstacle in legislation that
17 we would approach congress to try to see that resolved.

18 Now, that carries with it a great amount of risk
19 because you may -- unintended -- but nevertheless I think
20 your concern is recognized by at least the NRC and the
21 people we deal with at EPA recognize it too.

22 We've sat in public meetings where members of the
23 public, rightfully so, say hey, wait a minute. How come I
24 have to reduce trichlorethylene down to a risk level of one
25 part in -- or one in 10,000 and you're telling me I can get

1 one in a thousand risk from the radiation. That doesn't
2 make sense.

3 And that's what we're all grappling with.

4 MR. BAILEY: Bailey from California. The last
5 comments regarding congress and other agencies, I hope when
6 you do decide on what level of compatibility these are going
7 to be that you recognize that states also have other
8 agencies and also have legislatures that tell them to do
9 things. And that you do not make the standards such that
10 they have to be identical but only as an upper limit on what
11 must be required, or what you may leave behind.

12 We have essentially laws in California that talk
13 about anything above one in a million risk for lifetime, and
14 it's 70 years there. And we're going to have to meet those
15 commitments. And if it is identity that is required on
16 these dose rates or risk levels or whatever we're going to
17 run head-long into trouble. We'll be in violation of
18 perhaps some state law.

19 MR. BANGART: You'll have another round, another
20 cut at compatibility, don't worry.

21 Any other questions?

22 Okay, I came away with maybe half a dozen or so
23 action items for NRC. I'd just like to go over those
24 quickly to see if there's agreement that these are actions
25 for us.

1 One is to see if we can change the survey workshop
2 so that it doesn't conflict with the CRC meeting. Get
3 information, written information if we have it or can find
4 it about the scoring system methodology that Oak Ridge uses
5 in reviewing terminated license files or look for an
6 opportunity to have a presentation at a future agreement
7 state meeting on that.

8 There was an indication that there had not been a
9 mailing to the Agreement State of the site characterization
10 technical position. Is there interest in us mass-mailing
11 that to the Agreement States?

12 [Chorus of yeses.]

13 MR. BANGART: Okay, we'll do that. I'm just
14 reminded, the draft position on calculation scenarios that
15 we use is also available for distribution so we might as
16 well put that in the same package.

17 Some documentation of what EPA uses as a dose
18 scenario that incorporates the 30-year time frame. And then
19 Greta's action to at least look at our various documents,
20 rules, regulations, guidance to see if we have a good handle
21 on where there are differences, inconsistencies and at least
22 have a plan in place to resolve those if possible.

23 Does anybody remember anything that I didn't
24 capture?

25 [No response.]

1 MR. BANGART: Okay, I'll commit to getting all
2 that done, then. I guess and then there was an admonition,
3 a request or perhaps a demand that we not do anything that
4 reduces flexibility for Agreement States and their
5 respective programs that deal with and address contaminated
6 sites.

7 I don't know yet what will come out of this
8 meeting and out of the compilation of information in terms
9 of recommendations to the Commission about what NRC should
10 do to encourage states to move in one direction or another.
11 But there are several avenues available for you and us to
12 provide comment or discuss issues further.

13 One is the document that we just sent to each of
14 the states last week that describes the common performance
15 indicators program that will be used to assess both NRC
16 Regional materials programs as well as Agreement State
17 programs.

18 If you'll remember, contaminated sites is one of
19 the proposed quote "output indicators" that would be used in
20 this common form of assessment. As we're interpreting now
21 contaminated sites, it's not just number, it's whether or
22 not there is a program in place in an Agreement State to
23 identify control and remediate sites.

24 We also -- you'll find in that document the plan
25 to conduct a pilot program using the common performance

1 indicators. We're targeting three Agreement State to
2 participate in that pilot as well as two NRC Regions.

3 Those state participants can feed back directly
4 into the NRC because they'll be a player in the pilot
5 program. Their comments both on other elements but as well
6 as the use of the output indicator, number of contaminated
7 sites. And also if you have written comments or other
8 comments to make on the document that you received feed them
9 into us. I'm sure it also will be a topic of discussion at
10 the Agreement State managers workshop that we're targeting
11 for June, and we're in the process now of trying to pick a
12 time, develop a draft agenda and you'll be seeing that in
13 the not too distant future.

14 The other avenue for feedback on where we go from
15 here is of course the compatibility policy development, the
16 new compatibility policy. The Commission has had that for
17 awhile. They still haven't come to a common mind as to
18 whether they endorse it as it was submitted or the degree of
19 modification that they would like the staff to make to the
20 proposed new compatibility policy that at least we think
21 incorporates the comments that we heard from the states at
22 several meetings in the development of that draft.

23 But once we do get the direction back from the
24 Commission and now the timing looks like maybe a few more
25 weeks, but that's a guess, we will publish that draft

1 proposed policy in the Federal Register for a 90-day comment
2 period and somewhere in the middle of that 90-day period we
3 would hold a public workshop to get a final round of
4 reaction and comments on the draft policy before we go back
5 to the Commission one last time with a proposed new
6 compatibility policy that I perhaps optimistically am hoping
7 will be in place by the end of the year.

8 But that is clearly another vehicle to use to
9 comment on whether you think something like the SDMP or
10 pieces of SDMP or residual contamination criteria ought to
11 be strictly compatible or uniform or there should be some
12 greater degree of flexibility.

13 We believe the new compatibility policy that the
14 Commission now has under review does have incorporated into
15 it the greater degree of flexibility that I think the states
16 collectively and individually were asking for.

17 I would remind you that for any change or
18 significant change to the Agreement State programs we now
19 are under direction from the staff that they have to approve
20 those changes. In fact I think you know the Commission is
21 even reviewing every program review report that involves a
22 potential withholding of adequacy or compatibility.

23 But I can assure you that as has been our
24 practice, that if there are any significant changes to the
25 program they'll not only go to the Commission to get their

1 approval or to get their modification or redirection from the
2 staff but we are now in the practice and I think have been
3 in large part for a long time trying to get input from the
4 states and factor the views from the states into any package
5 that we send to the Commission that involves the Agreement
6 State program.

7 So I think with that process in place I'm
8 reasonably confident that there's not going to be anything
9 dramatic happen vis-a-vis NRC and Agreement States in the
10 site cleanup program and where we would encourage you to
11 move in one direction or another.

12 So I think that we'll have an orderly process
13 associated with wherever we head in terms of working
14 together on further initiatives for site cleanup.

15 I have sensed today that there is a reasonably
16 strong interest or perhaps a very strong interest in
17 regulation of especially the problem of contaminated sites,
18 and certainly we all look forward to working together as we
19 move forward in this program.

20 In closing I'd like to thank each of the
21 presentors. They did do an excellent job, I think. I want
22 to thank also as I said earlier, Tom Combes, Nick Orlando
23 and Brenda Hill, because they really did the buffer work in
24 getting this workshop put together. I'd like them to stand
25 if they're -- any or all of them are here.

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1 [Applause.]

2 MR. BANGART: I also want to thank each of you for
3 coming and for your interest. There were a lot of
4 insightful questions. I think all the comments will help
5 us, and thanks again for your participation in the workshop
6 and I'll look forward to seeing you at the workshop on
7 surveys and other workshops that we might hold in the
8 future. And have a safe trip home. Thank you.

9 [Whereupon, at 5:15 p.m., the workshop was
10 concluded.]

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This is to certify that the attached proceedings
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