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1 UNITED STATES OF AMERICA

2 NUCLEAR REGULATORY COMMISSION

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4 DECOMMISSIONING WORKSHOP

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6 THURSDAY,

7 APRIL 21, 2005

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9 ROCKVILLE, MARYLAND

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12 The workshop was held at 8:00 a.m. in the

13 Gaithersburg/Betheda Room of the Shady Grove Center

14 Universities at Shady Grove, 9630 Gudelsky Drive,

15 Rockville, Maryland, Larry Camper, Director,

16 Division of Waste Management and Environmental

17 Protection, presiding.

18 NRC REPRESENTATIVES PRESENT:

19 JEFFREY S. MERRIFIELD, Commissioner

20 FRANCIS CAMERON, Moderator

21 LARRY CAMPER, Director, DWMEP

22 DAN GILLEN, Deputy Director, DWMEP

23

24

25

PRESENTERS:

DAVE CULBERSON, Fuel Cycle Facilities Forum

TED C. FEIGENBAUM, Maine Yankee Atomic Power Company

STEVEN P. KRAFT, Nuclear Energy Institute

STEPHEN HELMER, Ohio Department of Health

A. JOSEPH NARDI, Westinghouse Electric Company

DOMINICK A. ORLANDO, DWMEP, NRC

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

2 (8:04 a.m)

3 MR. GILLEN: Okay. Welcome back to day
4 two of the NRC decommissioning workshop, and I hope
5 you all had a good evening last night. As I left you
6 last night, I told you had to run off bowling cards.
7 I actually bowled a 242 last night.
8 (Applause.)
9 MR. GILLEN: But I hope you all had just
10 as good an evening.
11 And yesterday, you know, you provided us
12 with valuable input on many of the technical and
13 policy issues that we are addressing in our rulemaking
14 and in our guidance revisions.
15 Today our focus turns to lessons learned.
16 What can we take from our ongoing experience that can
17 be beneficial both in cost and in efficiency to future
18 decommissioning sites or to future operating sites
19 prior to decommissioning or to NRC in its process?
20 And to open this morning, NRC's
21 Commissioner Merrifield, Jeffrey Merrifield, has
22 graciously accepted our invitation to present his
23 thoughts on this topic.
24 Commissioner Merrifield previously served
25 as majority counsel and staff director of the Senate

1 Subcommittee on Superfund, Waste Control and Risk
2 Assessment. In this capacity, he drafted legislation
3 dealing with solid and hazardous waste disposal and
4 clean-up regulation.
5 In addition, he acted as a legislative
6 assistant to two U.S. Senators, as an associate on the
7 Washington, D.C. law firm. He was appointed as a
8 Commissioner to the Nuclear Regulatory Commission in
9 October 23rd, 1998, and was sworn in for a second term
10 in 2002.
11 Commissioner Merrifield is very familiar
12 with the operations of NRC licensees, having visited
13 all of the operating power reactors and many nuclear
14 materials facilities, including several ongoing
15 decommissioning sites. He is keenly interested in the
16 decommissioning program and has been at the forefront
17 of NRC's establishment of decommissioning policy.
18 Recently he addressed the Advisory
19 Committee on Nuclear Waste and highlighted his focus
20 on decommissioning lessons learned, such is the
21 subject of our interaction today.
22 Commissioner Merrifield.
23 COMMISSIONER MERRIFIELD: It is my
24 pleasure to be. As Dan mentioned, the issue of
25 decommissioning is one that I have had a long held

1 view prior to the time that I came to the Nuclear
2 Regulatory Commission.
3 Looking back on my background, I'm in
4 environmental training. That's what brought me to the
5 NRC, and what I worked on four years prior to joining
6 the agency was an intent to overhaul our nation's
7 Superfund policy. That was unsuccessful. The
8 Superfund has not concluded an overhaul. In fact, it
9 remains today more than ten years after to take a
10 whack at it.
11 But one of the things I observed as the
12 Senate's lead counsel on Superfund Resource
13 Conservation and Recovery Act is that there are lot
14 of impediments to getting sites cleaned up, whether it
15 is finances, whether it is lack of communication
16 between the entity which is responsible for the clean-
17 up work and the neighboring land holders, whether it
18 is government in terms of the rules and regulations it
19 puts in place that in many ways hinder the efficient
20 utilization of sites.
21 So when I came to the NRC one of the
22 things that I have challenged myself with is to try to
23 get involved in attempting to improve the way that we
24 go about conducting decommissioning activities at our
25 agencies and enhance the way in which we utilize the

1 sites in a way that may be more effective in terms of
2 its utilization by the public that lives around these
3 facilities in our nation.
4 What I'd like to do is walk through what
5 are my own personal observations in terms of some of
6 the things I've seen as I've come on board the
7 Commission and some areas that I think we can look
8 forward to improving our way of doing business. I'm
9 very pleased that this workshop is taking place, and
10 again, I take some personal responsibility for that
11 fact.
12 As Carl Paperiello will, I think, back me
13 up, I've certainly been hammering for years to try to
14 engender these types of efforts, and to really take
15 stock of the work we've done, and so I think it was in
16 that spirit that I'm very happy to be here today.
17 Starting with this slide, many of you have
18 already talked a lot yesterday about work. I'll walk
19 through a little bit more because I think it's
20 important to capture the perspective of how much work
21 we actually do have underway.
22 Right now we are probably at our highest
23 period of activity certainly on the civilian side of
24 the house that we have ever had as it relates to
25 decommissioning facilities. Three hundred materials

1 licensees terminate annually by the NRC, a significant
2 amount of activity undertaken as well by the 33
3 agreement states responsible for their programs.
4 By the way, two facilities that I have
5 pictured here on the bottom, this is the Apollo site,
6 Apollo, Pennsylvania. I know it's very difficult to
7 understand it. It's a before and after picture. The
8 same on the right-hand side of Kerr-McGee Cushing
9 employment site in Cushing, Oklahoma
10 The take on this is obviously it's a lot
11 of work that's done, actually bull dozers moving dirt.
12 In a sense obviously the largest piece of
13 work we have underway in the course of the last few
14 years is (speaking from an unmicked location).
15 Obviously in research reactors which are in active
16 decommissioning right now; some very complex
17 decommissioning facilities.
18 We have a picture here of the facility in
19 Molycorp, in York Pennsylvania, and again, I apologize
20 for the quality of the picture, but again, some sense
21 of the size that we all had to deal with.
22 Title II uranium mill tailings sites,
23 these are slightly more complicated. One is the
24 breadth of the size of some of these facilities, but
25 also today, given the price that we're going for

1 uranium, now there's increased interest in perhaps
2 reopening those types of facilities or having more
3 interest in materials contained therein. So that
4 makes our job even that much more complicated to that
5 extent.
6 The last one, fuel cycle facilities. Now,
7 there are some fuel cycle facilities which are
8 (speaking from an unmicked location). There are
9 others in the case here where there are operating
10 facilities which also have partial emission, and so,
11 again, additional work.
12 I want to go through what I think for me
13 are some of the things we need to review in my
14 presentation today. First, and I think many of these
15 are quite obvious. I'm not saying anything really new
16 here, but it's important for us and one of the worst
17 things you can ask to do is whether it is the money of
18 the utilities, of the citizens or the work that we do
19 as an agency in oversight, we can't waste the money.
20 We cannot continue to reword these statements from
21 attacks, and so the effort today and the work that
22 you're doing in this workshop is an attempt to capture
23 some of it. Perhaps some can use it now or perhaps
24 can use it later in the point
25 Task problems and solutions should be

1 documented in any great way. We need to make sure we
2 captured this in the form and it is usable. It's one
3 thing to sit up here and expound on lessons learned,
4 but if you don't actually have the documentation
5 (speaking from an unmicked location).
6 The best practices should be left to
7 share. I'm going to talk about today some things that
8 I'm concerned with. I think it's very important for
9 me to bring out these best practices because the
10 things that we find at a site in Michigan may be very
11 useful for a site in Connecticut and otherwise.
12 And then the issue, common sense changes
13 the regulatory requirements, guidance and procedures.
14 I am from New England. We are very proud of our use
15 of the word "common sense," and I think that's really
16 what we have to really think about. Are there things
17 that we bring to bear? Are there changes that we can
18 make to the regulatory process that will break down
19 some of those barriers and allow these sites to get
20 through mediation quicker and cheaper or more
21 effectively.
22 Probably, and I don't mean to make this
23 the final point because, in fact, it is, indeed, one
24 of the most important points, active public
25 participation is vital. And some of the sites may

1 have talked about it, there were some innovative
2 activities undertaken, but they were undertaken only
3 because they could achieve the buy-in of the
4 individuals who lived around the sites, and I think
5 that's quite important to reflect that.
6 Okay. NRC initiatives. The first one I
7 put on, and this in the major scope of things a huge
8 one isn't a huge one, but it is one I have been very
9 involved with as a Commissioner, and that is the
10 publication of NUREG 1814, the Status of the
11 Decommissioning Program.
12 Well, you might say to yourself, well, why
13 is that important. You publish a NUREG. You list a
14 bunch of sites. For me as a Commissioner one of the
15 things that I know from first being at the agency is
16 that we didn't have a very good way to track the sites
17 that we had under our authority. We had NRR doing it
18 one way, NMSS doing it another way. We had different
19 divisions within the NMSS accounted for some of these
20 sites somewhat differently.
21 In a dialogue that I had with Carl
22 Paperiello going over a series of years, I made it
23 quite clear that as an agency if we are to have a
24 clear sense of direction in terms of where we need to
25 go to manage these programs overall, the first thing

1 we need to do is have a good sense of the universe in
2 which we're dealing with as an agency.
3 I think with the publishing of NUREG 1814,
4 I think we made a lot of progress in that area. Now
5 we can actually go to Congress. I'll make a note why
6 this is important late on. Now we can go to Congress
7 and say we really understand much better the scope of
8 the decommissioning activities that we're going to
9 have in the future.
10 We have a better understanding of those
11 facilities which will have the capability of having
12 those sites remediated, and by the way, we have an
13 idea on those facilities which do not have financial
14 capability to do so, and it certainly imparts for us
15 a better ability to relate that information to
16 Congress.
17 Revisions in the implementation (speaking
18 from an unmicked location). We're going to talk about
19 that quite a bit in the context of the meetings today,
20 and I think those are very important changes. The
21 Commission recognized that we needed to take things
22 slightly differently. We now have the ability for
23 long-term facilities, overseeing some of the
24 (speaking from an unmicked location) controls. I
25 think that's an important opportunity to get some of

1 these things moving forward.

2 We are allowing a variety of the

3 alternatives in terms of long term controls. I think

4 we have a better recognition and understanding of

5 these changes, that not all of these sites are going

6 to go back to the resident farmer scenario. We need

7 to be reflective of the site. We need to be

8 reflective of the communities, and appropriately

9 tailor the (speaking from an unmicked location) to

10 more local and common sense use of these particular

11 sites.

12 Finally, one of the things that we did,

13 and I think having worked on before I came to the

14 Commission, having worked on some base closures by the

15 military, having the ability to actually segment the

16 site and allow early reuse portions of facilities that

17 were not intended allows a jump start for communities

18 in which these sites are located to provide additional

19 economic use of the site or other beneficial uses.

20 One of the things that I'm very proud of

21 is with a lot of the military facilities you had

22 portions of those sites that ultimately became

23 wildlife refuges or were used for purposes for public

24 use, were somewhat different than simply putting up

25 simply factories or buildings.

1 Those types of activities have also been
2 reflected in some of the sites which are
3 decommissioned right now and I think our effort to
4 encourage that has been very important.
5 Financial qualification, I'll talk about
6 this a little bit. I'll focus on this and a couple of
7 points during the slide. Money is the driver on this,
8 and I think we have to face facts. Unlike other
9 federal agencies and apartments, our agency doesn't
10 have a whole big pool of money we can tape into to get
11 these sites cleaned up. We have to recognize the
12 financial facts as we find them. We have to reutilize
13 those dollars as effectively as we can, and partner to
14 the extent we can with the licensee to make sure those
15 are done in a cost effective way. We focus on
16 resolution; we focus on actual decommissioning.
17 If we need to get bull dozers and
18 equipment moving that ought to be to the extent we can
19 our focus, not on endless litigation and endless
20 studies.
21 The last point, this has been an issue of
22 I don't want to say potentially it's been an issue.
23 Interest among folks up in Congress; what is the scope
24 and nature of the relationship between the EPA and the
25 NRC?

1 Now, I would not be accurate if I were to
2 say that that has always been the best relationship in
3 the world. We've had our professional differences and
4 opinion. I think there is an engagement both by our
5 agency and by EPA to try to narrow some of those
6 differences.
7 (The following 18 minutes are inaudible
8 due to sound system failure).
9 MR. GILLEN: Thank you very much for that
10 informative introduction to our essentially what I
11 call three-part activity today, this opening remarks.
12 And now without a break, we're going to
13 move right into the panel. If I could ask the panel
14 members to come up to the table, Larry Camper will be
15 moderating the panel today. The panel consists of
16 Nick Orlando from NRC's decommissioning group; Dave
17 Culberson from Fuel Cycle Facilities Forum; Steve
18 Kraft, NEI; Ted Feigenbaum from Maine Yankee; Joe
19 Nardi from Westinghouse; and Steve Helmer from Ohio
20 Department of Health.
21 I think as we go through each panel
22 member's presentation, you can come over and speak
23 from the podium would be good because of the
24 microphone setup here.
25 MR. CAMPER: Thank you, Dan.

1 Good morning again, and, Commissioner,
2 thank you. We very much appreciate your support, and
3 as I said yesterday in my opening remarks, the entire
4 Commission has shown a lot of interest in
5 decommissioning, and as a manager who had that
6 responsibility directly for four years, I can tell you
7 that it's a mixed bag, and the Commission is
8 interested in your program.
9 On one hand, you're getting a lot of
10 scrutiny and al ot of questions and so forth. On the
11 other hand, you're also getting a lot of support, and
12 we appreciate that.
13 And Commissioner Merrifield, in
14 particular, over the years, for the pat several years,
15 throughout his tenure as Commissioner has been
16 strongly interested in the program and shown a lot of
17 support and, frankly, has helped us at times when we
18 were in budget discussions. So he helped where it
19 counted the most, and we thank you.
20 I want to pick up a couple of themes that
21 came out yesterday and then in the Commissioner's
22 remarks. We have put together a panel here for you
23 this morning, and one of the things that I think is
24 very good about this panel is these are folks who had
25 done it. They have practical experience that is

1 extremely valuable, and what they're going to do, each
2 one of them this morning, is make a presentation,
3 about 15 minutes, and then we'll allow time for
4 perhaps two or three clarifying questions.
5 And I'd like to ask you to keep your
6 questions of a clarifying nature because following the
7 panel discussion, we're going to move right into a
8 facilitated discussion that begins to focus upon
9 lessons learned.
10 Chip Cameron, who is an attorney with the
11 NRC, who does an awful lot of meeting facilitation
12 will facilitate that process for us, and then from
13 there we're going to move into a discussion this
14 afternoon where we talk about the business process,
15 and we would like very much to get, as I said
16 yesterday, input from you in terms of how it has gone,
17 what's good, what's bad, what's ugly.
18 Now, I want to make a comment to pick up
19 on the gentleman's theme, too, to kind of set the
20 stage for the panel members this morning about things
21 that haven't worked well. From my perspective in the
22 decommissioning program, once upon a time, we actually
23 accepted a couple of reactor license termination plans
24 and started a technical review that, in fact, looking
25 back upon it we shouldn't have.

1 We found that the quality of the
2 applications were rather anemic. There were some
3 financial assurance funding issues, and we were
4 probably a year or so into the review when we came to
5 the stark realization that really we should never have
6 started this process. It was going to result in a lot
7 of RAIs, request for additional information, and so we
8 said, "Wait a minute. This is just not working very
9 well."
10 So we stopped, returned those applications
11 to the submitters, and we actually changed our
12 process. We modified our acceptance process to
13 include a 90-day technical review. We no longer
14 limited it to a 30-day acceptance review because we
15 found that there are certain submissions where the
16 quality is so poor that in the long run it's going to
17 cost the NRC and the licensee a lot more money in time
18 and effort.
19 So there's an example of revealing
20 something that worked well, admitting it, then making
21 a change, and so I hope that will set the tone for the
22 panel members as they make their presentations.
23 So as I say, we have six excellent
24 speakers today. The first speaker is going to be Nick
25 Orlando, who is with the NRC. Nick has been actively

1 involved with the decommissioning program for many
2 years now. He currently serves as a technical
3 assistant to Dan. He has been actively involved as a
4 project manager on sites undergoing decommissioning.
5 He's been very actively involved in the Waste
6 Management Symposium, which takes place each year.
7 So Nick is going to start us off with the
8 regulator's perspective on lessons learned.
9 Nick.
10 MR. ORLANDO: Thank you, Larry.
11 In the program I think it says that I'm
12 going to give a score card of NRC, but what I really
13 want to talk about is how we can insure that our
14 lessons learned today are incorporated into the
15 standard review plan or -- excuse me -- the standard
16 operating procedures of the future.
17 The decommissioning program has been
18 evolving over the past decade and a half and actually
19 prior to that. When I first started, I can remember
20 Tim Johnson was the section chief of the
21 decommissioning section of the low level waste and
22 decommissioning branch in the Division of Waste
23 Management. There were four people in the section.
24 I can remember Tim coming into my office one day and
25 dropping the Senecam (phonetic) decommissioning plan

on my desk and saying, "Congratulations. You're the new project manager."

I said, "Okay. Do you have any, you know, words of wisdom, any guidance?"

And he said, "Yeah, don't make any mistakes."

Later on he came back and gave me Reg. Guide 3.65 and 3.66, which was about all of the guidance we had at the time for looking at decommissioning plans.

Fast forward to today. The Decommissioning Directorate now has 30-some odd staff. We have a plethora of guidance documents and approaches that we've used, and now when I go into Dan's office and say, you know, "We have this issue. How do you want me to handle it?" Dan looks at me and says, "Don't make any mistakes."

So some things change; some never do.

Okay. What I'd like to talk about a little bit right now is just how the program has evolved over the last several years. There have been a lot of reasons why the program has evolved. Fiscal constraints, having to meet budgetary parameters. Our management is concerned that we haven't been getting sites off the list fast enough.

1 Programmatic self-assessments that Robert
2 talked about yesterday with our LTR analysis and
3 program evaluation identified some areas where we
4 could change.
5 In addition, our strategic plan requires
6 that we constantly strive to be more efficient and
7 effective.
8 And finally, the implementation issues
9 associated with trying to implement the LTR have
10 caused our program to evolve. As far as the scope of
11 the program, in the '90s we focused on what was called
12 the site decommissioning management plan. Back in
13 1989, Dan Martin wrote up a plan to evaluate or to
14 address 40-some odd sites that required heightened
15 attention by the Commission and identified four or
16 five major policy or technical issues that needed to
17 be resolved in order to complete the decommissioning.
18 Now we've moved past the site
19 decommissioning management plan, or SDMP. We have the
20 comprehensive decommissioning program that
21 incorporates lessons learned and activities associated
22 with power reactors, complex decommissioning sites,
23 routine decommissioning sites. We provide guidance to
24 them, as well as uranium recovery facilities, test and
25 research reactors.

1 As far as the framework of our program, we
2 had in the '90s a concentration based clean-up
3 approach. We had Reg. Guide 1.86 and FC-8323, which
4 were our principal guidance documents. Now, we have
5 the license termination rule, which provides a risk
6 informed dose based rule.
7 In the '90s we had 80-plus decommissioning
8 documents that we used. Now, we have NUREG 1757 and
9 its accompanying documents, MARSSIM and whatnot, to
10 allow us to get all of the guidance that we need in
11 one place.
12 As far as our process, we used to be very
13 reactive in our approaches to decommissioning. Larry
14 mentioned where we would get decommissioning plans in
15 and go back and forth with RAIs. Now we try and make
16 sure that we discuss with the licensees what our
17 issues are prior to writing the RAIs, requests for
18 additional information. This way we make sure that we
19 get quality submissions.
20 In the past we'd default to the resident
21 farmer. Now we're looking at using more realistic
22 scenarios in dose modeling where we incorporate input
23 from affected parties to insure that we're using the
24 right scenarios.
25 We had informal agency coordination. Now

1 we have a decommissioning management board. We have
2 our counterparts meeting, and we have our annual NUREG
3 report that Commissioner Merrifield mentioned earlier.
4 We also had in the past several different
5 MOUs with different agencies. Now we have the EPA NRC
6 MOU to help at least address in some small part
7 finality of decommissioning.
8 In the future, we're going to be looking
9 at insuring that we reduce the potential for what we
10 call future legacy sites, and if you were in that
11 discussion yesterday, understand that what we don't
12 want to have is a repeat of the past.
13 Throughout this process, we've been
14 amassing lessons learned, and what I've called here
15 just some of our collections. In 2002, we came out
16 with Regulatory Issues Summary, RIS 2002-02, which
17 identified the lessons learned we had seen up to that
18 point in reviewing decommissioning plans and license
19 termination plans.
20 We determined that early and frequent
21 consultations were an effective way to insure that we
22 got quality submissions.
23 On the technical side, we looked at or
24 determined that the environmental monitoring programs
25 for many reactors weren't adequate to do

1 characterization. So we said that, you know, you had
2 to start looking at those earlier on in the process.
3 We found that confirmatory surveys weren't
4 the most efficient way to insure that the site met the
5 clean-up criteria at the end of the day. So we
6 started looking at in process and side-by-side
7 surveys.
8 We discussed the need to look at the
9 nonradiological environmental impacts of
10 decommissioning along with the radiological impacts,
11 and we needed to make sure that submissions took a
12 look at minimum detectable activities.
13 We also talked about expanding our
14 technical reviews to look at site characterization,
15 dose modeling, the final radiation survey, cost
16 estimates and other institutional controls.
17 In Appendix O of NUREG 1757, we gathered
18 together some more of the lessons learned that we had.
19 Specifically, an effort that we had with the Nuclear
20 Energy Institute, where we came up with I believe it
21 was initially 12 and then I think it went down to
22 eight or ten questions and answers where the NEI would
23 pose a question to us and a proposed answer regarding
24 a technical or policy issue, and the staff would
25 review and then either approve or modify the response.

1 We also in NUREG 1757 in Appendix O
2 outlined some of the technical lessons learned that we
3 had determined through a review of DPs and license
4 termination plans, as well as information that we
5 determined was important from our review of final
6 status surveys, inspections, and confirmatory surveys.
7 Some of the areas that we covered in that
8 document included the necessity to develop unique
9 radionuclide profiles across the site. We talked
10 about how to characterize imbedded pipe better. That
11 was always a big issue at the power reactors.
12 In addition, we took a look at acceptable
13 approaches to develop the distribution coefficients,
14 the Kds, for soil or concrete. We talked about not
15 expending inordinate amounts of resources
16 characterizing rooms or portions of buildings that
17 were going to end up going to a disposal facility. We
18 said all you needed to do was determine enough to make
19 sure that you could characterize the waste adequately
20 to get it in the disposal site.
21 We talked about when doing gamma scans to
22 make sure that listened as well as watched the analog
23 meter because that was a good indication of where if
24 you saw contamination.
25 And finally, we talked about, amongst

1 other things, the use of beta and alpha measurements
2 for uranium and thorium.
3 And then finally, in our decommissioning
4 program evaluation in 2003, we looked at 18 different
5 areas that the program itself could be improved, and
6 for each one of those improvements that we identified,
7 we talked about the lessons learned that were
8 associated with that.
9 For example, including stakeholders in the
10 development of guidance documents and from that flowed
11 in some small part this workshop.
12 We talked about how realistic scenarios
13 could be beneficial, but you also had to balance the
14 amount of justification that would be necessary to use
15 a realistic scenario against the benefit of going with
16 that scenario.
17 We discussed the need to make sure that
18 lessons learned are shared with all stakeholders, and
19 I will get to my next slide in just a minute, which
20 you can go ahead and switch to, and then to make sure
21 that we had adequate decommissioning documentation is
22 available so that we don't repeat the mistakes or the
23 challenges of the past in the future.
24 My own sort of challenge to the group or
25 what I'd like to do is just to sort of springboard off

1 of what Commissioner Merrifield said, which is I think
2 we have three things that we really need to be
3 considering. How do we take the lessons learned that
4 we got today, the compilation of the ones that I've
5 said, and I know that some of the other speakers here
6 today are going to talk about the lessons learned that
7 their particular groups have put together.
8 How do we get those into DPs that are
9 being written today? I think that's probably a pretty
10 simple one. You can go to the licensees and say, you
11 know, "Well, here's some compilations. Talked to so-
12 and-so. Reviewed this decommissioning plan. Reviewed
13 this set of RAIs and learned from it."
14 How do we take those lessons learned and
15 get them into the sites that the Commissioner
16 mentioned earlier, the ones that are going to be
17 decommissioning in 20 years? How do we make sure that
18 when those folks -- because in 20 years I hope I'm not
19 still working. I hope I'm retired at that point --
20 but when those folks go to write their decommissioning
21 plans, how do we take what we've learned in the past,
22 plus what we're going to learn between now and then,
23 and get it into those DPs and license termination
24 plans?
25 And the third one, and this is the one

1 that I find the most interesting, is how do we start
2 getting decommissioning considered before you design
3 your site, before you start writing your standard
4 operating procedures for your sites? Because I think
5 that's going to be the real key to making sure that
6 decommissioning is done effectively and efficiently in
7 the future.
8 Before you put pen to paper, before you
9 write your first SOP, before you write your first
10 design write-up, how are you going to take that down?
11 The best example, and it's easy to
12 visualize in the next slide. It's easy to visualize
13 for me because I'm kind of a simple visual guy. We
14 did a lot of work on imbedded pipe. Well, maybe the
15 best lesson learned about imbedded pipe is don't do
16 it. If you're going to run a process line that's got
17 radioactive material in it, don't put it inside a four
18 foot thick wall. Okay? Put it on the outside and
19 wrap it in lead or something.
20 If you're going to sink a weld to do
21 environmental monitoring, make sure you design it and
22 sink it so that you can use it for characterization in
23 the future, but that's something that would have to
24 happen at the design phase. Once the facility is
25 built, it's too late unless you want to go back and

1 retrofit.

2 So I guess I tried to be cutesy here and

3 put it in three easy words, you know: identify,

4 immortalize and incorporate. In other words, how do

5 we take the lessons learned that we got today and put

6 them into tomorrow's standard operating procedures?

7 And that's what I'd like to try and keep us thinking

8 about for the rest of the conference.

9 Thank you.

10 (Applause.)

11 MR. CAMPER: Okay. Thank you, Nick.

12 Any questions for Nick? Okay. Any

13 questions for Nick?

14 (No response.)

15 MR. CAMPER: Oh, don't let him off that

16 easy.

17 Okay. Nick if --

18 MR. SHEPHERD: I'll ask him one.

19 MR. CAMPER: Please do, Jim. You need to

20 identify yourself.

21 MR. SHEPHERD: I'm Jim Shepherd, a

22 decommissioning director, and as a former project

23 manager of a number of the sites the Commissioner

24 mentioned.

25 Many times since I've worked with these

1 sites I can talk to one site and say, "Well, you know,
2 we had a similar problem over at this other site.
3 Maybe if you looked at what they did, you can learn
4 something."
5 And they'd say, "Well, okay. Where's
6 that?"
7 And they said, "Well, all of the
8 information is in ADAMS.
9 (Laughter.)
10 MR. CAMPER: And readily available.
11 MR. SHEPHERD: My question is: what are
12 we as an agency going to do to document all of these
13 lessons learned in a way that is retrievable, readily
14 retrievable and recognizable for what it is is in
15 five, ten, 15 years down the road?
16 And I think half the answer is not the
17 current system and structure that we have in ADAMS.
18 We need to look to something that is more user
19 friendly, if you'll pardon the cliche.
20 MR. ORLANDO: Well, that is the challenge
21 that I was trying to bring out, Jim. I mean, how do
22 you do that?
23 One of the things that we don't do
24 anymore, I don't know if any of you are familiar with
25 something called the "Health Physics Position Paper"

1 or "Health Physics Position," the old HPPO. It was a
2 NUREG document, and what it did is it by different
3 category outlined a bunch of different technical and
4 policy decisions that had come across over the years.
5 That was a great reference document.
6 I always thought that maybe we should have
7 something like that for decommissioning, although we'd
8 probably have to call it DPPOs or something, which I
9 don't know if that would go too good.
10 I know that for our decommissioning Web
11 page we're going to start having a lessons learned tab
12 where people can go and put lessons learned, and so
13 you know, in the electronic age perhaps we'll store it
14 in virtual space.
15 But you're right. That's the big issue,
16 is how do you get this information, put it someplace
17 that's user friendly, and then make sure that people
18 are aware of it and do use it.
19 MR. NEWMAN: Good morning. Harry Newman
20 with NEXTEP Environmental.
21 I applaud your efforts. One thing I'd
22 like to ask is with respect to you mentioned
23 implementing these lessons learned at the time of
24 prior to sign-offs. You also mentioned, I believe,
25 the design phase of the facility. I think that's

1 probably really where it needs to be focused if
2 possible, and I'm wondering, you know. We're
3 obviously focused for decommissioning, but it seems to
4 me where it needs to happen is at the licensing phase,
5 and I'm wondering what the coordination is, and if
6 this needs to go to the next session, that's fine, but
7 I did want to note and see what your comments were on
8 that, if there was a clarification as to when you are
9 actually implementing or plan to implement these
10 lessons learned, if it's at the licensing phase.
11 MR. ORLANDO: Well, for some of them I
12 think that's exactly where you have to do it,
13 especially when you're designing your facility, and
14 there are a lot of engineering lessons learned out
15 there, you know, the thing with the imbedded pipe, the
16 thing about the monitoring.
17 Some you would implement during
18 operations, but I think what we need to do is to take
19 a look at it and recognize that decommissioning needs
20 to be considered at the beginning and at the middle of
21 all operations, and before you do something, say, how
22 am I going to undo this before you build something.
23 So how we would enforce that or how we
24 would make sure that happens, I think that's part of
25 one of the things that we want to talk about over the

1 next, you know, day, is some ideas for that.
2 I mean, I know that one of the things we
3 talked about in the staff was trying to take lessons
4 learned in some of the new requirements that come out
5 of some of the rulemaking efforts we've got underway
6 and put them into 1757. Maybe that would be a good
7 parking lot for the list and say, look. When you
8 start writing your license, you need to go to, you
9 know, Volume 4 of NUREG 1757 and consider all of these
10 things.
11 The exact mechanism? I'm not sure.
12 That's kind of what I'm hoping to get out of everybody
13 today. You're right. He is about that
14 MR. CAMPER: Chip.
15 MR. CHIP CAMERON: Hi. I'm Chip Cameron,
16 and I'm going to be facilitating the discussions, and
17 I just wanted to make a short process note that issues
18 such as Jim Shepherd raised about accessibility and
19 identification of information, there's going to be a
20 lot of issues like that coming out of the panel today.
21 I'm going to put those in a parking lot in
22 the appropriate place, and when we get some flip
23 charts we'll have a start on that, but I just wanted
24 to note for everybody that we don't want to lose some
25 of the things that are coming out of this question

1 session today for discussion during the rest of the
2 day.
3 MR. CAMPER: Right. Thank you, Chip.
4 Okay. Any other questions for Nick at
5 this point?
6 (No response.)
7 MR. CAMPER: Okay. Nick, by the way, you
8 cannot retire. We're not going to let you.
9 (Laughter.)
10 MR. CAMPER: We did go a little beyond
11 questions of a clarifying nature, but, frankly, we're
12 ahead of schedule and that's okay. It stimulates
13 discussion, and I'm glad that Chip made his comment
14 about the process because what we will want to do is
15 come back to these questions and talk more about how
16 do we do that.
17 I would make a quick observation about
18 Jim's point, and that is yesterday I was looking at
19 our Web page demo out there, and one of the members of
20 the staff said to me, "Hey, we've got a great idea
21 today. Someone indicated that why don't we have a
22 direct link on the Web site to decommissioning plans
23 or license termination plans that have been approved
24 so that you can directly go from the Web page right to
25 that document and not have to go to ADAMS.

1 So we're going to look at how that might
2 be possible because there's a lot of value in being
3 able to look at a plan that has, in fact, been
4 successful. So someone had a very good idea and we're
5 going to explore it more deeply.
6 Again, Nick, thank you.
7 Our next speaker is Dave Culberson. Dave
8 is the Chairman of the Fuel Cycle Facilities Forum,
9 which is a position he had filled since the forum was
10 formed in 1987. He's currently serving in this
11 capacity from his position of Nuclear Fuel Services,
12 NFS, where he has spent 15 years in licensing, health
13 physics and strategic planning.
14 Dave is going to give us a talk entitled
15 "Decommissioning Lessons Learned at Fuel Cycle
16 Facilities."
17 And over the years, Dave, I have enjoyed
18 our many conversations and interactions on issues of
19 fuel cycle.
20 MR. CULBERSON: Well, thank you for that
21 warm introduction. Likewise the feeling is mutual.
22 The interaction has been very good for us, and I would
23 like to thank you and the staff for the opportunity to
24 be here today. This kind of setting is always good
25 for me personally, and I think for our group, and I'd

1 like to thank Commissioner Merrifield for his comments
2 and his interest. I think that says a lot to the
3 industry when you come forward like that with special
4 interests on these issues. But they are very
5 problematic issues in some regards.
6 My presentation is going to be a little
7 different than most probably because I'm not speaking
8 from a single licensee's perspective. As was
9 mentioned, I am chairman of an industry group that has
10 been going for quite some time. It was formulated
11 back in 1987 as a result of some of the earliest
12 decommissioning activities with Babcock & Wilcox and
13 Westinghouse and G.E. and Combustion Engineering and
14 ABB, Kerr-McGee, those large companies that are still
15 wrestling with some of those issues, but it has served
16 a value purpose over the years, and I want to share a
17 few of those insights from a more global perspective
18 than from any individual site perspective.
19 And I think those in and of themselves
20 will be representative of some of the issues going on.
21 Let me have the first slide, please.
22 This is just an outline of what I plan to
23 cover today. I'll give you a little bit of overview
24 of what the fuel cycle facility forum is. A lot of
25 you probably are not familiar with the group. I won't

spend a lot of time on that.

And then I want to spend a little bit of time just identifying some of the issues that we consider important that we've dealt with for years that continue to be issues, and they are undergirding some of the lessons learned and some of the issues we want to talk about today.

A few specific lessons learned, again, a more global nature and not so site specific. I think a lot of site specific issues will be covered by other panel members, and then a few recommendations that some of you ought to be familiar with because we have brought those up in public forums before.

Next slide, please.

This group is a very unique group. It's totally voluntary. It has been going sine 1987. It's a smaller group now than it used to be largely because sites have completed decommissioning and a lot of consolidation and merging of companies, but we still have a relatively strong group. We get together three or four times a year. We stay focused on decommissioning issues.

The group is compromised of representatives of source material, special nuclear material facilities, almost exclusively licensees and

1 a few consultants who represent those licensees in
2 decommissioning, and we have tried to stay focused the
3 entire time on decommissioning. That gives us focus
4 and keeps us from diluting our efforts into other
5 efforts that are equally important, but by staying
6 focused on decommissioning, it has given a bit of
7 mission that we can pay attention to.
8 Most of the sites that are involved in
9 this organization are what are often referred to as
10 the few difficult sites in the decommissioning realm.
11 They're the toughies, and I'll go into a little bit
12 about that, but they have naturally occurring
13 radionuclides that they've worked with, very difficult
14 to distinguish from background in many cases, and they
15 have a long history and lots of problems that they're
16 addressing from years and years of operations.
17 This particular group provides a voice for
18 that industry to the Commission on decommissioning
19 issues, and we have provided lots of feedback in terms
20 of comments and participation in workshops, feedback
21 for rulemaking issues, guidance issues, and we have
22 enjoyed a very, very good and solid long-term working
23 relationship with the NRC, and I want to really
24 express my appreciation to everyone at the NRC that's
25 been involved because it has been meaningful, and

1 there's been really good exchange, and we do feel like
2 the decommissioning staff has been listening for the
3 years that we've been meeting with them, and that's
4 been a big part of our successes.
5 Next slide, please.
6 I want to briefly mention nine issues that
7 we consider important to the industry. I won't spend
8 a whole lot of time on each one, other than
9 highlighting them, but these are the kinds of issues
10 that we've been wrestling with and talking about for
11 many, many years and the ones we spend most of our
12 time on. Our meetings are very constructive. We try
13 to have a lot of time for dialogue and interaction and
14 exchange of information, and I think that's really
15 what makes this group successful.
16 The first one on my list is important to
17 me because I think it's a key to our successes over
18 the years, and maybe this is also lessons learned, but
19 workshops like this one, public meetings that we've
20 been participants in, and tabletop exercises, in
21 particular, which is a personal preference of mine,
22 have proven to be very effective ways to exchange
23 information.
24 We can go to a meeting and listen to a
25 speaker and we get information we take away, but the

1 exchange that takes place in a setting like a workshop
2 or a tabletop exercise is where you really get down to
3 the nuts and bolts of some of the issues, and I think
4 that's where a lot of the lessons learned will come
5 about, and we've been exchange problems we've
6 encountered. It gets down to discussion of
7 implementation issues, and that's where a lot of this
8 really comes down to for the licensees.
9 As I mentioned earlier, these particular
10 sites have the nuclides that are very difficult to
11 distinguish from background, and that in and of itself
12 is problematic, and a lot of times we find that it's
13 a challenge trying to demonstrate that we meet the
14 clean-up criteria because of the variations that occur
15 naturally across some of these sites. We'll see
16 variations that actually will overwhelm the criteria.
17 So that presents some specific problems.
18 Next slide, number three.
19 Over the years we've come to realize that
20 there are quite a few decommissioning-like activities
21 that licensees could and probably should be able to
22 perform under operating licenses and that's been the
23 subject of recent discussion. Not all licenses are
24 structured for that to take place.
25 We have seen recent success stories there

1 where there have been license modifications to allow
2 licensees to do decommissioning activities, and
3 although they're not called that, they're the kinds of
4 things you need to do to get prepared for that
5 ultimate and final decommissioning.
6 We believe that's a smart thing to do. It
7 enables the process to start early, and it really
8 meets the intent of getting on with the process and
9 staying ahead of the game in many cases because a lot
10 of things could be done in advance that historically
11 have been postponed until the end.
12 Greater flexibility is needed in the area
13 of inter-site clean-up, partial site releases, and
14 source term removal. Those are all areas that have
15 been the subject of a great deal of discussion,
16 particularly in the area of partial site releases, and
17 we think that we're probably going to be working
18 towards hosting a workshop on that topic alone because
19 there are many issues related to that. It relates to
20 the timeliness issue and when you have to address some
21 of these areas, the smaller areas of the site, and
22 many of them are relevant because the licensees want
23 to address them, but not necessarily go to the point
24 of license termination, which is the way the
25 decommissioning program has been historically been

1 structured and the way it's defined in the
2 regulations.
3 But it's an area where we think we need a
4 lot more flexibility than we currently have, and we're
5 moving in that direction. There has been a lot of
6 progress recently, and we're hoping to make even more.
7 Number five, it has been discussed
8 already. It was brought up yesterday. I suspect it's
9 going to be the subject of a great deal of discussion
10 today, and I'll be hitting it a little bit later on,
11 but suffice it to say that additional disposal options
12 is something that I think would enable the process to
13 move along a little bit more efficiently. This is,
14 without doubt, the highest single cost item of a
15 decommissioning process, is what are you going to do
16 with that waste.
17 And it all comes down to economics, and
18 what's the most economical solution because safety is
19 rarely compromised. It becomes a question of how you
20 do it for the least amount of money and efficiency.
21 Right now there is, as you know, limited
22 competition in that market, and it keeps the prices
23 high, and we have been exploring with the National
24 Mining Association for about six or seven years now an
25 alternative that would connect fuel cycle sites with

1 uranium mining and milling sites because of the
2 similarity of the nuclides that we work with to see if
3 there is an opportunity there. They've got some very
4 large holes in the ground to be filled, and we have
5 lots of fill material.
6 And it makes technical sense to bridge
7 that gap, and we're close to I think a solution. The
8 regulatory groundwork seems to already have been laid
9 through the reg. guides. We have actually jointly
10 prepared a white paper that was submitted to the EPA
11 and to the NRC on a process for doing that, and we're
12 very hopeful that that one will move forward in the
13 next few months or at least a year or two.
14 The last item on this lists pages, the
15 phased approach. It's not too different from what I
16 talked about earlier in the partial site release, but
17 the concept of a phased approach came up in our group
18 some three or four years ago, I guess, and it just
19 seems to make sense where you can begin a process
20 under an existing operating license and do it in
21 logical phases rather than trying to wrap everything
22 into one single decommissioning planning process.
23 It makes sense to have some logical phases
24 there, one being, as I mentioned, under the operating
25 license you do what you can with the existing staff,

1 with the existing resources, existing programs, safety
2 programs, procedures, and then at a point in time
3 where it makes sense, you transition over into a
4 decommissioning process.
5 DCGLs and release criteria are something
6 that we're coming to realize you need earlier in the
7 process than at the time you get approval of the
8 decommissioning plan. So that's something that could
9 perhaps move forward early because everything hangs
10 around those criteria. That's really what it's all
11 about.
12 So if you can get that established and
13 locked down early in the process separate from full
14 submittal of the DP, then it makes a lot of sense.
15 And in the area of the final status
16 survey, there are many things that we've come to
17 realize that you need but you can't get to until late
18 in the process when you have a better understanding of
19 your actual site conditions. What are you going to
20 end up with? What's the condition?
21 There are certain areas that you can't
22 even get to until you're further along in the process.
23 So the final status survey process could be improved,
24 I think to make that a little bit more efficient, and
25 that all fits within the concept of a phased approach,

1 and we believe that makes it more efficient in the
2 long run.
3 Next slide, please.
4 The question of finality. I'm not going
5 to dwell on this one because I know this is going to
6 get plenty of discussion on the side, but it is an
7 issue that we've addressed for many, many years, and
8 it relates to more areas than just the MOU. We've had
9 lots of discussions about that, and I've been in this
10 particular group for 17 years, and it's been an issue
11 since day one, and unfortunately, as things get better
12 it changes what's been done. So you have to keep
13 revisiting history, and I think that's a sense the
14 licensees have.
15 Whether it's real or just a perceived
16 sense, there is a sense that finality isn't always
17 there. So that's certainly a subject we can talk more
18 about today.
19 The final status survey process I already
20 mentioned. Some licensees have been very successful
21 in getting that process streamlined by doing some of
22 that work early, by having plenty of involvement up
23 front and during the development process, the final
24 status surveys, and there's widely varied experiences
25 there, some successes and some not so successful

1 experiences.

2 And then the final item here, the

3 consistency between the various regulatory agencies

4 and the licensee is an issue we talked about

5 yesterday, and we'll be talking more about today I'm

6 sure, but, again, each licensee has their own set of

7 experiences there. Some of those are very good and

8 success stories we can learn from. Others have been

9 problematic and have created surprises late in the

10 process that have been difficult to deal with.

11 So that is a process that I think needs

12 continued attention, and we will continue to discuss

13 that I'm sure as a group.

14 Next slide, please.

15 I have about five lessons learned. I'm

16 going to zip through these fairly quickly, and again,

17 these are more global. I hope to hear more specifics

18 later on in the panel, but these are global.

19 The most important one to me is I think

20 the interaction we've had with the agency. I still

21 feel like that's one of our success stories. The way

22 we have had our meetings, the way we've interacted,

23 the participation at the meetings, the way the

24 meetings have been structured have really led to some

25 real results. Licensees are able to take away useful

information.

We've been able to get valuable feedback from the agency on the drivers for some of the issues that we're dealing with, and we've been able to share some of the implementation issues that make it -- you know, that's where the rubber hits the road. It comes down to being able to implement it in the field, and a lot of times that's not obvious until you talk to the folks that have to go out and do it in a way that really brings it to the surface.

This is always an important part of our meeting and I believe what's kept us going. We have seen a lot of evidence in the regulatory NRC's process of improvements. We recognize that the word is getting through and a lot of changes are being made that have made the decommissioning effort for fuel cycle sites and we appreciate that.

Next item, next slide, please.

This is a personal favorite of mine. I don't know how many of you in the room were involved, but several years ago we had a tabletop exercise. I think it was actually at the NEI offices in Washington, but it was quite an interesting three-day session that had some remarkable results, and I believe a lot of light bulbs went on that day with the

1 participants, but it was a mock decommissioning
2 process. We selected a panel of people to sit around
3 the table and to be the stakeholder. They were a
4 hypothetical company dealing with a hypothetical
5 situation, and we gave them some very real data, very
6 real site conditions, very real sets of rules and
7 guidelines they had to operate to, some very real
8 constraints from industry facilities that are out
9 there, were out there at the time, and stepped through
10 the process, and the discussion was just incredible.
11 The results were very good and positive and provided
12 some really valuable feedback for everyone that
13 participated.
14 I think if these are structured properly,
15 facilitated well, if you have realistic scenarios,
16 realistic data to work with and spend some time on
17 specific issues, keep it narrowly focused, these can
18 be invaluable tools for fleshing out issues and
19 lessons learned and compiling those in a way that
20 allows others to benefit from the experiences gained,
21 and I would highly recommend that we continue to
22 consider this kind of an approach because these have
23 been really, really good from my experience.
24 In fact, I'll be doing another one this
25 fall at the ANS meeting in Denver if anyone is

interested in participating in that.

Net slide, please.

This is a little bit more specific. I will admit that I'm not an expert at all here, but this is a subject that has been, I think, a lessons learned from our standpoint. As you know, MARSSIM doesn't deal well with underground situations. It's primarily for surface conditions, and it assumes a lot of uniformity in the data.

But we've had some successes at some of our facilities in developing subsurface DCGL values that actually made it easier to clean up a site. It provided a basis for a solid basis with modeling back-up and a good, solid safety basis for dealing with subsurface conditions a little differently than explicating everything down to what would be a surface value.

And it has proven itself more than once, and I think this is one area where there's been some innovation and creative thinking and thinking outside the box that's led to a solution that has benefitted everyone.

For specific questions in the area, I'd have to defer to someone in the audience who has done that or participated in that process.

1 Next slide, please.

2 I mentioned the final set of survey
3 process. Our experience has shown that each licensee,
4 again, has its own experiences here. The most
5 successful solutions seem to be where there is active
6 and side-by-side participation by all the parties from
7 the beginning of the process to the end, starting at
8 that early planning phase.

9 Where we have experienced the most
10 problems is when the licensee proceeds with their
11 information and their plan, and at the end calls for
12 that final confirmatory survey, and we realize at that
13 point, you realize that's the point you realize that
14 methods are different, your approaches are different,
15 the endpoint objectives are different from what
16 confirmatory survey is intended to establish. So it
17 doesn't work.

18 And there are always surprises in that
19 case. What has worked best in the past has been the
20 active participation by NRC, whether it's the region
21 or headquarters, the states if that's an important
22 party to the decommissioning and the licensee to begin
23 that process early and together and have constant and
24 frequent interaction and to do those surveys side by
25 side where there's a confidence level built up in the

1 data that the licensee is collecting to where there
2 is, in fact, maybe no need for a confirmatory survey
3 at the end. It is done in process, and we have all of
4 the data.
5 It's a much more efficient process that
6 way, and I think there's a lot of -- there's a higher
7 degree of confidence that when you're done you're
8 done.
9 Next slide, please.
10 Again, I'm not going to spend a whole lot
11 of time on the question of finality because I'm sure
12 it's going to be a lot more discussion today, but it
13 is the topic that has been on our agenda since day
14 one. It continues to be on our agenda as something
15 that frequently comes up.
16 The MOU is the most recent example of
17 something, a change that raised the question and cast
18 a shadow on the whole question of finality. It's not
19 that it takes it away. It just raises the little reg
20 flag or the question in the licensee's mind.
21 It always comes down to whether the
22 licensee is willing to take the risk or the potential
23 future liability of proceeding without that confidence
24 or certainty that when I get there I know I'm done
25 because it sometimes seems like it's a moving target.

1 I'm not saying that the system is broke.
2 It's just a perception, and I think it's something
3 that still warrants further discussion, and I'm not
4 sure that I have a solution on how to get to that
5 point because technology changes improves. I know
6 that. Progress is made and we learn from others. So
7 it's continually a changing marketplace here.
8 The next slide, please.
9 I'm going to mention just, I think, three
10 or four recommendations. They tie very closely to my
11 lessons learned. We would like to see a lot more work
12 done in the area of providing alternatives for
13 disposal, particularly for high volumes, low activity
14 waste. I think there are some innovative solutions
15 out there.
16 The fuel cycle facility forum has
17 undertaken an effort just recently, and I think Dan
18 alluded to this yesterday, to pull together a
19 collective knowledge on what's out there. WE know the
20 obvious commercial deposal sites, but there have been
21 some creative ways people dealt with their waste. We
22 want to try to capture that, and we've started that
23 process, and I have a real good start on a table and
24 a set of data to capture that in my intent, I think,
25 would be to share that with anyone. It's just good,

1 solid practical data that anyone can look at and take
2 advantage of.
3 Few people know all of the alternatives
4 that are out there, and we're hoping to flesh most of
5 those out and document those so that they would be
6 useful, but some of the ideas that have been tossed
7 around that we know of are Title C landfills, the mill
8 tailings impoundments which I mentioned earlier, and
9 we're actively pursuing that one. Industrial waste
10 landfills, and there have been lots of ways people
11 have taken advantage of that, and we would like to
12 capture all of those experiences so that they all
13 don't work for everyone, but there will be something
14 in there that someone could take advantage of if we
15 provide the information to them, and that's really
16 what the objective is here.
17 And then you take advantage of excavation
18 holes, to place dirt out to put something back into
19 and see if we can't find a creative way to take more
20 advantage of that in a safe and compliant manner.
21 Next slide, please.
22 Flexibility. This is an area that, as I
23 mentioned, we talk a lot about. Timeliness is the
24 real trigger here. You know, there's a rule
25 requirement that areas or facilities and buildings and

structures that haven't been used for a period of time would be required to take some action, and that can be either to proceed with a decommissioning and clean-up or to establish an alternate schedule for dealing with those areas.

And that often triggers actions that end up in decommissioning space when it may not need to be, and I think that's just something we kind of stumble into sometimes, but looking at the whole concept of partial site releases, source term removal, interim clean-up, interim measures, whatever you want to call it, more creative ways to deal with that so that we can use resources that are being applied now that might be better applied in other areas of the decommissioning arena, if we get some of this done under an existing license, and we have actually talked about hosting a facilitated workshop on this topic. I think we're going to do that. The details aren't together yet, but we sort of committed that in our last meeting in March, and I guess watch for more details on that one.

Next slide, please.

And, again, this is one I'm not going to spend a whole lot of time on, but just to say that there are still issues of consistency between NRC,

1 between states within and among the states and the NRC
2 agencies or areas, headquarters, regions, and with the
3 licensee interaction with all of those.
4 We often end up in a confused state there
5 as to what are we trying to accomplish and who are we
6 actually dealing with, and who do we have to answer to
7 on the final day. So that's just an area that we will
8 be continuing to work on. We believe it's incumbent
9 on the licensee to take the lead on this one and make
10 sure that they make all of the necessary contacts and
11 communications to knit that whole thing together so
12 that they understand what they're dealing with and who
13 they're dealing with, and then at the 11th hour, they
14 don't have a surprise there.
15 That has happened recently. So that is a
16 lessons learned, that for licensees to take more of a
17 role here, and communication is really the key.
18 And the last slide.
19 The issue of finality, again, I won't say
20 any more about that, but just to say that we will do
21 whatever we can as an industry to provide input there,
22 such that when there are changes we understand that
23 there is an ultimate closure to the process, that we
24 have that degree of confidence, that we perceive there
25 are no lingering risks, liabilities. It comes down to

1 that many times at the companies, and companies have
2 to make corporate decisions on where to spend their
3 money and when to spend that money, and there are
4 limited resources to work with.
5 So the question of risk and liability is
6 always at the heart of this issue. If we can overcome
7 that, I think we can proceed, but this is just one
8 that we would encourage additional insights into and
9 evaluation.
10 Thank you. That's all I have.
11 (Applause.)
12 MR. CULBERSON: Were there any questions
13 or clarifications? We'll get into substantive
14 questions later.
15 MR. KIRK: Hi, Dave. Scott Kirk, Nuclear
16 Fuel Services. Thanks for your presentation.
17 I think you really captured some of the
18 issues that faces the fuel cycle facilities, and
19 mostly that is a fact that our facilities are
20 somewhat unique insofar as that we have to demonstrate
21 compliance with the license termination rule, we're
22 really faced with especially the sites that have
23 thorium, and we generate large volumes of waste,
24 mostly because thorium drives our clean-up criteria,
25 and sometimes it's a fraction of background.

1 And I applied your reference to the use of
2 mill tailing sites, and I guess during our discussions
3 we've had thoughts that it would only make sense and
4 it's common sense to use the mill tailing sites
5 because the waste that we would dispose there, it's
6 less hazardous than the waste that's already there.
7 And you also with your efforts with the
8 Commission to try to move them along to approve it I
9 think also requires a match from DOE, and I guess if
10 you were king for a day, how would you get those two
11 agencies to work together to bring this to closure?
12 MR. CULBERSON: A good question.
13 Personally, I think a workshop or tabletop setting is
14 the best way. I'm convinced that that's a good way to
15 exchange information. I am less confident in letter
16 writing and presentations than I am actually sitting
17 around the table in a circle. I prefer the circle
18 setting where everybody is on the same level, but you
19 really lay these things out on the table.
20 In this particular case, the thought would
21 be to get all of the parties that have a stake in this
22 thing together at a table and just flesh out the
23 issues and find out in a structured setting can it be
24 done.
25 I mean, the obvious issues for the DOE are

will they take title to the sites after this material is placed there. Would the DOE be able to take advantage of the sites with the material they've got? And is this something that makes sense in the big scheme of things?

Obvious issues that we would be dealing with are the thorium and the special nuclear materials. Is that acceptable? Can we bridge that gap to get that material on those sites that typically don't deal with those types of materials in a way that doesn't make them a Part 70 licensee?

So I think it's bringing everybody to the table and talking about it for a day or two is really the best way to get started in the process.

MR. KIRK: Yeah, perhaps that could be a table top issue that we could talk about later, and I think the thought there was that this process makes such common sense that it would save DOE a lot of money for their waste, but also licensees into the future that might be decommissioning their sites 20 years from now, that they really need cost effective disposal options.

MR. CULBERSON: Thanks, Scott.

MR. JAMES CAMERON: Good morning. James Cameron from NRC Region III.

1 One of the things you mentioned, the
2 inconsistency between the reasons and headquarters.
3 When your four members have experienced those
4 inconsistencies, have you called us on it? Have you
5 raised the issue with either NRC headquarters or the
6 involved regions to find some resolution to it to make
7 sure we are consistent in the way that we approach our
8 regulatory responsibilities?
9 MR. CULBERSON: I can't speak for all of
10 the licensees. I can only speak for one that I was
11 involved with, and the answer was yes. We did have
12 that, and I think we did work through the issues, but
13 it was later in the process, far enough into the
14 process where we'd run into some challenges, and that
15 required the resolution, and then we got through the
16 resolution process, I think.
17 But I don't know if there are others, and
18 perhaps if there are folks in the room that could
19 speak to that, I'd let them comment, but I don't know
20 about all cases. I just don't know.
21 MR. JAMES CAMERON: I would encourage you,
22 you know, to bring those examples up that, you know,
23 we do need to have a consistent approach between the
24 regions and with headquarters and how we apply the
25 requirements to the licensees. If there is either a

1 perceived or a real inconsistency, I do encourage you
2 to bring that up to us.
3 MR. CULBERSON: Appreciate it. A point
4 well taken, and I think that's a responsibility of the
5 licensees to do that.
6 MR. BACHU: I'm just going to sort of go
7 back to your Item No. 9 again with consistency and
8 uniformity.
9 My name is Ujagar Bachu. I am from NMSS,
10 sealed sources devices reviews.
11 Essentially I'm looking at the 10 CFR 8.4,
12 where the Commission has jurisdiction for preemption,
13 and some states to meet their local needs have taken
14 an excursion through the back door of NORM and HARM
15 materials, and impacted those requirements to be very,
16 very low.
17 That being the case, do you think in your
18 opinion that we should look at and reassess the
19 financing requirements for decommissioning for those
20 sites?
21 MR. CULBERSON: You said financing
22 requirements?
23 MR. BACHU: Yes, sir, because it would
24 take longer or more effort to clean up to .054
25 millirems as opposed to 25 or whatever the NRC has set

1 those doses.

2 MR. CULBERSON: A good question. I don't

3 quite know how to answer that one, but the financing

4 issue is a living issue. It's ongoing. It is

5 something I know when the decommissioning rules went

6 into place initially, there was a financing mechanism

7 to make sure that sites were prepared for

8 decommissioning, and that has changed and evolved over

9 time and been adjusted, and I think that's going to be

10 an ongoing issue.

11 I'm not sure you ever really do get to the

12 point where all of the funding is there, and as things

13 improve and regulations get tighter, that's obviously

14 going to impact things. So I think it's an issue that

15 I think you're going to have to revisit periodically.

16 There's no question about that, but I don't know if

17 that answered your question. I'm not sure I can.

18 MR. CAMPER: Dave, I appreciate it.

19 Commissioner?

20 COMMISSIONER MERRIFIELD: Dave, this is

21 Jeff Merrifield.

22 I want to make a clarification of my

23 remarks as much as yours. One of the last points you

24 talked about was the issue of finality, and again, I

25 spoke a little bit about the relationship between EPA

1 and the NRC. There are two observations I would make.
2 There's an apparent difference between NRC and EPA,
3 which is not necessarily obvious.
4 The first one is in relation to the
5 alignment between the regions and headquarters, I
6 think the Commission as a whole on any particular
7 issue is making sure we can do that so that we are
8 consistent in our approach to decommissioning.
9 That is much easier for us to do as an
10 agency than it is for EPA, and the reason for that is
11 in our agency the political structure, i.e., the
12 political point to the structure is all at the top in
13 Washington, and so it's easier from a top down
14 structure to try to get that greater degree of
15 consistency.
16 With EPA you've got a much different
17 circumstance. You have an EPA Administrator who is a
18 political appointee. Then you have what is it now?
19 Ten EPA regions, each of which has its own political
20 appointee that heads that region, each of whom has a
21 slightly different agenda. And one needs to work very
22 actively with many of the regions with a degree of
23 variation between the NRC regions and a degree of
24 variation between the EPA regions is factors. So
25 that's a problem.

1 We've engendered to have an MOU with our
2 counterparts principally through headquarters. The
3 problem is that the applications that are a region by
4 region basis with the EPA has been spotty. That this
5 juncture, I think the Commission has done about as
6 well as it can do in that regard.
7 Now, we have some more shops and maybe
8 tabletops will get us a little closer. At the end of
9 the day if there is a continuing concern about the
10 ability of the EPA and the NRC to get together to
11 provide finality, I think my view -- and I don't think
12 others on the Commission would disagree -- is that
13 we're going to have to have a legislative change to do
14 that.
15 MR. CAMPER: Commissioner, thank you.
16 Dave, thank you again.
17 I think that Dave actually did a great job
18 of setting up some topics to follow on. This issue of
19 consistency is something that has troubled us greatly
20 for years. One of the ones, for example, that
21 bothered me a lot in the decommissioning arena was
22 that all of the standards that are created, whether
23 it's our standard or the license termination rule or
24 it's the standards of the various states are all
25 adequate to protect public health and safety. And the

1 processes that get you there are all reasonable and
2 safe.
3 But, however, having said that, the
4 differences in numbers, whether it be as simple as 19
5 versus 25 or 15 versus 25 millirem, causes confusion
6 in the eyes of the public, and so the challenge I
7 would ask us to think about building upon Dave's
8 comments when we get into the discussion sessions is
9 what can we get out of industry to educate the
10 community out there and to try to bring the systems
11 here amongst the states and federal regulators.
12 I think the Commissioner has aptly pointed
13 out as a federal regulator there are lots of things we
14 can do, but we are also encumbered, and there are
15 certain statutory authorities that we have, and there
16 are different federal agencies and different
17 processes, and we work hard at that, but consistency,
18 a very good topic today.
19 I'd also like to see us talk a little bit
20 more on this question of side-by-side surveys versus
21 comparatory surveys and what does that really mean.
22 Is our guidance clear on that point, particularly as
23 it relates to documentation?
24 I raise that because we had some
25 discussions with that recently, with one of the power

reactors undergoing decommissioning. There might be some confusion, some overt guidance. So I think that's something we ought to explore more deeply.

So, Dave, again, thank you. Great comments, very stimulating thoughts.

Our next speaker is Steve Kraft. Steve is the Director of Waste Management at NEI. In that capacity, Steve is responsible for policy and program leadership for Nuclear NG Industry dealing with high level waste, spent nuclear fuel, low level waste, and decommissioning.

I've had the good fortune to work with Steve now on at least three or four of those fronts and I've always found our conversations to be interesting and challenging and Steve always has lots of great ideas and lots of energy. So we're glad you're with us today.

And he's going to give us his experiences with regard to lessons learned for power reactors undergoing decommissioning.

Steve.

MR. KRAFT: It's Steve Kraft. Are you sure you've got the right guy?

Well, okay. Thank you. Thank you, Larry. A nice introduction. Appreciate it. I won't say the

1 nasty thing I was going to say about your appearance,
2 but if you want to decommission something, I'll give
3 you an idea.
4 (Laughter.)
5 MR. KRAFT: Larry and I are old friends.
6 Like, you know, when you get old enough, Commissioner,
7 forgive me for saying this. You'll experience this at
8 some point. When you get old enough, you'll start
9 seeing the same people in the same places and
10 different places, and Larry and I, people such as Lake
11 Barrett, formerly DOE, we've known each other in all
12 of the garden spots of the nuclear industry, low level
13 waste, decommissioning, Three Mile Island post
14 accident, Three Mile Island, things like that, and you
15 begin to appreciate people. Again, this is something
16 you learn as you get older. You appreciate the way
17 you're similar more than the way you're different, I
18 think, and we like to argue and fight, and Larry was
19 very kind in saying that what I said in the past has
20 been constructive. You should have heard what he used
21 to call it.
22 So I think we're beginning to appreciate
23 each other, and, Commissioner, I greatly appreciate
24 your remaining here through this morning, and your
25 opening remarks I thought were right on point, and you

1 mentioned NEI twice, and so let me say we, of course,
2 will continue to work with you and your colleagues and
3 the rest of the staff on these and other issues.
4 Anyone sense a sort of themes to this
5 discussion? I think I'm the fourth speaker this
6 morning if you count Larry, and one way or another
7 we've all said the same things.
8 The Commissioner challenged us to start
9 thinking about things a certain way. Everyone has
10 been saying you've got to think about those things a
11 certain way. So the question is: why aren't we
12 thinking about these things a certain way if everyone
13 sort of thinks we should be doing it?
14 And before I get into my prepared remarks,
15 I was just jotting down a few things. Lessons learned
16 is obviously a theme. It's a topic. It's a theme.
17 Consistency, stability, when are we done,
18 how much is enough, phased approaches. I haven't
19 heard the word "risk informed" yet. I presume we'll
20 get to it.
21 And a common theme which surprised me, but
22 it should not have, is the use of RCRA disposal sites,
23 and I want to just point out something, and I think
24 that those of you who are involved in issues other
25 than just decommissioning know this.

1 When we sit around in our internal
2 meetings at NEI and we share among ourselves, you
3 know, what we're talking to the NRC about in all of
4 its different manifestations, there are about 130 of
5 us and about three or 4,000 of you, and we all kind of
6 cubbyhole in different places.
7 What comes back and while the topics are
8 different, sump strainers is a big issue for us for
9 reactor plants. Clifton Farrell over here, one of my
10 colleagues from NEI, talks about the things he's
11 seeing in the fuel cycle facilities, a low level waste
12 area.
13 The messages, the frustrations are the
14 same, consistency, stability, what have we done,
15 what's the lesson learned, risk informed. It's in
16 every area. Security is a big area where we are
17 asking a lot of questions about what have we done, as
18 a lot of you know.
19 So I just make that observation that those
20 of you who are working perhaps only in the
21 decommissioning area, you're not alone. These are
22 broad themes that exist between the regulated and the
23 regulator, and I thought I once ran across some
24 discussion, and I think Chairman Diaz has sort of
25 alluded to this, that there needs to be a creative

1 tension between the regulated and the regulator
2 because if you don't have that, we don't make
3 progress; we don't do the right things.
4 And so I'm not necessarily bemoaning that
5 we've got these things that we need to talk about, but
6 we do need to keep talking about them.
7 If I could have the next slide.
8 I won't go through this. This sort of
9 describes the fact that EPRI and NEI collaborated on
10 this work, and I rely very heavily on Sean Bushart and
11 Mike Naughton and some of the stuff in the details
12 here are their work that I'll be presenting.
13 Next slide, please.
14 And I'm forever indebted to the folks at
15 EPRI for the work they're doing in decommissioning.
16 Several U.S. plants are close to a
17 successful decommissioning that's been covered by a
18 couple of different speakers and will be covered by
19 the more specific talks following mine about the
20 different plants, but I think it's important that
21 everyone recognize that there are certain very broad
22 lessons that we've already learned.
23 One is that decommissioning is feasible.
24 the pictures that Commissioner Merrifield showed make
25 that very, very plain. When Mike Meisner E-mailed

1 around to the industry the pictures of the demolition
2 of the dome, it was really quite exciting. I'm sorry
3 I wasn't there to see it happen. It's sort of like
4 you missed the actual event, but the pictures are
5 really quite dramatic.
6 It's practical. It can be done in a very
7 practical way. it's economic. Well, I don't want to
8 say it's cheap, and I don't want to say that it could
9 be done, you know, for a song and we shouldn't be
10 worried about the financial assurance requirements,
11 but what I'm saying is that it's not breaking the
12 bank. The money has been there. The people who have
13 been engaged in this have fed back to us that, boy,
14 we're glad we convinced our state, you know, the
15 states regulating the collection of the funds. They
16 let us collect more than we thought we actually had to
17 because of rising costs for waste disposal
18 predominantly and some of the frustrations involved in
19 waste disposal.
20 The Songs I reactor vessel is a classic
21 example. What are you going to do? How are you going
22 to get there? Can you ship it here? Can it go
23 through the Panama Canal? Not. Where can we dispose
24 of it? It can't go to the Hanford site because it's
25 the wrong compact, et cetera, et cetera, et cetera.

1 And being done at no risk to the public,
2 and I think that's the primary thing that everyone
3 should be proud of, especially the NRC staff in terms
4 of experience to date.
5 Major components have been removed from
6 all the plants that have been -- not all of the
7 components, but there have been major component
8 removals from all the plants. License termination
9 plans are approved, and of course, the experience
10 gained will be valuable to new decommissioning
11 projects.
12 But let me stop here and just mention
13 something I had not thought about until I heard what
14 Nick said, and I just wonder whether it's something
15 you all are thinking about in decommissioning. We're
16 going to enter a phase of new built very quickly, and
17 quickly in a nuclear time frame. All right? You
18 know, it's not tomorrow.
19 But there are approved plant designs, and
20 I know that those new plant designs are accommodating
21 the realities of waste disposal, waste storage. Are
22 they accommodating realities of decommissioning
23 requirements?
24 And I see heads shaking "no" over here.
25 That was my guess, and I think that if there are

1 lessons to be learned from the current decommissioning
2 that could be valuable to new plant build, maybe this
3 is the time to talk about it.
4 Now, you know, I'm stepping off script a
5 little bit here, and I'll probably have some people
6 call me. What am I talking about? This is just a
7 thought that occurred to me listening to what Nick had
8 to say, and it may be something worth thinking about.
9 Could I have the next slide, please?
10 The next two slides just list the status
11 of decommissioning. Those of you in the room who are
12 doing these decommissionings, this is probably a
13 little out of date. I think this information was
14 current at the beginning of the year. I won't belabor
15 going through them, but it is interesting to see the
16 percentages, if I could have that next slide.
17 Thanks, and then let's go to the next
18 slide, please.
19 Why is there a need for lessons learned?
20 It's been said by every speaker. So I'll say it, too,
21 not to be left out. Decommissioning projects will
22 complete work in two to three years. We need to
23 capture experiences for future decommissioning
24 projects and the phraseology that I rather liked was
25 completing the circle by making this information

1 available to operator plants, and I would then say to
2 new builders, "Well, document the lessons learned
3 obviously."
4 And I would just point out that there is
5 a very, very active lessons learned program in the
6 industry being run through EPRI, not through NEI, but
7 being run through Electric Power Research Institute.
8 If I could have that next slide.
9 This is sort of a list when people began
10 to think about, well, what lessons can be learn.
11 Obviously the cost and cash flow requirements, I
12 mentioned that with regard to waste disposal. Detail
13 scheduling makes sense.
14 A lot of this is sort of self-evident,
15 isn't it? And I'll go through some other lists, and
16 it's self-evident. It's self-evident because you're
17 thinking about it.
18 The value of planning isn't just the plant
19 itself that you go execute. The value of planning is
20 forcing yourself to think through your plan. How does
21 it all fit together? Have I done enough on this or
22 that?
23 The tabletops are an interesting idea.
24 Tabletop exercises prove to be invaluable in
25 operational sequences, in emergency planning, security

1 exercises, whatever.

2 Where are the holes? Where do you -- it's

3 a sequencing issue. As you learn your lesson and you

4 say, "You know what? We should have stopped over here

5 and done the following other things before we went

6 ahead." That kind of stuff is not self-evident until

7 you've been through it a couple of times, I think, as

8 a general matter.

9 Staffing, staffing changes over the life

10 of the facility are important, particularly, I might

11 add, in the security area where the guard force needs

12 to be considered access controls and how they change

13 during decommissioning. What work you contract, what

14 human resources you need to get the job done, worker

15 exposure and waste generation are two obvious ones

16 that we're all very familiar with.

17 What I don't have on the list here, and I

18 noted during the conversations with previous speakers

19 is regulatory lessons learned. Lessons learned are a

20 two-way street. NRC expects the industry to learn

21 lessons; industry expects NRC to learn lessons, both

22 ways. And I think that's not just fair. I think

23 that's a smart way to do business. Risk informing is

24 one of the major things that we need to look at, and

25 I think one of the really good aspects of risk

1 informing was the point the Commissioner made about
2 being more realistic about what is your end state that
3 you're looking at. A resident farmer growing his own
4 family's crops and watering his animals is only
5 appropriate if that is what is going to happen on that
6 site in a reasonable way.
7 Now, there is a site that -- and I won't
8 mention the name because I could have it wrong -- but
9 there is a site I've heard about that is in such a
10 location that there's a growing sort of resort
11 community, and they've been eying that land for
12 additional development. Well, then you're going to do
13 a different analysis on that land than you're going to
14 do on, say, if you remove one of Three Mile Island's
15 reactors and recognize that that facility is always
16 going to be an energy generation facility.
17 Because what's happened over the years is,
18 you know, these plants have 40-year lifetimes. A lot
19 of them have been extended. We hope they all will be
20 at some point. The reactor sites in this country are
21 something of a national resource. It took a lot to
22 get them approved. It took a lot to get the
23 communities to accept them. That only gets harder if
24 you think about going to greenfield sites. A lot of
25 the early site approval people are going for are on

existing sites, you know. It's Unit 3; it's Unit 2.

Well, that's not by accident. You've got the site. So if you're going to decommission and you've got an industrial use for the site, well, that's a different analysis than, say, having to go to -- this is was not to say you're not going to go to a greenfield in a couple of places. Don't get me wrong, but you have to be realistic about it, and that's where the risk informing comes in.

If I could have that next slide.

Some of the lessons that EPRI has already documented, planning decision framework and what I said about planning, that the planning itself is extraordinarily important, the process.

What key decisions in advance? EPRI has identified in one of their reports the need for preplanning what goes on, that you think about it in advance before you do your planning. Relationships, dependencies among key decisions, what data you're going to need to do the planning.

And one lesson that's been learned so far is more advanced planning is needed for the radiological in the site survey areas and the non-radiological HAZMAT areas. That was discussed by the previous speaker in the fuel cycle facility area, that

1 when you get to be doing the site surveys, what are
2 you going to do with the HAZMAT.
3 And of course, the HAZMAT, you know,
4 what's a HAZMAT and what's a rad waste now is changing
5 in the use of RCRA sites, and I was pleased to note
6 that just yesterday NRC issued a policy paper, staff
7 policy paper on control of solid materials that talks
8 to this issue of disposal and other areas.
9 Waste management, I just talked about
10 that, but again, the general theory, the general
11 principle that waste should be disposed of in the
12 facility appropriate to the risk; spent fuel should go
13 to Yucca Mountain, obviously. Greater than Class C
14 waste will probably go to Yucca Mountain, although
15 there is that wrinkle in the rule that allows
16 something else that we've never explored, and the
17 various categories of low level waste, and then the
18 bulk disposal where we would like to see use of RCRA
19 Subtitle C and where landfill.
20 And groundwater contamination, before I go
21 on to the next slide and talk in more detail about
22 groundwater contamination, my apologies. When I went
23 over this this morning, I realized a slide had gotten
24 left out, and I'm going to modify this and E-mail it
25 so that when you do the proceedings, you'll have the

updated one.

But there's a series of lessons learned, call them organizational lessons learned in decommissioning power plants I just kind of want to mention. Again, they're very self-evident once you think about it. they're not self-evident if you've never been through it and if you've never thought about it.

So, again, the point of planning is to think in advance for what you're doing.

Maintain good relations with internal and external stakeholders. As my daughter would say, "Well, duh." Well, of course, but you know, we didn't think about that. SACS did a very interesting experience in terms of community involvement. The Commissioner mentioned community involvement. The community got so involved they handed a bunch of them shovels to help go work on the site. They employed local people on the site, and they got to the point where the community wanted to have their own person doing the monitoring along with the company person, and they identified an individual in the community to be hired to do that, and this person became the expert in the community at school meetings and, you know, what have you, at the grocery store. That's a very

1 powerful thing to do.

2 Establish employee retention plan. Very

3 important. Employee retention plans are things where

4 you guarantee an employee. It's sort of the reverse

5 of a plan where you guarantee certain severences where

6 you tell an employee we will continue to pay you X and

7 then give you this wonderful package once you leave if

8 you leave and we tell you to, as opposed to when you

9 want. We need your talent here.

10 When Oyster Creek was sole to Exelon and

11 they had to do a turnover, they used an employee

12 retention plan to maintain their key folks so that the

13 transition would go well, and it did.

14 Baseline historical site assessment, site

15 characterization. Use sampling to determine extent of

16 radiological hazardous material contamination.

17 Characterize the waste you expect to have, both low

18 level, mixed waste, et cetera.

19 Inspect the character of spent fuel for

20 damage. Well, of course, you have to do that for

21 disposal purposes at Yucca Mountain, but those plants

22 that are going to full decommissioning, of course, all

23 have now stand alone ISFSI or will, and there are

24 requirements there.

25 Design documents for spent fuel disposal,

1 that's pretty obvious, but maybe not as obvious is the
2 locating all on site disposals and spills, and that
3 gets to the groundwater, a nice transition into the
4 groundwater contamination question, which I want to
5 talk about in some detail, and again, relying heavily
6 on EPRI's work.
7 If I could have that next slide.
8 It's important to keep in mind that there
9 have been no adverse off-site public health impacts.
10 It doesn't mean we can ignore it, but it's important
11 to keep that in mind, and that goes to keeping the
12 public informed.
13 Nuclear power plants have to be
14 commissioned of the characterized groundwater
15 situation, and EPRI has an ongoing program to assist
16 in this area, and there are two examples summarized in
17 these reports. If I could have that next slide,
18 please.
19 Okay. Connecticut Yankee. Well, that's
20 what it did look like. If I could have the next
21 slide. There's a little bit of bounce to these things
22 that EPRI helped me with.
23 Background on Connecticut Yankee, I won't
24 dwell on it, except to point out that the refueling
25 water storage tank and underground discharge line,

1 spent fuel pool liner, exterior tanks are the issues
2 that have led to the contamination in the ground.
3 And if I could have that next slide,
4 please.
5 This shows you the areas for the entire
6 site. You can see the green are areas where there is
7 no groundwater. There's nothing to worry about at
8 all. There's the two yellow spots that are where they
9 found contamination, but it's not affected the
10 groundwater, but then you see that red area is where
11 that occurred.
12 If I could have the next slide, please.
13 This is the location of the wells for
14 monitoring that they used. I won't dwell on it. You
15 can see there's a line here. Can you see it? It's
16 kind of hard to see. That's the location of the
17 tritium plume.
18 Next slide, please.
19 Some data from the wells. As you would
20 expect, as a result of just simple time, this stuff
21 falls off pretty good, and again, there's been no harm
22 to the public.
23 If I can have the next slide.
24 There has been some ground contamination
25 remediation going on. In this case, sort of getting

1 down to the levels, you can see that the trend line,
2 of course, is in the right direction.
3 If there are questions on this stuff,
4 trust me. I'm not the expert. There are people in
5 the room who have done this work, and we should engage
6 in a conversation. So if you want to get up there and
7 grill me on this stuff, I'm going to say, "Hey, you
8 know, I don't know the details. So you're going to
9 have to have somebody review that."
10 Next slide, please.
11 Okay. So I have identified the
12 groundwater contamination, tritium, Cesium 137,
13 Strontium 90. No surprise there. Extensive hydraulic
14 studies and aggressive removal of contaminated soil,
15 as I said, to get the levels down.
16 By the way, that's nothing new.
17 Department of Energy has been engaging in what many
18 years ago Leo Duffy, the first Assistant Secretary for
19 Environmental Management, called "hog and haul,"
20 removing the material from one site and putting it
21 into a safer site. That's not a new thing. There's
22 nothing surprising about it.
23 Next slide, please.
24 So our conclusions from Connecticut
25 Yankee is that they are addressing the groundwater

contamination, requires extensive characterization, which is an issue I think that's coming up that we're going to have to deal with, and characterization needs to continue after soil remediation, of course, to make sure that you go to where you said you were going to go.

Vertical bonding of groundwater contamination is a significant effort. To understand the depth, I mean, that's what that means. How deep does it go?

And there are some interesting pictures in the next situation, and innovative technologies. This is where, by the way, EPRI shines in developing innovative technologies to assist its members, our common members in these tasks.

Next slide, please.

Here you go. Right before your very eyes. Look at that.

Next slide, please. Thanks.

The same thing here. This is the second example of the Yankee Rowe situation. Contamination source, painted concrete, fuel pool. Yankee did not have the steel liner in the pool. It's an old, old plant.

Failure of underground discharge line,

1 again, possible minor leaks and spills from plant
2 activities and in the monitoring program.
3 If I could have that next slide, please.
4 Here are some pictures here. Oh, that's
5 kind of faint. I apologize for that, but you can see
6 the plume area. If you go to the next slide, you see
7 the groundwater, slow groundwater flows. That sort of
8 explains why the plume is shaped the way it is, but go
9 to the next one.
10 This is the reason why this is an
11 interesting example. If you know the site and sat on
12 that hill and you can see where the bedrock underlies
13 the alluvium there, and it's a little later here, but
14 here, and so you can see how this is the cross-
15 section. See, there's the containment over there, the
16 cross-section. I think that's kind of interesting,
17 and that sort of suggests to you why this difficult is
18 in the vertical characterization of the plume, one of
19 the challenges.
20 But, again, I keep stressing while this is
21 important and we need to analyze it, in some cases
22 clean it up, there has been no harm to the general
23 public.
24 If I could have that next slide.
25 Tritium only related to radionuclide

1 groundwater for this plant. Of the 51 monitoring
2 wells only one had the tritium greater than the
3 maximum contaminate level, maximum contaminate
4 limit -- sorry -- from the EPA rules. Levels have
5 declined substantially, which we would expect over
6 time. The greatest impact from the spent fuel pool
7 liner.
8 The next slide.
9 Yankee Rowe conclusions. They identified
10 the contamination. Early operational practices are
11 having a significant impact, which is a good thing in
12 terms of cleaning the site up.
13 Next slide, please.
14 These are conclusions about groundwater.
15 Minor leakage, highly contaminated, et cetera,b ut
16 you know what? Look at this last one here. I can't
17 tell you how this winds up the community. The
18 prospect of groundwater contamination has gotten the
19 folks in Nevada more wound up than any other aspect
20 perhaps other than transportation for bringing Yucca
21 Mountain on line in Nevada.
22 Groundwater contamination to the average
23 individual is very bothersome, and that's where a lot
24 of the outreach and education has to go as to what
25 these levels are and what they aren't.

1 And I will tell you if you like EPA's
2 Websites, there is a step Website buried in the EPA
3 system on groundwater, and they have an assessment of
4 what groundwater is like around the country. You
5 wouldn't believe what some of the water people in this
6 country drink and they're perfectly okay. They are a
7 high mineral content all over the place, high uranium
8 content all over the place, but that's very hard to
9 get that across to people and very hard to make them
10 feel okay about your situation as a result.
11 So the outreach to the community is
12 probably the most important thing in dealing with this
13 issue.
14 If I could have that last slide, please.
15 So this is just sort of a recapitulation
16 about the need for lessons learned in the future, and
17 let me then end where I began and say the themes that
18 we're all hearing here in terms of lessons learned,
19 the two-way nature of lessons learned, the feed
20 forward to not only operating plant but new plant.
21 Regulatory consistency, stability. When are we done?
22 When do we have to do more?
23 Phased approaches in terms of site release
24 and other aspects of it and using risk informed
25 methodologies for determining the appropriate

1 approach.

2 That concludes my remarks. I'll be

3 pleased to take on some questions.

4 Thanks very much.

5 (Applause.)

6 MR. CAMPER: Steve.

7 MR. BYRNE: Jim Byrne from First Energy,

8 Saxton, TMI.

9 What are we doing now to rub the operating

10 plants' noses into the lessons learned from

11 decommissioning so they can be ready 20, 30 years from

12 now and they don't have the groundwater plumes and the

13 PCBs, and that's the sort of stuff that they're

14 prepared for?

15 MR. KRAFT: What are we doing?

16 MR. BYRNE: Yes.

17 MR. KRAFT: Well, the EPRI program is

18 documenting, and hopefully what's going to happen is

19 through workshops like this and the efforts of -- let

20 me back up and say the last thing we need is new

21 regulations. I mean, let's just from our perspective

22 say that. I don't want anyone to walk out of here

23 from NRC saying, "Steve Kraft said you've got to write

24 new regulations."

25 I know where you live. Do not say that.

1 But having said that, the general need for
2 getting the message out to people, Jim, I mean the
3 work that you've done, I mean, the Saxton is a great,
4 great example of the right way to go about doing
5 things so that these problems don't occur, taking
6 things like spills more seriously when they occur.
7 I mean, you and I go back to the old days,
8 you know. I was employed at GPU, by the way, and you
9 know, without telling any stories out of school, you
10 spill something. You put a sign around, you know.
11 You put the tape around it that said, "Stay away from
12 it."
13 We don't do that anymore. We run our
14 sites a whole lot cleaner than we used to, but I think
15 that's the kind of attitude that we have to have.
16 It's thinking through things like decommissioning in
17 advance, which is why I made the point about new
18 plant, and I think that's the way we have to do it.
19 MR. BYRNE: One of the issues I see is we
20 speak to the choir here. We talk to all of the
21 decommissioning guys and the guys like Palisades or
22 South Texas or something never show up at the
23 decommissioning meeting and don't know what's going on
24 in the decommissioning world. You have to take a
25 message to them.

1 MR. KRAFT: Well, maybe NEI can work with
2 NRC on something like getting beyond just the
3 decommissioning community with these messages. That's
4 a good idea.
5 Thanks. Mr. Chairman.
6 MR. BAILEY: Steve, this is Paul Bailey,
7 ICF Consulting.
8 Will this batch of lessons learned be
9 available to the public like the lessons learned that
10 NRC is compiling?
11 MR. KRAFT: That's a question for Sean.
12 I think the EPRI documents are available to EPRI
13 members. I don't think it goes beyond that.
14 MR. BAILEY: That was my concern.
15 MR. KRAFT: Yeah.
16 MR. BACHU: Let me just say this is Sean
17 Bushart from EPRI.
18 I'll just say the EPRI reports and the
19 publications that we talked about and that Steve
20 referenced, those are available to members.
21 And to answer the previous question, we do
22 highlight the key lessons learned to the operating
23 plants and meetings and such. So that is out there.
24 That is available for them.
25 The groundwater information that was

1 referenced, that's all in public documents. That's
2 not something that's proprietary to us or anything
3 like that.
4 MR. KRAFT: Thank you.
5 MR. CAMPER: Steve, thank you very much.
6 Again, always thought provoking and I think you did a
7 great job with identifying some of the common themes
8 that we've heard thus far, and we ought to revisit
9 those during our follow-on discussions. Clearly,
10 this issue of factoring, decommissioning, planning
11 into the new build issue is something worth far more
12 thought.
13 I thought you had a lot of emphasis on
14 planning and ho important that is. We fully concur
15 that lessons learned runs both ways, and this
16 afternoon we're in our business process discussion.
17 We're looking for some lessons learned there so that
18 we can make the overall process more efficient and
19 effective.
20 Our next speaker is Ted Feigenbaum. Ted
21 is the president and Chief Executive Officer of the
22 Maine Yankee Atomic Power Company, a position that he
23 has held for the past three years. He has
24 responsibility for all decommissioning aspects at the
25 Maine Yankee facility.

1 Commissioner Merrifield in his comments
2 earlier this morning cited some of the complexities
3 that Ted has had to deal with first hand.
4 And by the way, on Steve's slide, he
5 showed Maine Yankee being at 90 percent. He did
6 acknowledge that that was a little out of date. I
7 think we're now, Ted, at about 98 percent.
8 MR. FEIGENBAUM: You tell me.
9 MR. CAMPER: Ted and I had this
10 interesting challenge. We had two great staffs that
11 are working diligently to get Maine Yankee
12 successfully decommissioned. We're very, very close.
13 So he and I are often talking, trying to apply just
14 the right amount of management attention to make
15 something happen and not too much to be in the way.
16 So Ted and I spend a lot of time talking these days.
17 Ted, welcome, and he's going to give us
18 his experiences at Maine Yankee.
19 MR. FEIGENBAUM: Thank you, Larry.
20 MR. CAMPER: You're quite welcome.
21 MR. FEIGENBAUM: For being so politic.
22 Good morning, everyone. It's good to be
23 here. I'd like to thank Larry and Dan for putting
24 this session together. I think it's very important
25 that we talk about lessons learned.

1 I'd like to thank Commissioner Merrifield
2 for highlighting Maine Yankee. I'm very proud of the
3 containment implosion, and to thank him for coming up
4 in the last couple of years while we were wrestling
5 with the beast, where he shared his impressions of
6 what we were doing and how we were doing it, and it
7 was very helpful.
8 I have a vaporating plant background, but
9 I see decommissioning as very important in terms of
10 the whole back end of the nuclear life cycle. It has
11 to be done right, and not only for the protection of
12 public health and safety, but I think to increase
13 public confidence in nuclear technology that you can
14 take a facility that operated straight out for 25
15 years to produce a lot of electricity and then
16 completely remove it, safely, effectively, and I see
17 a nexus there between that back end of the nuclear
18 life cycle certainly and new build projects and
19 prospects in this country.
20 So from the Maine Yankee team's
21 perspective, we think we have a higher goal here of
22 demonstrating that that can be done, and we're very
23 close to it.
24 Next slide.
25 Yes. By way of background, Maine Yankee

1 was a 900 megawatt plant, mid-coast of Maine, PWR, or
2 CE rather, that operated for 25 years; ceased
3 operation in the summer of 1997 for economic reasons,
4 largely due to the fact that it needed new steam
5 generators, which was a huge commitment, and this was
6 a time where de regulation was playing in to the fact
7 that there was some regulatory uncertainty in those
8 years in terms of life extension, and for economic
9 reasons the plant was shut.
10 So we've been in a six-year project now.
11 We spent a number of years planning for the
12 decommissioning, and then we got started in earnest in
13 1999, and we'll be finishing up this year.
14 Today, as you see on the right, all of the
15 structures have been demolished and removed, unlike
16 the Trojan picture that Commissioner Merrifield showed
17 you. We did have the funds. We had a set amount of
18 funds put aside for going ahead and doing the
19 decommissioning. Enron is not one of our owners.
20 Right now the work on site consists mainly
21 of soil remediation in the back yard and doing the
22 final aspects of final site surveys and, again
23 wrapping that up and submitting the last packages to
24 the NRC in May, and I think this is the first large
25 scale commercial decommissioning, a total

1 decommissioning and removal in this country.
2 So we do have some lessons learned to
3 share, and I just want to say that a lot of back and
4 forth here about EPRI and their work. We have
5 cooperated with EPRI over a long period of time to
6 capture all of those lessons learned from Maine Yankee
7 because of, you know, the fact that we're kind of a
8 first, and we did some innovative things, and the
9 exchange of the quid pro quo for our agreeing to work
10 with EPRI was that we would be able to publish the
11 lessons learned on our Website.
12 So next month there'll be a non-EPRI
13 version, but it's the same basic meat and potatoes of
14 lessons learned, the good, the bad, and the ugly on
15 our Website, maineyankee.com. So tune in next month
16 if you're interested and it'll be on there.
17 And, incidentally, getting back to what
18 Commissioner Merrifield talked about in terms of reuse
19 of the site, the site was originally 800 acres. Four
20 hundred acres were released a couple of years ago and
21 are now being developed. There's light commercial and
22 industrial development going on. If you drove past
23 the site, the former site of the plant, you'd see on
24 the left there's buildings going up, and people are
25 going to be working there.

1 On the right side there's also 200 acres
2 which we've donated to environmental education as part
3 of a settlement with local activist groups, and
4 they're building trails now to walk from the Maine
5 Yankee site into the town of Wiscasset connecting with
6 other trails. So it's really exciting for us, and of
7 course, the last 200 acres are a buffer zone for the
8 ISFSI. We do have 64 dry storage casks containing
9 fuel in greater than Class C waste, and you tell me
10 when that will be resolved, but we hope some day to
11 develop also the last 200 acres as well.
12 Next slide. I find myself perhaps in a
13 repetitive mode here with some of the other speakers.
14 So I'll move quickly, but just some thoughts about
15 before you begin this kind of an effort on a complex
16 decommissioning, and it has been said planning,
17 planning, planning, just like a refueling outage. All
18 of the work is done up front before any physical work
19 is actually done.
20 And we did a lot of site
21 characterizations. We did 130,000 site measurements
22 over an eight month period in the '97-'98 time frame,
23 800 lab samples of soil, sediments, core bores,
24 asbestos or things that we thought were asbestos. We
25 did a lot of work, and it wasn't enough. We could

1 have done and perhaps should have done more.
2 We involved potential bidders on the work.
3 They camped out on our site. They saw all of the
4 data. They were part of the process so that they
5 would feel comfortable putting in their bids, and a
6 lot of planning. You can break down a
7 decommissioning. Actually the end product of a
8 decommissioning is a final site survey. You really
9 have to have the end in mind and plan a job based on
10 what you're trying to deliver that's the product at
11 the end, and that's what it is.
12 And there are a lot of pieces and major
13 projects which we form teams to work on. Obviously
14 the RCS decontamination was one of the first to bring
15 down the source term and the dose to our work force.
16 Getting to Colvin Dock (phonetic), isolating systems
17 and structures that are important to safety, moving
18 the fuel. We had 1,400 fuel assemblies that needed to
19 be moved to a dry cask storage facility.
20 Draining, playing the remediation,
21 electrical isolation segmentation of the reactor
22 pressure vessel.
23 Hot spot removal, again, we were very
24 focused on making sure that dose was low, and we made
25 special efforts in the characterization process to

1 find those hot spots and remove them up front before
2 we sent a lot of workers into the plant.
3 We had to make a decision on how to do
4 this job, and it seemed like a good idea at the time,
5 given that we had a fixed amount of funds and because
6 of the debacle situation in the '80s when the last set
7 of plants came on line and they were way over budget,
8 we said let's share the risk with the contractor.
9 So we put it out for bids and had, as I
10 said, the contractors work on site, get comfortable
11 with the site characterization, and we started down
12 that road of a fixed price, you know, $300 million
13 type of contract to do the whole job, womb to tomb so
14 to speak, and ultimately it didn't work, and we were
15 forced to take it over and self-manage it.
16 Our contractor went into bankruptcy, not
17 necessarily due to Maine Yankee, but did go into
18 bankruptcy, and we had to step in for Stone & Webster
19 and take on the general manager role, and we found
20 ultimately in the end breaking up the job into
21 smaller packages, smaller projects and sharing and
22 spreading the risk over a large number of companies
23 was a better outcome for us.
24 Retaining experience, we talked about
25 that. I think Steve talked about it. Early on a lot

1 of people left Maine Yankee. They wanted to move on,
2 stay in the operating world, but we did identify some
3 key people in operations. Obviously we still had fuel
4 to deal with, but also people in HP, RP, very
5 important. People with mechanical construction
6 background and field engineering, and not the kind of
7 engineers that sit in their office and design new
8 systems, but engineers that can evaluate, well, if we
9 drop this stack, you know, if we pull it over, what's
10 the effect going to be on the adjacent buildings?
11 Those kinds of real world, practical
12 engineers, and you all have them or all of the
13 operating plants have them on their staff, but they're
14 not necessarily the people that are in the design
15 engineering area.
16 So we did use severences and retentions
17 and golden handcuffs to really hold onto those people
18 that were key to our success, and you know, I'd be the
19 sixth or seventh person to talk about -- well, let me
20 just talk about negotiate versus litigate.
21 Anybody can hire a high priced lawyer and
22 beat up activist organization folks, and you know,
23 extract, you know, a win in that kind of arena, and
24 I tell you that we had in mind a different approach
25 for Maine Yankee. We wanted to make sure when we

1 walked away from this site that there was no question;
2 nobody had any concerns about the job we had done.
3 And when you have a litigation, it's
4 always a win-lose kind of situation, and it creates
5 hostility, unhappiness, people are concerned. They're
6 always questioning when they lose in a litigation what
7 you did and they'll be a problem forever.
8 So we over a course of a year, 30 or 40
9 meetings, negotiated terms of an LTP, and we gave up
10 a lot, and we did a lot more as a result than we
11 probably originally would have, including agreeing to
12 a clean-up standard more stringent than the NRC's 10
13 millirem, all pathways, and four from groundwater, and
14 we did other things, but in the end, I think we saved
15 two years, and when we walk away, I am certain and
16 based on the feedback I'm getting from the community
17 and surveys we've done, people will feel good about,
18 you know, what's going on at Maine Yankee, what
19 happened there, and the obvious indication of that is
20 they're building offices right across the street, and
21 I think that speaks volumes.
22 Involving stakeholders and people have
23 talked about that all morning, I just want to put my
24 take on it, which is you can involve stakeholders with
25 a small "i" or a capital "I," and early on we made a

1 commitment to really bring the public into this
2 process, but I mean in a meaningful way.
3 We had meetings every month at least
4 initially and then every couple of months we had the
5 NRC. Ron Bellamy is here. He spoke at our community
6 advisory panel many times. There was always somebody
7 from the region there. We had the people from the
8 state reporting on what we were doing. Management
9 gave a report, and we really involved them in the
10 decision making.
11 We took people from across the community,
12 people that were influential and had an interest, and
13 educated them about what nuclear power was all about,
14 what decommissioning was all about, what the NRC
15 regulations were all about, and they really helped us
16 in the decision making process.
17 When it came to the point of making a
18 decision of wet storage versus dry storage of the
19 fuel, there were many, many meanings, and we opened up
20 that decision making process to the public and
21 ultimately came up with dry cask storage as the best
22 solution for us.
23 Rubbleization, which is taking the
24 buildings after the contaminations have been mostly
25 removed and using it as part of the fill, very

1 controversial, and we decided not to pursue that as a
2 result of a lot of input that we got at these public
3 meetings. So we took another approach there.
4 But you know, in the end, it's a give-and-
5 take process and people are going to be very confident
6 when we're done with what's gone on.
7 Next slide.
8 You know, when you're dealing in a
9 decommissioning, you're dealing with work that is
10 hazardous at times and certainly you can even call it
11 dangerous. Real risks of high exposure contamination
12 during certain phases of the job. We went into areas
13 and took things out in places where people never go,
14 you know, don't go in there. It's locked high rad,
15 and there's no need to go in there, don't go in there.
16 But we, you know, had to get in there and
17 get components out and so forth, and you're dealing
18 sometimes in the decommissioning world with
19 contractors that are not steeped in nuclear culture.
20 I remember, you know, observing a guy from our
21 demolition contractor. He was operating a machine,
22 and I saw something going on that I didn't think was
23 safe. I asked him, you know, got his attention and
24 asked him to stop, and he said, "We need to write a
25 corrective action about this. You can't, you know,

1 continue to do this."

2 And he looked at me like I had, you know,

3 four eyes. "Corrective action? You know, what is

4 that?"

5 And it really is a process of educating

6 some of these contractors that do this kind of work,

7 and they're very good at it, but they're just not used

8 to working with 1,400 fuel assemblies, you know, in

9 the next building and working in areas with a great

10 deal of contamination.

11 We had to stop work many times for weeks

12 at a time to get the culture right, to make sure, you

13 know, we understood what we did wrong and the lessons

14 learned so that we avoid problems in the future.

15 We did end up -- we haven't had a lost

16 time accident in almost three years. As a matter of

17 fact, all of those buildings that you saw removed in

18 that picture, there wasn't a single lost time accident

19 in the whole period of time that major demolition took

20 place.

21 So it was painful. You had to be on top

22 of it all the time, but you can get good results, and

23 also the dose, we were going to finish Maine Yankee

24 for 520 rem, which is less than half, I believe, of

25 what the NRC allowable is. So we're really proud of

1 that.

2 And just a moment about SCWE. You're in

3 a situation where people are losing their jobs. Lots

4 of people are losing their jobs. The community is

5 losing something that they perceive as important.

6 Certainly from a tax point of view it has been a great

7 loss for them, and you know, it's very important to

8 establish clear values right at the outset: what your

9 challenges are, what you're going to do about it, and

10 the CAP, the Community Advisory Panel, is really a

11 great outlet for us to share all of that because the

12 media always came and they always reported on what

13 happened in the proceedings from the previous night.

14 So lots of communication is key.

15 The waste disposal plan. Commissioner

16 Merrifield mentioned that, that we decided to remove

17 a lot more than maybe was absolutely necessary, having

18 done a lot more work, but we felt that we partnered

19 with Envirocare and got their cooperation. We

20 promised them all of our waste, 420 million pounds,

21 more or less, was shipped by rail out to Envirocare.

22 About 20 percent of the cost of the total job,

23 including large components, and it's a complicated

24 deal. You know, a lot of different forms of waste,

25 classes, requirements, and when you're shipping 2,000

1 miles across the country, you know, there are going to
2 be some issues and there are going to be some
3 problems; there's going to be some events.
4 So put a lot of focus on where the waste
5 is going and the different types of waste.
6 Use of technology. A few things.
7 Segmentation of the reactor pressure vessel, we used
8 high pressure, abrasive water techniques using
9 telerobotics. I don't know how we could have kept the
10 dose to what we finally accomplished without that kind
11 of special technology that was developed for us by
12 Framatome. So they really did a great job.
13 A lot of underwater clean-up. We had
14 areas of the plant where we had to send divers down
15 with special vacuum equipment and platforms to be able
16 to clean up underwater. Very expensive, but necessary
17 to, again, gain public confidence in that we did a
18 total job.
19 And we talked a little bit about
20 explosives. Bringing down the containment with the
21 explosives was truly the safest way to deal with that
22 dome because there was no way to get a hammer up there
23 in a safe way without putting people in danger. So it
24 has to be done carefully.
25 We did use explosives for the turbine

1 pedestal. We call it percussive softening. That's
2 the official term.
3 (Laughter.)
4 MR. FEIGENBAUM: But we did that early on.
5 The turbine building came down. The pole crane inside
6 containment, again, from a safety perspective that was
7 the fastest, easiest, and safest way to do it, but you
8 have issues. You have contamination on site. So
9 explosives spread contamination. You have switchyards
10 that are still operational. Will the vibration, you
11 know, black out New England? There are real issues
12 that have to be looked at when you're bringing
13 explosives on site next door to spent fuel assemblies.
14 So it can be done carefully. I would
15 suggest use the best people, the people that bring
16 down all of these casinos in Las Vegas. They know
17 what they're doing, but other technology, certainly we
18 use the in situ object counting system, ISOCS, to take
19 gamma readings of irregular areas to make sure they
20 were clean. We're using that for FSS in some cases,
21 and a dose model. Let's not forget the software, to
22 evaluate your results and to evaluate special
23 situations when necessary to see from a real world
24 practical perspective, you know, what you've got, and
25 that dose modeling is also key and is very helpful to

1 explain things to the public.

2 Independent reviews. I'm a believer in

3 checks and balances. I think it's very important to

4 have people that have been through what you're going

5 through to come in and tell you what they found. We

6 did change course a little bit based on independent

7 reviews. One key thing is we were, you know,

8 scaffolding walls, a quarter of an inch, a quarter of

9 an inch, still finding contamination, reiterating,

10 reiterating, and finally, one of the independent

11 reviewers from another project out on the West Coast

12 said, "Why don't you just rip it and ship it?"

13 And we really had to step back and visit

14 mid-course in the project what we were doing, and we

15 did change direction as a result of that for some

16 future buildings that were still ahead, including

17 containment. So I can't speak enough about bringing

18 the lessons learned while you're doing the work, you

19 know, right to the job site.

20 Specialized talent, we've talked about

21 this. Don't plan on using just your own staff to do

22 one of these projects. You're going to have to bring

23 in outside talent, and it really helps get out of the

24 operating mode a little bit also when you bring in

25 some people that are fully focused and have taken down

1 these plans. We found it a very important part of the
2 team.
3 And just some afterthoughts, and this was
4 discussed about RCRA. Maine Yankee was built and
5 operated before EPA laws, which really didn't go into
6 effect until the '70s and early '80s with a vengeance.
7 So it was a different era and there were different
8 standards of operation, and we found when we did our
9 characterization a lot of surprises, not only where
10 you would expect around warehouses and filling
11 stations on site and, you know, under tanks and those
12 kinds of things, but we also found relic tops
13 (phonetic), where for hundreds of years, you know, it
14 was 800 acres. We bought the site, and we never
15 characterized every square inch of the site, but we
16 were now responsible not only for cleaning up the
17 reactor, but there were 16 to 20 sites where people,
18 you know, were dumping pesticides and paint cans and
19 tires and washing machines and, you know, all of these
20 areas had to be cleaned up.
21 So I wouldn't say it was as significant an
22 effort as cleaning up the radiological portion of the
23 plant, but it wasn't insignificant, and it needs to be
24 part of the planning.
25 Reaching accord with regulators. My point

1 there is -- and Larry kind of alluded to it -- is
2 we're 90 percent-plus complete with submitting our
3 final site survey packages, and I think, you know,
4 even at this point there's not a complete
5 understanding on our part or agreement from the NRC as
6 to what a final survey package needs to contain, and
7 we're working through that. You know, we're going to
8 get there.
9 But I do think, you know, if I had to do
10 it all over again up front, I think there would be
11 more agreement and planning as to what a package that
12 would be acceptable to the NRC needs to contain. So
13 again, we're making progress there, but it would seem
14 like a simple thing, but it turns out it's not to get
15 that clarity and that common understanding.
16 And it's the same thing with inspections.
17 ORISE has been up four or five times. They're coming
18 again next week for their final review of Maine
19 Yankee, and sometimes there's been some miscues about
20 what the team expects when they get there, what
21 documentation will be available and what support
22 they'll get. Again, more up front planning of those
23 kinds of things, better communication between the
24 licensee and the NRC would be helpful there. On my
25 next decommissioning I'll make sure that that happens.

1 We underestimated the amount of
2 contamination and the amount of work. We had this
3 vision that we'll scabble off (phonetic), you know, as
4 I said, an inch or so of concrete, do our surface
5 scans and be done.
6 Well, as it turns out, coatings at Maine
7 Yankee were not always maintained. Some flaws in
8 walls didn't have coatings. The contamination gets,
9 you know, into the walls, into the floors, follows the
10 rebar, follows the imbedded pipe, follows the conduit,
11 and you know, you're off to the races with
12 contamination and depth.
13 So you know, ultimately the light went on
14 and we realized we needed to take a lot more material,
15 which increased waste shipments and, you know, all
16 that as a result, and also we needed to develop new
17 methods to be able to verify that we didn't have
18 contamination at depth, different instrumentation,
19 different documentation, and you know, that has led to
20 a lot of interaction with the NRC.
21 So lessons learned. It's all in the EPRI
22 report, and I suggest you take a look at that.
23 Maine is a beautiful place, but not in the
24 winter. We probably in retrospect should have shut
25 down work for two or three months a year in the worst

1 part of the winter. We've had a couple of bad ones
2 back to back here. The buildings are cold and dark,
3 and now there's no more buildings. So there's no
4 shelter at all.
5 Machinery break down at certain
6 temperatures. The ground freezes. We're doing a lot
7 of soil work, and you know, it's frozen and it's like
8 concrete. So, you know, we've got those kinds of
9 problems to deal with.
10 Work is slow. Work is difficult for the
11 work force. A lot of wetness. This spring we had a
12 lot of rain, and you know, you clean up an area. You
13 dig sometimes down to bedrock, and then you go home
14 for the weekend, you come in, and it's rained three
15 inches and, you know, everything is full up with
16 water. You have to treat the groundwater,
17 recontamination from adjacent areas that we haven't
18 yet cleaned up, lots of problems.
19 And I think if we had to do it again, we
20 would go to Florida for the winter and regroup in May,
21 but we're pushing through here.
22 And quality control and records. Again,
23 the end product is the FSS, and making sure that the
24 documentation is correct so that you have credibility.
25 We've put layers of quality control on it. There are

1 tens of thousands of greetings that have to be
2 recorded. We heard about MARLAP yesterday. I think
3 that's an excellent thing that everyone should be
4 looking at in terms of data quality.
5 And just one point about NRC guidance on
6 records. I think there's a little arcaneness and it's
7 really focused more to operating plants in terms of
8 what records have to be maintained, and I think for
9 decommissioning there needs to be some understanding
10 about, you know, you don't need to hold onto records
11 for equipment that's buried in Barnwell.
12 You know, those kinds of issues have come
13 up on Maine Yankee, and we've worked through them with
14 exemptions, but I think the regulations themselves
15 need to be looked at.
16 So in summary, let me just say that it has
17 certainly been an enjoyable experience. We are
18 anxious to share our lessons learned through the EPRI
19 report and other ways. The Maine Yankee team believes
20 that it has demonstrated that you can take one of the
21 plants down and remove it, and we believe that it was
22 done in a safe way that the public finds acceptable.
23 So I thank you, Larry, and appreciate it.
24 Thank you.
25 (Applause.)

1 MR. FEIGENBAUM: Any questions for me?
2 Yes.
3 MR. BELLAMY: I'm Ron Bellamy from the
4 NRC's Region 1 office.
5 Ted, I would suggest you've taken the
6 local stakeholder involvement to another higher level,
7 and you've already implemented one of the recurring
8 recommendations from this morning, and that's
9 documentation of lessons learned.
10 I don't recall exactly. What I'm asking
11 is would you comment on that report, and was it done
12 under your auspices or was it done under the Citizens
13 Advisory Panel's auspices and how can the people in
14 the audience today get hold of that lessons learned
15 report?
16 MR. FEIGENBAUM: This is a report that the
17 Community Advisory Panel worked on themselves the last
18 six months. They have now disbanded. There's a new
19 Advisory Panel for Spent Fuel Oversight. That's a
20 different group, but this is something they wanted to
21 do. They were so proud of what they had accomplished.
22 They wanted it documented for not only other
23 decommissionings, but also for other controversial
24 projects, whether it be LNG projects or, you know,
25 maybe some day another nuclear build.

1 They wanted to put down their process,
2 their charter, how they felt about the whole thing,
3 and I think it's an excellent report giving their
4 perspective directly.
5 So they generated this themselves. We
6 paid for it, but they hired their own editor to put it
7 together and make it user friendly and usable, and it
8 also is on the maineyankee.com Website for anybody
9 that wants to see it. If you download it, it takes a
10 long time.
11 MR. POTTER: Tom Potter, radiation
12 protection consultant.
13 Can you give us an idea of your current
14 projected total cost for the decommissioning?
15 MR. FEIGENBAUM: Yes. I'd say roughly
16 $500 million. That's a nice round figure. Certainly
17 there has been some litigation along the way with our
18 dock (phonetic) contractor and our cask vendor, but if
19 you add up how many dollars went out the door to do
20 the job, it's roughly $500 million, which is just
21 about what we have in the trust fund. So it worked
22 out well.
23 MR. BACHU: My name is Ujagar Bachu.
24 I'm glad the gentleman asked you the
25 question. I have had a fair amount of experience in

1 designing, building, and construct nuclear power
2 plants in Canada. I had the total responsibility for
3 a turnkey project, and I spent a fair amount of time
4 at Three Mile Island soon after the accident.
5 Sir, my question to you is: as a part of
6 this sharing of costs, normally the plants take about
7 anywhere from six to ten years to build, and we found
8 out that one to $2 million per week is the maximum
9 amount optimally that can be spent, and Commissioner
10 Merrifield observed that the driver of all these
11 things is optimization and efficiencies of how much
12 you can spend and spread it out over the time frame of
13 two years.
14 Do you have any feel what the maximum
15 optimum value that can be spent to get maximum returns
16 in decommissioning?
17 And the second part of the question, if
18 you have any idea as to what plus or minus variation
19 from the actual projected cost to the costs that were
20 actually realized.
21 MR. FEIGENBAUM: Right. All right. Let
22 me answer the second one first.
23 The self-performance budget, we had, as I
24 said, a dock contractor come in, worked for about a
25 year, didn't work out. They were terminated. When we

1 took on the job as Maine Yankee to manage it, our goal
2 was $539 million. That was our budget, and we're just
3 below that, you know, $500 million area. So we cam in
4 under projections.
5 And we have an inceptive, by the way, with
6 the state through FERC. FERC agreed upon an incentive
7 that there's a dead band in there, but if we come in
8 under $520 million, that there'll be some money
9 actually given to the owners of the plant as a result.
10 In terms of your question, you know, there
11 are times during a decommissioning when you have some
12 major projects going on like when we were moving the
13 reactor pressure vessel, getting it out and shipping
14 it to Barnwell where you get a spike in the cost, but
15 I think, you know, during the heart of the matter,
16 when we were wrestling the beast. It was roughly
17 about $200,000 a week that was going out the door, and
18 there's just so many people you can manage on a site.
19 About $200,000 a week, $800,000 a month was kind of
20 our peak, taking out the special evolutions.
21 MR. LEVIN: Ted, Adam Levin. An excellent
22 generation.
23 I'm going to probe a little bit more with
24 respect to your total cost to decommission. My
25 question is you had preliminary decommissioning cost

1 estimates that were performed by an outside entity
2 prior to getting into the decommissioning, and I was
3 curious as to how those matched up to what your
4 projected actual costs for decommissioning is going to
5 be.
6 MR. FEIGENBAUM: You know, I'm probably
7 not the best person to ask that question because I
8 kind of came in in the middle of it, didn't pay a lot
9 of attention to the studies that were done by the
10 estimators back in the mid-'90s. So I don't feel
11 comfortable giving you an accurate estimate, but you
12 know, we spent about a half a billion dollars over six
13 years to do this. I don't know what the TLG estimates
14 actually said.
15 MR. LEVIN: Okay, and did that include the
16 -- does the half a billion that you've spent include
17 your projected cost for managing spent fuel?
18 MR. FEIGENBAUM: Oh, no.
19 MR. LEVIN: Okay.
20 MR. FEIGENBAUM: No, no, no, no. That's
21 through decommissioning. We have this ISFSI facility
22 about 500 yards north of the plant, and we certainly
23 have an extensive guard force and a handful of people
24 to manage it out in the future years. It's a few
25 million dollars a year, and that's not included in

1 the --

2 MR. LEVIN: Does that include the cost of

3 building the ISFSI in the first place though?

4 MR. FEIGENBAUM: Yes, it does.

5 MR. LEVIN: Okay. Thank you.

6 MR. FEIGENBAUM: Okay. Thank you very

7 much.

8 MR. CAMPER: Thank you very, very much.

9 Okay. Just quickly a few comments.

10 (Applause.)

11 MR. CAMPER: Ted, thank you very much. A

12 lot of real world experience.

13 We heard a lot about planning, the

14 importance of the final survey and the role in

15 planning, and obviously the active involvement with

16 the community and the steps that you went through, and

17 I think Ron's comments were right on the mark.

18 What we're going to do is change this a

19 little bit. We're going to take a break for ten

20 minutes. We're a little behind schedule, but we're

21 hearing a lot of good information.

22 Commissioner Merrifield has to depart. I

23 wonder, Commissioner, did you have any parting

24 comments you'd like to share?

25 No. Well, again, sir, thank you for

1 coming, and we very much appreciate your being here.
2 Let's take ten minutes, and then we'll
3 come back and finish up with our last two speakers.
4 Thank you.
5 (Whereupon, the foregoing matter went off
6 the record at 10:54 a.m. and went back on
7 the record at 11:08 a.m.)
8 MR. CAMPER: Okay. We do have two final
9 speakers from this morning's panel, and I'd like to
10 introduce our next speaker.
11 Joseph Nardi is the License Administrator
12 with the Westinghouse Electric Company, where he has
13 worked for the past 38 years. He has been involved in
14 11, count them, 11 different Westinghouse
15 decommissioning projects, and I've had the chance to
16 talk with Joe along the way on a number of those
17 involving all aspects of the fuel cycle research and
18 development and test reactors.
19 Now, here's an individual who has rolled
20 his sleeves up and walked the talk. So, Joe, we
21 welcome you, and he's going to give us his
22 observations on Westinghouse's perspective on lessons
23 learned.
24 Joe, thank you.
25 MR. NARDI: Thank you.

1 I found it interesting, Larry, that you
2 threatened Nick that he couldn't retire. I've heard
3 the same words. Somebody remarked to me yesterday
4 that decommissioning is kind of like a tar baby. Once
5 you get in it you never get loose from it, and that's
6 pretty much my experience.
7 I'm really going to focus today on trying
8 to bore into some of the more explicit, specific
9 lessons and some recommendations that I have.
10 Dave gave you a very good overview of the
11 fuel cycle industry and some of the big picture items
12 that we've learned over the many years working in the
13 fuel cycle facility forum. So I don't want to just go
14 back and repeat those. Those are all very applicable.
15 So what I'm going to do is talk about some
16 programmatic recommendations that I have, look at some
17 of the guidance issues that I've seen mostly centered
18 around trying to decommission a large uranium fuel
19 fabrication facility, and then get into some of the
20 specific lessons learned in a very big picture yet.
21 Next slide.
22 First and foremost is the need to have
23 information, particularly your DCGLs, at a very early
24 stage in the decommissioning. The current process
25 assumes that you're decommissioning. Your DCGL report

is going to be part of your decommissioning plant. What I have found is that having those values is very important and an integral part of the planning and is needed at the very earliest stages. It's just not enough to wait until you generate a DP, submit it and get an approval. For a complex site, it has to be far up front.

So there's a need to allow an approval process for early submittal and approval of this derivation report, even during the operational stage about the plant, and in fact, we're taking this step right now. I have a facility that we are projecting to decommission, go into decommissioning in about three years. We have already prepared the DP and are planning to submit it now.

There has to be some provisions in that for updating, but it can be done.

Dave mentioned the concept and others have mentioned the concept of the need to decommission in stages. I think that this is very important to a complex site. What I have here is an observation. I don't recall have a complete fix for it yet. I think we need to keep working on it. The concept is alluded to, but the implementation in my view is still uncertain. We need a clear understanding how we can

1 implement decommissioning in stages for a complex
2 site.
3 Another issue that I've come up with is
4 the issue that occurs when you start getting into very
5 large volumes of waste containing SNM and low
6 concentrations. All of your current regulations on
7 security, accountability, criticality safety are based
8 on mass and are risk based for low concentrations of
9 material for the same mass.
10 I presented a paper at the Health Physics
11 Society that goes into more of this, and so I won't go
12 into a lot of detail on the discussion. I will
13 reference that, but there is a need to do a risk based
14 consideration of the regulations to provide exemptions
15 for low concentration waste material from the
16 security, accountability, criticality safety
17 requirements.
18 Okay. These are four specific examples
19 that I want to go in to with respect to the guidance,
20 and I'm going to cover each one of these in a little
21 bit more detail, but these are very specific issues
22 that I've found. The first one is -- next slide --
23 the first one is how the average varying thicknesses
24 across the contaminated zone. NUREG 1757 gives you
25 some guidance that says alternately the licensee may

adopt an average weighted approach to calculate a representative thickness.

Now, what happens when you do this is if you calculate RESRAD and do it for different thicknesses, you get a curve of dose that goes from low and then tails off.

If you're averaging a very large thickness with a very small, most of your site had a very thin layer surface contamination, and this was a very explicit example that came up at one of our sites.

You get a very conservative number, and I'll give you some more examples of that, and this was written up. This is an example of where we put forth a lessons learned from a negative standpoint, not just a positive one, but this was a paper that I presented at the Health Physics Society in July last year.

Next slide.

Here is the result. Option number one is if you just use the current guidance and you do an area weighted average, you get 16 millirems by the process we did. If we just say, well, averaging a whole bunch of thickness that isn't given any dose, let's just back up the thickness and only take the thickness where the knee of the curb is. You drop it down to eight millirem.

1 What I think should be done and my
2 recommendation is that you should calculate the dose
3 for each area so that if you have a large area with a
4 thin layer you get a dose. If you have a small
5 area -- please excuse me. My voice is going already.
6 If you have a smaller area with a thick
7 dose, you calculate the dose for that. It ends up
8 more calculations, but then you area weight the dose,
9 which I think is more accurate, almost one third of
10 what I would have gotten by the original method. So
11 that's my recommendation there.
12 Next slide.
13 Yes. How do you determine what an
14 insignificant radionuclide is? When can you remove
15 them from considerations?
16 NUREG 1757, again, gives you the words
17 "insignificant means no greater than ten percent of
18 the applicable dose criteria." There's two possible
19 interpretation of those words. One train of thought
20 is that when you do your characterization, no result
21 for that particular radionuclide can be greater than
22 ten percent of the whatever your criterion is.
23 So if you're working to a 25, you can't
24 have a dose associated within the characterization
25 samples greater than two and a half or, as in the

1 example I had, if your DCGL is 100, you can't have
2 greater than ten for the actual concentration you
3 measured during characterization.
4 I think that's inappropriate. The way I
5 did it and the way I suggest that it be worded is that
6 when you look at the distribution of the
7 radionuclides. The insignificant radionuclides should
8 not contribute more than ten percent of the dose for
9 that mixture. It's a subtle difference, but it makes
10 a big difference sometimes in what you can do, and I
11 have a little bit more information on that.
12 Next slide.
13 Another example of something that we got
14 into is how to conduct a final status survey for a
15 backfilled excavation. NUREG 1757 does give you some
16 guidance if you have volumetric contamination of how
17 to do sampling of that, but that kind of presumes
18 you're going to leave it there.
19 MARSSIM talks about, well, it's based on
20 the entire concept that you only have a very thin
21 surface after you're done. If you're going to
22 backfill, you backfill with clean.
23 We did a job, and the approach we used is
24 documented in this other paper, and by the way, I have
25 copies of all three of these papers to provide to you,

1 and I have some extras up here. But basically what we
2 did was you have an excavation, and you're going to
3 backfill with soil that is slightly contaminated, less
4 than DCGLs.
5 What we did is basically did the bottom of
6 the excavation, built up layers, and on each layer we
7 did another MARSSIM survey so that effectively we did
8 a whole series of surveys as we went up. I think this
9 is something that is missing from the guidance and
10 should be there.
11 Another kind of a negative lesson learned.
12 We did area factor calculations for my one site, and
13 if you look at NUREG 1757, it gives you very specific
14 guidance that says that the codes will modify the
15 appropriate usage factor as you decrease the area and
16 run the calculations.
17 What I found after about a year is that
18 this is only true if you're using the default
19 parameters in at least the RESRAD. I didn't try D and
20 D.
21 We need additional guidance on how to do
22 that, and the next slide gives you some examples.
23 This is the area factor calculations for our site.
24 AF1, the first line was what I ended up with for Tech-
25 99, doing it the wrong way. It's in our

1 decommissioning plan right now. When I realize that
2 you have to manually vary the code, that's the second
3 line, and if I just went back in and set everything at
4 the default, the difference between the second line
5 and the third is that the second line uses our site
6 specific criteria, and the third line uses RESRAD
7 default.
8 So on the next slide, this came about by
9 looking at the Yankee Rowe LTP and realizing how they
10 did it and building on that another example of how
11 information is needed to be shared because I would not
12 have struggled with this for a long time before I
13 realized what the mistake was, but this is basically
14 the approach I have put together and am going to go
15 back in with.
16 But there are three factors, the FPLANT,
17 the FMEAT and the FMILK that have to be varied. If
18 you use the RESRAD default, RESRAD does this for you.
19 If you put in anything else, RESRAD doesn't do it. It
20 gives you the kind of results I had to be given.
21 And I think there are other parameters
22 that would be appropriate. For example, if you have
23 an isotope that this is Tech-99, but if you had a
24 radionuclide that was the predominant pathway was
25 external radiation, you might have to look at other

parameters, such as the fraction of time spent on that area and vary that to get a more realistic area factor for MARSSIM calculations of the elevated measurement.

Let me go into two specific lessons learned, and I don't have a paper reference on this right now. It is going to be presented at the ANS D and D conference in Denver. So this is kind of a preview of some of the information that we're seeing.

Next slide.

Kind of a busy slide. I can't go away. I have to stay here. Sorry.

(Laughter.)

MR. NARDI: Can't retire. Can't leave. Can't do anything.

(Laughter.)

MR. NARDI: This is a mixture of radionuclides that we had on the site, and understand that inside the plant if you look at this, americium, neptunium, plutonium, Tech-99, the only reason they come about is because of the issue of the recycled uranium and enriched uranium that occurred, but we identified that as a potential.

When you look inside the plant, you don't see these at all. They're not a factor. The uranium is entire the dominant factor.

1 Two years ago if you had asked me are
2 these going to be important, I would have said no, but
3 look at Tech-99. Here's our DCGLs that we calculated
4 using site specific. Tech-99 had a DCGL of 23, of
5 course a background of zero, forgetting all of this
6 other. This is my average value. Contribution to
7 dose, 76 percent of my total dose for soil outside on
8 the site.
9 That was a real surprise to me, that it
10 becomes so important to your process of looking at
11 soil remediation.
12 Next slide.
13 The other one is Thorium-232. Both Dave
14 mentioned this and Scott brought it up in one of his
15 questions. Lots of times you're dealing with a
16 radionuclide that's present in the environment, has a
17 very low DCGL. For our site we calculate a DCGL for
18 volumetric soil of 1.5 picocuries per gram. My
19 average on my background is .99. My average on the
20 site -- thee are all the samples on the site -- is
21 2.11. Most of the sample is way down. I have two
22 samples way out in areas that I would have expected it
23 to be. Most of the rest of this should be background.
24 There's a couple samples in here at low
25 concentration. The average of that is 2.11. I don't

1 know if I have a problem with a variation in
2 background or an actual residual thorium.
3 Next slide.
4 But here's what it means. This is the
5 average, 2.11 percent contribution to the dose. That
6 2.11 is about 12 percent of my dose for the site on a
7 clean-up just from the thorium that I don't -- in our
8 case way back, thorium was apparently used. We don't
9 have a lot of history, but this site had a long
10 history of other uses.
11 So for the last low enriched uranium, we
12 didn't have any, but we have to look back at what was
13 considered. If I drop my background to .5, it goes
14 way up. If I take my background and say, well, let me
15 use the 95 percent confidence interval for the
16 background number, I'm still significant contribution
17 to dose.
18 So if I subtract instead of .991, which is
19 my average, if I subtract a 95 percent confidence
20 number, I'm still with a high dose contribution to my
21 final clean-up. It's a significant effect.
22 I don't have an answer. I'm just pointing
23 this out as the significance of what can happen on
24 what I would have thought a couple of years ago to be
25 insignificant radionuclides.

1 Okay. The next slide is just for
2 questions. I'll take questions at this point or
3 anything else you want, Larry.
4 MR. CAMPER: Questions for Joe? Don't let
5 him off that easy now.
6 AUDIENCE MEMBER: Thanks, Joe.
7 You mentioned the desirability of getting
8 DCGLs early and Dave mentioned it, too. It might be
9 worthwhile commenting on the chicken and egg problem,
10 the idea being that you have to have some
11 characterization information to give the idea of
12 extent and distribution of nuclides in the source to
13 calculate the DCGL.
14 MR. NARDI: I don't adhere to that. I
15 think that you need to know what possible
16 radionuclides are out there. You can calculate your
17 DCGLs based on a one -- which is really which you do.
18 Put in one. You don't have to know your distribution
19 of the radionuclides. You don't have to know anything
20 about the site contamination levels. You have to know
21 about the site physical parameters and all the other
22 things that go into it. I think that's important.
23 I think you can do this well before you
24 get into decommissioning, and my slide, my
25 presentation at the ANS is going to go into some other

1 issues.

2 When we started calculating some of our

3 DCGLs, they really began to drive the characterization

4 levels that we had to meet the minimum detectable

5 activity. We found out that neptunium, we couldn't do

6 it by standard techniques. We had to drive the

7 neptunium level way down to get information that would

8 be useful to us.

9 If I had done characterization and then

10 done the DCGLs, i would have had to go back and do

11 some more.

12 Jim?

13 MR. BYRNE: Jim Byrne from First Energy.

14 In your backfill scenario, do you guys

15 look at doing like an automatic processing system on

16 conveyor belts for backfill rather than the sort of

17 manpower intensive, tedious layer effect?

18 MR. NARDI: No, we did not. You know,

19 that's another possibility. What I gave was our

20 approach was lay it down, do the surveys as you were

21 going. We ended up with the data necessary, and I'm

22 proposing the same thing for the next site if we get

23 into that. That's one approach to do it.

24 I have thought about the conveyor belt

25 approach, too.

1 Yes?

2 MR. NEWMAN: Thank you for your talk. I'm

3 Harry Newman with NEXTEP Environmental.

4 A question as to what drove you to look

5 for these other nuclides at a site where you wouldn't

6 expect to find neptunium, technicium, et cetera. Was

7 there guidance or direction?

8 MR. NARDI: Actually it was expected to

9 see it. We have seen it strictly because the uranium

10 that was received in the 1950s, '60s, into the '70s

11 incorporated those isotopes from recycled uranium that

12 went through the enrichment process into the plant.

13 So I deliberately went after looking for those because

14 those are the ones that are reported in enriched

15 uranium during that period, which covered our

16 operating history.

17 AUDIENCE MEMBER: A general question

18 really for Larry, NRC, related to the thorium issue.

19 That has been, because of the low levels

20 of stuff, has been problematic for that industry. Is

21 there -- it has been addressed on a case-by-case type

22 basis. Is there any attempt to acknowledge the better

23 dosimetric modeling for thorium which will give you

24 about a factor of seven in reduced dose contribution?

25 I know that we have done that on a case-

1 by-case type basis. It seems like it's kind of time
2 to do it through the industry across the board.
3 MR. CAMPER: I'm going to ask Duane
4 Schmidt to answer that because he's very close to
5 those kinds of issues.
6 MR. SCHMIDT: Stu, I think you might be
7 talking about the new ICRP model, dosimetry models,
8 and we have allowed the use of those. It is on a
9 case-by-case basis. Licensees need to ask because an
10 exemption is required, but we have allowed that on at
11 least a couple of cases and have directions from the
12 Commission that that can be done. You know, there are
13 certain conditions, but that can be done.
14 MR. CAMPER: Okay. Joe, thank you very
15 much. I appreciate all your comments.
16 (Applause.)
17 MR. CAMPER: I think with Joe's comments
18 a couple of things that I was struck by was, again,
19 this issue of planning, the need for DCGLs early in
20 the process, again, the emphasis upon phased
21 decommissioning, what to do about large volumes of
22 waste that have low concentrations. You have several
23 very interesting slides dealing with risk
24 considerations for exemptions, calculating doses,
25 various survey methodologies, and I think some of

1 those things that Joe was pointing out could be well
2 served in some of the discussions later on, and of
3 course, last but not least, the important role of
4 trace contaminants and perhaps some of the surprises
5 you found along the way.
6 Our last speaker, but certainly not the
7 least, is Stephen Helmer. Stephen is the supervisor
8 of the decommissioning and waste management staff of
9 the Ohio Department of Health, Bureau of Radiation
10 Protection. He's worked in that position at the
11 bureau for six years and has been an important
12 contributor. Just yesterday, in fact, I understand he
13 had a lot of interesting ideas on institutional
14 controls.
15 And you might recall at the outset of my
16 remarks yesterday morning I emphasized the importance
17 of the states in the decommissioning process and how
18 those of you as licensees and practitioners really
19 have to have conversations involved with states
20 actively while in the process, and the state, frankly,
21 and the local municipalities are the last jurisdiction
22 you'll find standing as you try to exit the site.
23 So Stephen's views will be very important
24 to us.
25 MR. HELMER: It's good to be here today.

1 You'll have to pardon my voice. I still haven't got
2 it back quite yet.
3 The State of Ohio became an agreement
4 state in 1999. So we're fairly new at this, within
5 five years or so. When I was called by NRC to ask
6 about providing lessons learned, Ohio would prefer to
7 call it lessons learning because it's ongoing, and
8 certainly some of the legacy sites left to us by NRC,
9 I was prepared to give a few of them back to the
10 Commissioner, but he left too soon. So I guess we're
11 going to keep them.
12 (Laughter.)
13 MR. HELMER: What I want to do is give you
14 a little bit of a background to where we are because
15 I think we're somewhat unique in the country in some
16 respects. I have about ten lessons learned, if that's
17 what you want to call them for now.
18 We requested to become an agreement state,
19 which does not include, for those who may not know,
20 nuclear power plants, the uranium enrichment facility,
21 and other federal facilities that are in our state.
22 In 1995, which was a key year, the Ohio
23 General Assembly passed into law the then definition
24 by NRC which envisioned license termination only if
25 the license site was decontaminated to levels

1 permitting release for unrestricted use. So we began
2 that path early on before we became an agreement
3 state.
4 So when we became an agreement state,
5 activities include unrestricted release criteria only.
6 If licensees are unable to clean up their facilities
7 to unrestricted release, then they need to be
8 converted to a possession only license.
9 So decommissioning, our definition in the
10 State of Ohio, to safely remove license operations
11 from service and reduce residual radioactivity to a
12 level that permits release from the licensee's
13 property for unrestricted use and the termination of
14 the license. The termination of the license under
15 conditions other than unrestricted release is not
16 permitted in the State of Ohio.
17 There are good things about that and there
18 are bad things. It's not necessarily the best way,
19 but it's what we've been given as far as law, and
20 that's how we look at it currently.
21 Now, there's good and bad with that. I
22 mean, certainly it's an easier path or a simpler path,
23 but as I will show you, there are some complications
24 and burdens that come with that.
25 What's unique to Ohio, and I said this

1 yesterday, is that our bureau comes under the Health
2 Department in the State of Ohio. So with that the
3 Health Department has to weigh in as far as our
4 contribution, and the Department of Health must be
5 protective of human health before, during and after
6 site decommission is complete. The Ohio Department of
7 Health must be able to walk away from site clean-ups
8 where unrestricted risk criteria has been met, and
9 this is the key.
10 Department of Health is limited in its
11 capacity to verify or enforce restricted release. ODH
12 would have to periodically check on restrictions with
13 limited authority and limited resources to act on the
14 restrictions if they were compromised.
15 In other words, if you left that site
16 under restricted conditions, whether it's deed
17 restrictions or institutional controls, if those were
18 to be violated or compromised, the mechanisms the
19 department would have are pretty limited. We're just
20 not geared for that particular aspect, and so we
21 believe that the licensing for long term possession
22 provides the oversight necessary to insure public
23 health.
24 This is pretty much a description of what
25 we do as far as the state. It's pretty much the same

as the Department of Health as far as the NRC. The key aspects of our group though before somebody goes into decommissioning is also to insure they have a decommissioning funding plan, which is one area that is quite challenging to determine how much is enough funding. So we still wrestle with that as well as everybody else.

I guess this would be our first lessons learned, if that's what we're going to call them. We have not encountered significant difficulties in cases where licensees request to go on to decommissioning. You know, they're licensed. They've done their activity. They come to us and they say we want to go to decommissioning.

Now, granted we've only had one completed decommissioning and two are about to be decommissioned this year. So that's only three. So it's not like this long list of licensees going into decommissioning, but we know what we're doing. We know how to do it, and we've had no major significant challenges under this kind of a scenario.

Next slide.

But Ohio has encountered significant challenges in cases where licensees were ordered by the courts to go into decommissioning, and so when the

1 courts weigh in, it makes it far more complicated in
2 the decommissioning process.
3 The two cases that I provide today, one
4 will be Shieldalloy in Ohio, but from the onset I want
5 to make it clear that the licensees that I speak of
6 today have been very cooperative, and they're just
7 doing their part. They see things differently than we
8 do. We understand that. There is a public aspect to
9 all of this and that has to be weighed in as well, but
10 we don't take it personal. We just try to follow the
11 law that we have and the licensee process that already
12 exists, and it really speaks for itself.
13 So to me in this room, you know, the
14 Health Department in Ohio and the agreement state that
15 we have, the arrangement that we have, it's not just
16 NRC and us. We're also dealing with DOE, trying to
17 clean up their sites. We're dealing with U.S. EPA
18 because they have clean-up criteria. So we're
19 challenged not just from licensees, but from other
20 federal agencies doing their own clean-up criteria,
21 and it certainly keeps us on our toes as far as our
22 relationship with them, where it's going.
23 And the last slide that I'll show you
24 today kind of speaks to that. There are far more
25 complications other than just the standard licensees,

1 but in this case for Shieldalloy the court order
2 assigned Ohio EPA as the lead state agency, and this
3 happened at about the time we became the grievance
4 state just before, and basically the clean-up was
5 handed over to us from NRC, and then given this mix,
6 we basically had to backfit the decommissioning plant
7 into this licensee, which when you look at Ohio EPA's
8 way of doing business, they use milestones. Well,
9 that's not quite usual. You have to have the
10 decommissioning plant up front, you know, everything
11 in order. So in this case, we had to work on phases,
12 get certain commitments up front so that the process
13 could move forward. So that definitely fits a phased
14 approach.
15 In the second one the court ruled that the
16 Department of Health did not have to agree to a
17 license or renew a license to a licensee who was
18 challenging the system on a number of -- in a number
19 of ways. So the court ruled in our position that they
20 must go into decommissioning.
21 Another legacy site from the NRC,
22 certainly challenging. They are making progress.
23 They are moving forward. Currently the issue there is
24 financial assurance. We're working to a phased
25 approach, certainly not the method we'd prefer. We'd

1 prefer it all up front in advance, but they're
2 challenged by a number of different things going on,
3 and so the only thing holding up, like I said, is
4 financial assurance, and I think we're about ready to
5 move off of that issue and get to Phase 1.
6 And so this is another utility or another
7 licensee where the public is weighing in pretty
8 heavily, and so rather than us being in the preferred
9 position of dealing in matters the way we normally do
10 business, certainly these two issues I speak of bring
11 us more into the public arena and having to answer to
12 public responses and questions.
13 And although we don't mind doing it, it
14 certainly is more challenging in the process of trying
15 to get things to go forward.
16 Moving on to Types I and IIs, 1757 has
17 like seven types, and a lot of them have to go to
18 restricted release, which we do not have. So in Ohio
19 we just do four types of decommissioning. Type I is
20 sealed sources and short half-life type materials.
21 Type IIs are sealed sources that may have leaked or
22 unsealed sources.
23 But in those Type Is and IIs categories,
24 we deal with things like either facility closeout,
25 with its low or partial transfers or terminations.

1 Type IIIs are the standard decommissioning that's
2 required for unrestricted release and Type IV is for
3 possession only.
4 There's a couple of lessons. We believe
5 there are some lessons learned here, that when you're
6 talking about whether you're going into
7 decommissioning or just doing any of the Type I or
8 Type II, we have a high importance of knowing the
9 disposition of whether it's a device or radioactive
10 waste.
11 So it's really important that we know
12 where it went and that it actually got to where it was
13 supposed to go. So we require a letter of receipt
14 from the facility that actually accepted whether it's
15 a device or radioactive material so that we have that
16 confirmation, not just the licensee saying, "Yeah, it
17 went."
18 And then for terminations, the Type Is, we
19 may do confirmatory surveys, but definitely for Type
20 IIs we would in most cases actually require that we
21 get involved in some kind of confirmatory survey
22 process.
23 Type IIIs, like I said, we don't have too
24 many issues with that. We do have a closeout
25 checklist form that we've developed since becoming an

1 agreement state. It borrows a lot from 1757, but we
2 also have our own way of doing business. So we have
3 our own specific ways of closing out certain
4 licensees, and the type four would be a possession
5 only, and we discussed this yesterday in Ohio, and
6 what does that mean, and there's a couple of issues
7 with possession only.
8 There may be people who are companies or
9 corporations who are impacted by somebody else
10 contaminating them. That has happened in the State of
11 Ohio where not through any action of their own, they
12 now have some kind of contamination to deal with, and
13 so in one case they actually came to us and said, "We
14 need to be licensed. Would you license us?" which is
15 pretty unusual if not amazing. So that would be a
16 possession only in this case that we're doing to use
17 for them.
18 And so it's not for a long period of time
19 that happens to be the primary isotope is Cobalt 60.
20 So it has a half-life that can be dealt with, and
21 we'll see them through the process, but they want to
22 move their dirt and things like that, so we require
23 that they do this possession on their license, that
24 they at least survey as they move. It's all pretty
25 low level, but it's certainly there.

1 But there's that category where possession
2 only means for a certain period of time, and then we
3 expect it to be removed. It's not for perpetuity.
4 Then we have licensees in the case of
5 Shieldalloy where a possession only license will be in
6 perpetuity. It's the only case that I'm aware of --
7 maybe there's more -- but the slag actually is
8 nonporous. It's dense. So the amazing thing about
9 Shieldalloy is that the activity doesn't go down. It
10 actually goes up over T-1000 years under RESRAD.
11 The radon gases are unable to escape the
12 slag. So normally we expect activity to go down, but
13 in this case it does not, but the good thing is it's
14 not porous so it's not going to go anywhere. It's
15 just encapsulated in some slag, but that's one that's
16 going to be in perpetuity. There's just no way it can
17 get around it.
18 The next one.
19 One of the most difficult parts of site
20 decommissioning is getting an acceptable
21 decommissioning plan, and Joe hit on that earlier
22 where DCGLs are important to get those. It's
23 important to get the commitments up front. It's that
24 initial set-up of the decommissioning plan. It's
25 really the most difficult part of the whole process

1 because a lot of things stem from that, that if you
2 don't address them early, they really come back to
3 haunt you as far as being a regulator.
4 Site scoping surveys and characterizations
5 up front produce a path forward, and it's just the tip
6 of the iceberg. Often it has been said in the past
7 two days here that things tend to change as you go
8 through decommissioning. You discover; you find new
9 things.
10 But the licensee needs to be aware that
11 they need to go chase those areas that were not
12 previously identified. They need to do due diligence
13 to go find out what's the status of that. What is it?
14 Where is it?
15 And like I say, it's important to put this
16 up front so that you're not just relying on them to
17 think they know what they're doing in decommissioning,
18 but that the regulator needs to be proactive in that
19 early part to make sure those bases are covered as far
20 as what's going to be expected.
21 Proactive communication. This is pretty
22 obvious, but to be open, honest and candid is pretty
23 key with licensees. We have that same obligation.
24 You need to make yourself available for questions in
25 accommodating the licensee remediation schedule.

1 We believe that when you develop a certain
2 amount of regulator-licensee relationship that is
3 solid, that is responsible, that it cures you through
4 the challenges that can come up along the way. So you
5 need to have a good, strong base on which to deal
6 with, and we believe that in Ohio.
7 Awareness of site safety requirements. I
8 bring this up because we had a source melt at a steel
9 plant, and while that's not really decommissioning, in
10 order to recover from that we go into basically a
11 decommissioning on steroids. It's a plan that
12 stopped, that got melted, you know, cesium in their
13 vent ducts. They've got to get this thing cleaned up
14 and get it back on line.
15 And our response to that, first of all, is
16 the incident response, to respond to what they have,
17 and then the second part is to get them to get cleaned
18 up so that they can get back on line. That whole
19 process was basically a decommissioning, consolidated,
20 and we did it fairly quickly. It was ten or 20 days.
21 They'll be speaking about that at the next
22 CRCPD meeting and will have a presentation on that.
23 As far as NUREG 1757, we don't see where
24 it fits every licensee that we have. There's part of
25 it that we do apply and obviously parts that we don't.

1 When you have a relatively controlled or a small
2 licensee, a small activity going on, land use and
3 population densities, for example, don't seem to
4 really need to come into play.
5 I guess I questioned that we bring to the
6 table, you know, how much does apply and when does it
7 apply, and it's somewhat for us to determine on our
8 own, but we'd like to get feedback from that.
9 As far as 1757, some of our licensees
10 started out with the Reg. Guide DG-4006. Later as
11 things went progressively we now have some licensees
12 under 1727. We don't go back to them and say, "Well,
13 sorry. Now we have a NUREG 1757." We just keep them
14 to 1727 and move forward from that.
15 We do have some issues with piping and
16 imbedded piping surveys. They're not aptly described
17 in decommissioning plans.
18 Where we've controlled or had control of
19 our licensees in the State of Ohio, when they have
20 piping that needs to be surveyed, we require that of
21 them. When we have to negotiate with federal agencies
22 on these other sites, it's becoming an issue. Well,
23 just because it's impacted, we don't think it needs to
24 be surveyed.
25 Well, you know, it's a challenge, and I

1 don't know. We're having some significant issues as
2 far as underground piping at some sites that we have.
3 Really the last issue here is really a
4 pretty key issue. It speaks to the problem that we're
5 having with, you know, unrestricted release criteria
6 in the State of Ohio. We have NRC and DOE facilities
7 undergoing decommissioning in Ohio, and some of them
8 could restrict it and some of them could unrestrict
9 it.
10 And when you're talking about those sites
11 that are owned by others, we have no control over that
12 or say over that. But we're currently working to
13 resolve the issue of federal decommissioning sites
14 regarding restricted release leasing or transferring
15 their property to public entities in the State of
16 Ohio. So, in other words, we have a city in Ohio who
17 wants to lease property and buy property from DOE at
18 the same time that DOE is only looking for restricted
19 release.
20 So, you know, the city is now considering,
21 having to consider and were considering, but we
22 haven't made the decision yet will they be required to
23 be licensed because they have now property that's not
24 cleaned up to the State of Ohio criteria. So it's an
25 interesting issue that has now come up, and that's

1 pretty much it.

2 MR. CAMPER: Questions? Any questions?

3 MR. HONERLAH: My name is Hans Honerlah.

4 I'm with the Army Corps of Engineers.

5 And I had a question with a lot of what

6 you discussed with the restricted release,

7 unrestricted release, and going back yesterday there

8 were two breakout sessions in the morning, one on a

9 realistic scenario for modeling, and then the other on

10 restricted release or LTC, long term control,

11 licenses, possession only license I think as you call

12 them in Ohio.

13 I saw those two breakout sessions

14 completely contradictory to each other, where we have

15 one group talking about let's use a plausible scenario

16 to try to better determine what the DCGLs are in the

17 clean-up criteria, and I saw the other group talking

18 about for an unrestricted release we have to do the

19 most conservative scenario or else we need a

20 restricted release long-term control type license.

21 And I guess something for the panel

22 discussion later, I think those two breakout sessions

23 need to kind of summarize where they went and get an

24 understanding of where the other ones went because I

25 think they went in the opposite direction as I was

1 talking least night.

2 MR. HELMER: We're pretty much dealing

3 with the law that has been given us. As far as

4 statute, that's what we rely on. It's a good

5 question, and I think it needs to be explored because

6 I think there are long-term issues involved here, and

7 certainly current issues going on in the State of Ohio

8 that we need to have that answered. We need to see

9 what we're going to do about it.

10 MR. CAMPER: Stephen, thank you very much.

11 MR. HELMER: Thank you very much.

12 (Applause.)

13 MR. CAMPER: Okay. Let me make just a

14 couple of observations as we wind down this session.

15 First, I want to against thank all of the panel

16 members. As I said at the outset, each one of these

17 gentlemen has walked the talk, a lot of experience,

18 and I certainly, and I know that you did also, found

19 many of the lessons learned to be extremely

20 interesting, and they raised some very challenging

21 issues.

22 I think that there are a lot of lessons

23 learned, and I think, frankly, that they're being

24 captured in different ways. I have heard a number of

25 different efforts here, whether it be the NEI-EPRI

1 efforts or it be the Maine Yankee book on its
2 experiences or it be the work that we're doing, it be
3 the observations that Ohio has made. There's lots of
4 capturing of lessons learned going on.
5 So the challenge that comes to my mind
6 then is how do we best, as regulators and an industry
7 working together, assemble, coordinate, and impart
8 that information? How do we do that?
9 And so today and this afternoon when we're
10 talking more about lessons learned, we should scratch
11 our heads and ask ourselves that question. What might
12 we do?
13 Because in the final analysis if the
14 public is going to have the level of confidence in
15 nuclear power that I think most of us want it to have,
16 they have to see that we can license these facilities
17 successfully, they can be operated successfully, and,
18 yes, they can be cleaned up and taken away
19 successfully in a manner that adequately protects
20 public health and safety.
21 So in doing that, that challenge for us
22 then, I believe, is one of education. Assemble,
23 coordinate this information, impart this information.
24 There are a lot of challenges. I think a
25 number of interesting observations were offered about

1 challenges. A number of questions have been surfaced.
2 I notice that Chip has been over there doing his due
3 diligence, jotting down a lot of these central ideas
4 and challenges, and he'll take us into that more this
5 afternoon.
6 So, again, I want to thank the panel. I
7 want to thank all of the questions that were asked.
8 I thank you for your attention. I think it has been a
9 very good session, and I would close with the thought
10 that Commissioner Merrifield had in his comments. We
11 really have an incumbent responsibility to capture
12 these lessons learned and pass them forth to those who
13 will follow us in decommissioning facilities whether
14 it be next week or it be 20 years from now. Let's
15 work together to do that.
16 Thank you.
17 We're going to break now for lunch, right,
18 Dan?
19 MR. GILLEN: An hour and a half. Be back
20 at 1:30.
21 (Whereupon, at 12:00 noon, the meeting was
22 recessed for lunch, to reconvene at 1:30 p.m., the
23 same day.)

1 A-F-T-E-R-N-O-O-N S-E-S-S-I-O-N

2 (1:29 p.m.)

3 MR. GILLEN: Okay. We've reached the

4 portion of the two days where we're going to work our

5 way into a general facilitated discussion, and we're

6 lucky enough this afternoon to have gotten Chip

7 Cameron available from the NRC to do the facilitation.

8 Chip's title at NRC is the Special Counsel for Public

9 Liaison. It may be one of his many talents, but we

10 like to think of him as the guru of facilitation.

11 But Chip is going to lead us through this

12 process, and we kind of have it broken up into --

13 you're going to get into how you broke up the three

14 pieces?

15 MR. CHIP CAMERON: Yes, I'll explain that.

16 MR. GILLEN: Okay. So I'll just turn it

17 over to Chip. I can go out and have a doughnut or

18 something.

19 MR. CHIP CAMERON: No alcoholic beverages.

20 Good afternoon, everybody. It's a

21 pleasure to serve as your facilitator for the

22 discussions this afternoon, and I just wanted to spend

23 a couple of minutes on the process that we're going to

24 use in the schedule and some very simple ground rules.

25 Basically we broke our discussion topics.

1 We tried to provide a little structure for you, and we
2 broke our discussion into three topics. One is
3 lessons learned from the industry point of view, and
4 these are things like you heard a lot about this
5 morning: design, stakeholder involvement, planning,
6 things like that.
7 So it's not to discuss any and all
8 suggestions from the industry because some of those
9 lessons learned might be for the NRC. So we really
10 want to focus on lessons learned for the industry.
11 The second topic is going to be lessons
12 learned for the NRC, how we can improve our process,
13 and then the last topic is what Larry Camper referred
14 to as business process, Nick Orlando's three "I's,"
15 identify, immortalize, and I seem to be missing the
16 last one.
17 AUDIENCE MEMBER: Incorporate.
18 MR. CHIP CAMERON: Incorporate.
19 What process should the NRC use to make
20 information available about lessons learned, get them
21 incorporated into either the regulatory process or
22 work with the industry to see how they can be
23 incorporated into the licensee process.
24 And we're going to start with the lessons
25 learned from the industry, go from about 1:30 to 2:30,

1 and then start with the NRC around 2:30, go to 3:15,
2 take a break, come back at 3:30. If we need to
3 continue with the lessons learned for the NRC, we'll
4 do that at that time, but we'll move into the business
5 process because we really want to discuss that.
6 And granted, what is an industry lesson
7 learned or an NRC lesson learned is going to be a
8 little bit arbitrary at some point, and obviously
9 there's going to have to be cooperation between
10 industry and NRC whether it's going to be an industry
11 lessons learned or an NRC lessons learned.
12 So the important thing though is that we
13 discuss the issues. I just wanted to go through some
14 of the things that I heard this morning to at least
15 give you an idea how I took a cut at dividing things
16 up and also to stimulate your thinking.
17 And when we get to the discussion, you can
18 either pick up on something that someone said this
19 morning and talk to that or suggest something new, and
20 what I would like to do is to try to follow the
21 discussion thread. If someone brings up an idea, for
22 example, let's talk about finality, and let's keep
23 talking about that so that we can have sort of a
24 coherent discussion rather than just scattershot
25 before we move on to another topic.

1 We won't be able to beat every topic or
2 any topic to death because we want to at least have
3 some discussion on the priority ideas and when we get
4 towards the end of making a transition from, for
5 example, industry to NRC, we may just have time for me
6 to ask you is there anything that we haven't heard yet
7 this morning or today that we should put on the list
8 so that at least we have those ideas identified even
9 though we won't be able to discuss them.
10 Some of the things I heard this morning
11 were need for partial site clean-up. I put these
12 under industry, although obviously there may be
13 regulatory barriers that might need to be removed to
14 implement this. Partial site clean-up, the phased
15 approach, stages were mentioned, and Dave Culberson
16 talked about these all fit under the title of
17 flexibility.
18 Dave mentioned additional disposal
19 options. Steve Kraft talked about appropriate
20 disposal options. The issue of subsurface DCLGs was
21 brought up, and Joe brought up the idea about make
22 sure you have these early in the process before the
23 decommissioning plan.
24 Steve Kraft, surprising to all of us, the
25 need for new regulations.

(Laughter.)

MR. CHIP CAMERON: We won't forget that, Steve.

(Laughter.)

MR. CHIP CAMERON: All right, but this should be really under NRC. It was a suggestion from the industry, unless you want to do another negotiated rulemaking. We need to --

MR. ORLANDO: We broke that mold on that one 20 years ago.

MR. CHIP CAMERON: Right, right.

People talked about the importance of planning, planning decision framework, advanced planning.

A couple of people, Steve and I think Ted, the importance of good relationships with stakeholders, and that ties into the finality idea, too, as it was pointed out this morning, and there's the small "i" and capital "I" in terms of stakeholder involvement.

Employee retention plan, retain experience. Groundwater monitoring and characterization, extensive site characterization. And planning with the end in mind that you want to reach, not just planning that's going to be done in a

1 vacuum.

2 We've got one more here on the industry

3 before we go to NRC, and then I promise you we'll get

4 started on this.

5 Okay. The last couple of things were

6 safety conscious work environment, comprehensive waste

7 disposal schemes, logistical issues like weather

8 issues, things to consider.

9 Now, in terms of what I put under the NRC,

10 and of course, we shouldn't forget lessons learned for

11 NRC and agreements that may be applicable to agreement

12 states also, workshops, meetings. Obviously this is

13 going to be workshops, meetings with the industry, the

14 tabletop.

15 Side-by-side final site survey. I put

16 that under NRC. That may be one of those arbitrary

17 ones.

18 The need for finality, and we do have --

19 is Stuart Walker here? Hi, sir. We're not ready for

20 you yet, but --

21 (Laughter.)

22 MR. CHIP CAMERON: Because there are some

23 things we want to say about EPA while you're not in

24 the room. Thanks, Nick.

25 (Laughter.)

1 MR. CHIP CAMERON: But at any rate, Stuart
2 is with us, who can perhaps provide some information
3 and perspective on the EPA.
4 Consistency was brought up between NRC and
5 agreement states, but also between NRC headquarters
6 and NRC regions.
7 Early common understanding between
8 licensee and regulator. Our regulator from Ohio made
9 that point about let's make sure they know what the
10 expectations are before we get into this.
11 And I think that Joe was recommending
12 this. I was being a little facetious about Steve, but
13 Joe seemed to think there was a need for risk based
14 regulation for low concentration waste. And, Joe, are
15 you here? Was that the implication?
16 MR. NARDI: Yes.
17 MR. CHIP CAMERON: Okay, and then I think
18 that there were a number of revisions in guidance that
19 Joe also talked about, and proactive communication.
20 Someone raised the issue, I guess the
21 gentleman from the Army Corps, about there seemed to
22 be a disconnect between the modeling session and the
23 unrestricted release. So I just put that there so
24 that if we need to talk further about that we can do
25 that.

1 And in terms of --

2 AUDIENCE MEMBER: (Speaking from an

3 unmicked location.)

4 MR. CHIP CAMERON: Oh, okay, all right.

5 Well, we may want to put that on the record.

6 In terms of the business process, we heard

7 that there needs to be a way to easily identify and

8 access the information on lessons learned and perhaps

9 not just the NRC, but there was a question to Ted

10 about the community or the Citizens Advisory Panel

11 report. NRC might be a clearing house for all those

12 types of lessons learned.

13 And, again, Nick's three I's and Larry

14 referred to it as how to capture, assemble, use, and

15 something else. But at any rate, that gives you an

16 idea of what types of things we want to discuss.

17 And ground rules, very simple. If you

18 want to comment, step up to the mic. Introduce

19 yourself. Please, you know, give me a signal and

20 we'll get to you. Introduce yourself because we do

21 have Rebecca here, our court reporter. We're taking

22 a transcript. So we want to get that clearly on the

23 record on who you are, and just try to be concise so

24 that we can give everybody a chance to talk and cover

25 everything.

1 And are there any questions about format,
2 how we're going to proceed before we get into the
3 industry lessons learned?
4 (No response.)
5 MR. CHIP CAMERON: Okay. Well, who would
6 like to start us off on industry? We had a whole
7 bunch of things from the panel. Yes, sir, and please
8 tell us who you are.
9 MR. BYRNE: I'm Jim Byrne from First
10 Energy.
11 One of the things that wasn't on your
12 list, Chip, that I thought was pretty important was
13 the application, license learned in new reactors.
14 MR. CHIP CAMERON: So make sure when you
15 -- can you elaborate a little bit?
16 MR. BYRNE: Well, when you're designing a
17 new reactor, what you learn in decommissioning. You
18 learned about imbedded and buried piping. You learned
19 about the importance of coatings. You learned about
20 controlled groundwater contamination, lined fuel
21 pools. There's lots of things you picked up during
22 the decommissioning process that would make the next
23 phases, the next reactors going to decommissioning a
24 lot simpler.
25 MR. CHIP CAMERON: Okay. So that one of

1 the big values of these lessons learned is going to be
2 not only for existing facilities, but for new reactors
3 where you can perhaps incorporate some of these things
4 right at the beginning.
5 Thank you very much.
6 Anybody else want to say anything about
7 either new reactors or application of these lessons
8 learned to new facilities? Are there any particular
9 types of lessons learned that would be appropriate for
10 new reactors?
11 Yes, ma'am.
12 MS. FABIAN: Hi. Thecla Fabian from
13 NucNet.
14 I'd just like to point people that you
15 might want to look at what is being done in the fusion
16 community because I know as of even five years ago the
17 International Thermonuclear Experimental Reactor, that
18 was one of the things that they were incorporating
19 into their design process and had even run models of
20 looking at alternative designs, how you are going to
21 decommission it at the end of life.
22 So you might want to look at this
23 generation of fusion facilities and what lessons they
24 might be able to provide to the fission reactor
25 community.

1 MR. CHIP CAMERON: That's a good
2 suggestion, and indeed, there may be experiences
3 outside the nuclear area that might be important
4 lessons learned from other types of facilities.
5 Thank you.
6 Yes?
7 MR. NEWMAN: Hi. I'm Harry Newman with
8 NEXTEP Environmental.
9 I just wanted to follow up. This morning
10 I brought up a question or comment that falls in line
11 with that general line, and that was how should NRC
12 incorporate lessons learned not just for new reactors,
13 but for new licensees. For example, I wonder looking
14 around -- I don't know -- but how many people did you
15 invite from Licensing to attend this because if the
16 licensing process doesn't address somehow what we've
17 learned, I think we're going to repeat history and
18 have some of the same problems.
19 So that to me would be an important issue
20 from the standpoint of minimizing problems in the
21 future, minimizing costs, et cetera.
22 MR. CHIP CAMERON: That's a good point,
23 and you're not just talking about the licensee
24 community, but our licensing staff would benefit from
25 hearing this also. Did I pick that up?

1 MR. NEWMAN: Yes, you did pick that up.
2 Yes, thank you.
3 MR. CHIP CAMERON: All right. Any
4 comments on that point, making sure that the licensing
5 staff and new licensees know about it? Anybody have
6 a further comment?
7 Go ahead, Drew.
8 MR. PERSINKO: Drew Persinko, NRC.
9 I just want to make the point that we did
10 extend invitations through our operating reactor
11 license project managers in NRR to the operating
12 reactors that currently exist to inform them about
13 this workshop, too. So there are a number of people
14 here with operating reactors, and I was kind of trying
15 to feel who was here from an operating reactor point
16 of view, and I got a sense not too many, but everybody
17 should have known about it.
18 MR. CHIP CAMERON: And if there is anybody
19 here from operating reactors, if they do have a
20 perspective that they want to share on how much they
21 think about these types of issues now, that would be
22 interesting, I think, for people.
23 Yes?
24 MR. BACHU: When we design reactors to
25 Part 50 requirements, it states the criteria for

1 designing, but, however, I think one of the things
2 that you have to know in order to be able to design a
3 system, how it's going to be disposed of, and that at
4 this time may not be very clear. So I think for us to
5 just say that it should be part of the design of the
6 future plants may not be that practical. It may be
7 part of an application from a licensee that they
8 should address this issue.
9 And as far as licensing, I think we need
10 to have also inspection people involved in it, and
11 that may be part of the training requirements or
12 whatever needed.
13 That leads to the next question about the
14 one crane (phonetic) people in this area.
15 MR. CHIP CAMERON: Okay. You're
16 cautioning that even though this is a good idea, but
17 you're not sure how much we know at this point and
18 there might be some training and involve inspection.
19 I don't know if it's worthwhile having a
20 separate session some time, separate topic about just
21 lessons learned for new reactors and have the
22 licensing staff and inspectors there might be an idea.
23 Anybody else? Do we need to say more
24 about planning partial site clean-up, phased approach,
25 finality? Do you want to discuss the finality issue

1 now that we have I think Stuart is here of the EPA?
2 What are some of the aspects of finality?
3 Dave, do you want to say anything more about that or
4 reprise what you said this morning?
5 MR. CULBERSON: I don't think I have
6 anything at this point.
7 MR. CHIP CAMERON: All right.
8 MR. CULBERSON: Maybe Joe has.
9 MR. CHIP CAMERON: Okay. Here's Joe.
10 MR. NARDI: For the record, Joe Nardi,
11 Westinghouse.
12 One comment I was going to make is when we
13 talk about finality, we keep talking about the EPA
14 MOU, NRC-EPA MOU. If you go back in history, the
15 first thing that happened was our timeliness rule, and
16 that had the provision for finality in it. Then we
17 came to the license termination rule, and it seems to
18 me that the two are somewhat incompatible. The
19 finality that exists in the timeliness rule has been
20 taken over by the license termination rule.
21 The concept is the same, but the
22 implementation is different.
23 MR. CHIP CAMERON: And in terms of exactly
24 how the timeliness rule has been disrupted by the LTR,
25 is it because of the -- you're out of the EPA issue at

1 this point?

2 MR. NARDI: Yes, I'm out of the EPA issue

3 at this point, and I'm not speaking for Westinghouse,

4 but in many of our discussions of other facilities

5 within the fuel cycle facility forum, we had a lot of

6 discussion about getting a release for an area under

7 the timeliness rule and then finding out that that

8 release has disappeared because people start looking

9 at the license termination rule and saying, "Oh, no,

10 you really didn't get a release."

11 We refer to it as our "disappearing

12 releases."

13 MR. CHIP CAMERON: Okay, and that seems to

14 be -- perhaps that particular issue should be in the

15 NRC block about something that the NRC possibly could

16 do. And does anybody want to speak to this issue

17 about the disappearing release and how that might be

18 addressed?

19 Does anybody else want to affirm what Joe

20 said and give an example?

21 AUDIENCE MEMBER: Chip, there will be an

22 opportunity to address the same thing under the NRC

23 portion of your --

24 MR. CHIP CAMERON: Okay. Let's put that

25 in the parking lot. Okay? And we'll come back to

1 this issue. Great.

2 Yes.

3 MR. KIRK: Scott Kirk, Nuclear Fuel

4 Services.

5 I think one of the uncertainties about the

6 MOU or the NRC-EPA MOU is that there is a lot of

7 uncertainty as to when finality will actually be

8 achieved, and I think a lot of the ambiguity comes

9 from the fact that there are a couple of triggers that

10 will, I guess, initiate or will be initiated through

11 this MOU, and a lot of licensees don't quite

12 understand the CERCL process. Just because you might

13 have concentrations of radioactive materials above the

14 triggers, it's not necessarily going to score you high

15 enough to be on the MPL, or if you have radioactive

16 materials in groundwater above the NCL, that may or

17 may not trigger you to score high enough, I guess, to

18 put you on the MPL.

19 So the thought there is that maybe if we

20 had a better understanding of that process itself,

21 that might clear up a lot of licensees' concerns.

22 MR. CHIP CAMERON: Okay. Thank you.

23 And I have to apologize for getting us

24 onto finality, which I guess is something that really

25 falls in the NRC box. So we'll come back to these

1 parking lot issues and see if we can do something
2 about getting that understanding.
3 Yes, sir.
4 MR. LUX: My name is Jeff Lux. I'm with
5 Kerr-McGee.
6 I think one industry lesson learned
7 regarding finality is that both the disappearing
8 releases and the concerns that we run into because of
9 the NRC-EPA MOU, in some instances among several
10 licensees has actually resulted in deferring or
11 delaying or extending decommissioning so that finality
12 can truly be achieved rather than completing
13 decommissioning only to be for us to start again.
14 So there are industry decisions where
15 licensees are making strategic decisions as to should
16 we decommission quickly or should we actually extend
17 this so that we can settle the finality issue, and I
18 think that that concern actually runs contrary to the
19 intent of both the timeliness rule, the LTR and, in
20 fact, the MOU.
21 MR. CHIP CAMERON: Okay. So what you're
22 saying is that because of the uncertainty surrounding
23 the EPA-NRC issues, that some licensees might say,
24 "We're just going to wait to start or complete
25 decommissioning."

1 And again, I got us over on the NRC area.
2 Are you going to keep going with finality? Go ahead
3 then.
4 MR. CONANT: Well, finality, yes, but not
5 NRC.
6 MR. CHIP CAMERON: Okay, great.
7 MR. CONANT: Yeah, John Conant, ABB
8 Combustion Engineering.
9 And I think the one thing I haven't heard,
10 although I've heard it in different segments, is
11 finality is not just with the NRC-EPA. At our site,
12 we've had to really consider strongly the finality
13 with the state and local agencies.
14 I think we've gotten through that fairly
15 well in the end, but in the beginning it was more
16 difficult.
17 We have in Connecticut something called
18 the Land Transfer Act. So even if NRC releases me and
19 I do not have any issue with finality with EPA, I
20 still have to go back to the state if I want to
21 transfer, or what ultimately a lot of us are trying to
22 do is redevelop property and put it to new and better
23 use that doesn't involve license materials, and to
24 take that step, we can't have any clouds left over the
25 property. We need to deal with the state Land

1 Transfer Acts or maybe similar regulations in other
2 states.
3 MR. CHIP CAMERON: Okay, but again, it's
4 a finality from a government point of view. Let me
5 try to make a transition there. Is Ted here from
6 Maine Yankee?
7 Ted, you used the "F" word, so to speak,
8 finality, in regard to stakeholder involvement, and
9 maybe we always use the "F" word with that.
10 (Laughter.)
11 MR. CHIP CAMERON: But there's an aspect
12 of the stakeholder involvement that you thought was
13 particularly important in terms of the finality for
14 your project, and I guess what I'd like to do is see
15 if we can get some discussion of stakeholder
16 involvement if there is any for licensees.
17 But can you just repeat that or amplify on
18 what you said this morning about why it was so
19 important in terms of stakeholder involvement for you
20 to have some assurance of finality? Was it because of
21 potential litigation or what?
22 And I'm sorry. We need to have you at the
23 mic.
24 MR. FEIGENBAUM: Well, it's a little bit
25 of all of the above. We weren't as concerned about

1 any litigation as I'd say that our owners are people
2 that do business in the state and in the region.
3 They're regulated by the state. They get their rates
4 through the states. Their customers are people in the
5 communities, and they wanted to be sure that there
6 wasn't, you know, second guessing about what was
7 accomplished through the decommissioning.
8 And, you know, the governor and people in
9 the community were very anxious to redevelop the site.
10 It's a beautiful piece of property. It's probably the
11 largest piece of undeveloped tract in the mid-coast
12 area of Maine, and Maine, you know, wants to develop
13 this area, and it was important that there not be any
14 question about how clean it was or whether it was safe
15 to use the area.
16 And also the practical aspect of it is
17 that unlike some other situations, we were a company
18 that was trying to go out of business. Our only
19 liability or only reason to be in existence was to
20 finish this decommissioning and ultimately dispose of
21 the fuel. And we would be losing our talent.
22 So, I mean, if somebody raised the
23 question a year or two from now in 2007 and 2008, you
24 know, what did they do there and what was buried there
25 and was it cleaned up properly, there really wouldn't

1 be anybody left to answer those questions because, you
2 know, people go on with their lives. They retire.
3 They move on.
4 So for a lot of reasons the fact that you
5 do business there, the fact that we were going out of
6 business, the fact that the area wanted to be
7 redeveloped for a lot of good reasons, the political
8 forces wanted that to happen, and Maine is a very
9 green state. You know, there was certainly a great
10 deal of interest in making sure things were done right
11 and there wouldn't ever be any question.
12 So there was a whole series of things that
13 led us to the conclusion that, you know, we've got to
14 go beyond the standards, go beyond what might normally
15 be required, and have capital "I" involvement and make
16 sure people were very satisfied and all of the
17 questions were answered.
18 MR. CHIP CAMERON: So it's very clear that
19 one of the reasons you did the capital "I,"
20 involvement, was so that you could have some more
21 assurance of finality.
22 MR. FEIGENBAUM: That's correct.
23 MR. CHIP CAMERON: All right. How about
24 other people on stakeholder involvement, the
25 importance of that from the licensee perspective,

1 either related to the finality issue or anything else?
2 Did you want to address that?
3 MR. HONERLAH: Yeah.
4 MR. CHIP CAMERON: Good.
5 MR. HONERLAH: I just wanted to ask a
6 question or a point. Working for another federal
7 agency, not as a regulator, but as someone who
8 actually does the remedial actions and cleans up and
9 has the same issue as a lot of the commercial and the
10 licensees, I know that we've done a lot of these
11 activities. We've calculated clean-up criteria.
12 We've done the remedial action, and we typically clean
13 up to not just under what our criteria is, and we
14 never get credit for it.
15 So if our criteria is 100, you can't go
16 out there and cut it 99 with, you know, a three cubic
17 yard bucket as you're doing your excavation. So I
18 guess my question is: is there any way we as industry
19 could try to document that and say at the end or, you
20 know, when we take our final status survey samples,
21 you know, what percentage is actually remaining? I
22 mean, are we down to 25 percent, you know, of what the
23 D.C. jail was calculated?
24 And I think that information will give
25 both NRC and other state regulators because if we're

1 arguing over these numbers arbitrarily prior to even
2 implementing, we might have met both of them when
3 we're done anyway. So we're spending all of this
4 time, energy and concern and dollars up front when you
5 probably can't define the difference between, you
6 know, 100 and 99 with a backhoe. It's going to be 100
7 or it's going to be 20. And maybe that gets you down
8 to what you need to do.
9 Is it something the NRC would take on or
10 is it something that we as industry would maybe try to
11 provide to the NRC to try to document X many sites
12 across the country has performed clean-up actions and
13 these are the levels and things like that.
14 So I'm just throwing that out there.
15 MR. CHIP CAMERON: Okay. So, in other
16 words, if people more readily understood the reality,
17 that might give some added credibility to the process.
18 Larry, you seem to have an idea on this
19 one. Go ahead.
20 MR. CAMPER: Actually I wanted to -- Larry
21 Camper, NRC -- I wanted to make a comment before we
22 got too far afield from the NRC-EPA finality question
23 for a moment. Then we'll make a comment about
24 finality in general terms.
25 The gentleman who was speaking was

1 correctly pointing out that EPA has a process to score
2 sites for the NPL. Now, at some point these sites
3 that we are communicating with EPA about, EPA will
4 have to go into that process.
5 We have sent a letter to EPA thus far
6 identifying, I think, Dan, what is it, three or four
7 or five sites? Six sites that trigger values in the
8 MOU. We have not yet, as was pointed out yesterday,
9 conducted a Level I or Level II consultation.
10 But I would strongly encourage you not to
11 delay your decommissioning process wondering how that
12 will all play itself out. In fact, I would encourage
13 you to continue the decommissioning process.
14 We are going to release these sites based
15 upon our license termination rule, standard 25
16 millirems in ALARA all pathways. If those sites are
17 suitable for release with our standard, that is the
18 course of action that we would be inclined to take, as
19 Dan pointed out yesterday.
20 I would also point out to you that these
21 sites do not come as a surprise to the EPA. Our
22 project managers and their project managers have been
23 talking about these sites for years. They are quite
24 familiar with the extent of contamination and what
25 radionuclides are involved at these sites.

1 So it's not like suddenly one day EPA
2 becomes aware of this site and becomes immediately
3 alarmed about it. That is not the case, as a matter
4 of fact.
5 But the point is as we go through Level 1
6 and Level 2 consultation, EPA at some point will have
7 to bring to bear its process, score the sites and make
8 a determination as to whether there is or is not an
9 issue with those sites.
10 We look forward to those consultations.
11 We look forward to those kinds of interactions with
12 EPA and address the question of finality for those
13 sites in due course.
14 I'd also make a comment about finality in
15 general terms. Like you, I have been troubled about
16 finality for a very long time. I think it's terribly
17 confusing to the public. I think it's troubling that
18 there are different standards or different values that
19 are talked about, whether it's 15 millirem and four
20 for groundwater or 25 for us or 19 in Connecticut.
21 That sends a very confusing signal to the public about
22 numbers which we all understand are really not
23 different numbers.
24 But when I talk to utility executives or
25 I talk to companies undergoing decommissioning, I've

1 asked them this question several times. I could make
2 an argument that there's an adequate federal standard
3 governing decommissioning, license termination rule 25
4 millirem, all pathways. And I would argue that that's
5 a question of federal preemption.
6 And I've asked utility executives why do
7 you never make an issue of this? And they give me a
8 very interesting answer, and it's twofold.
9 Number one, we don't want the bad will.
10 We don't want to appear to be at odds with the state
11 or the local stakeholders, even though we know we're
12 cleaning up this site to an adequate and appropriate
13 federal standard.
14 And, number two, the fact of the matter is
15 when they do the final status surveys, they know that
16 these sites will dose out at a few millirem, a few
17 millirem, three, four, five millirem.
18 So in the final analysis, finality, while
19 it's terribly confusing and terribly disruptive to me
20 and to us as regulators, just as it is to you, in some
21 ways in the final analysis, it becomes a mute point
22 because you can get the sites cleaned to any of the
23 standards that have been introduced thus far.
24 Now, of course, I'm talking unrestricted
25 release.

1 MR. CHIP CAMERON: Okay. You know, the
2 CPA issue is such a big issue. Maybe we should just
3 discuss it, continue to discuss it and close it out.
4 Stuart, you had the comment from the gentleman back
5 there who said that if licensees had a better
6 understanding of the scoring process that it might be
7 easier to accept.
8 Now, I don't know how many other people
9 from the licensee community think that that's a
10 problem or that that might be a good solution, but do
11 you have anything that you want to say about that or
12 anything else?
13 MR. WALKER: Yes. Well, I was talking to
14 Scott during the break, and I was saying, well, there
15 seemed to be a lot of misconceptions going around.
16 Because I had listened to the latter part of
17 Commissioner Merrifield's talk, and I think he was a
18 little confused on some of the things with listing.
19 And, first of all, there is a lot of
20 variability in EPA within regions when we're cleaning
21 up sites. Our political appointees do head up each of
22 the ten regions, and the regions make site specific
23 decisions on the clean-up. They do not have to get it
24 approved by headquarters.
25 It's a little bit different story on

1 listing. Listing is basically a rulemaking. Sites
2 can be first investigated by the region, but the
3 listing package is written up by headquarters, and we
4 have to agree with it and it has to go to OMB and they
5 have to agree with it, and it goes out in the Federal
6 Register.
7 So it's not like any region just goes out
8 and just lists the site and they all list them
9 differently. They basically go through a scoring
10 process. The scoring process, we can be petitioned
11 basically by anybody at any time to score, to look at
12 a site, and we have to at least answer whether we're
13 going to do it or not, and we'll have a good reason if
14 we're not going to score right now.
15 So that means any citizen can always call
16 us up no matter what time any year and just say, "I
17 want you to look at this site. I think there's an
18 issue."
19 I mean, the fact that NRC is doing a
20 decommissioning or somebody else right now is
21 addressing the site is a pretty good reason for us not
22 to go in and do something at a certain point unless
23 there's really good reason that we think they're
24 missing the boat, which is very rare because we get
25 called in. People want us to go in where their states

1 are doing clean-up or other programs, and we often
2 have to say no to that.
3 When we do score, the concentration values
4 matter, I mean, because we do look at things like the
5 concentrations and what risks they are. We don't look
6 at what your dose limit is. Dose has nothing to do
7 with our scoring on the MPL.
8 We do look at groundwater, but a big thing
9 about scoring is it's called the national priorities
10 list. So it's basically what is a big priority for
11 EPA that we think we need to bring Superfund in.
12 So we look at not only just what are the
13 concentrations, but also who is exposed. So if there
14 are no receptors between people being exposed, even if
15 the concentrations are higher, it tends not to score.
16 So you have to look at a lot of those different
17 things.
18 I don't know if there's anything else I
19 could explain.
20 MR. CHIP CAMERON: Do you have any comment
21 on Larry's point about let's just go and try to clean
22 it up to some standard and not get too caught up in
23 terms of the difference between the EPA standard and
24 NRC?
25 MR. WALKER: Well, yes. If anyone looks

1 at the MOU or knows a little bit of the history, we
2 never would have gotten an MOU if we didn't basically
3 focus on concentrations. We calculate risk in
4 different ways than NRC calculates dose. We always
5 have, I think always will, I mean, because we're
6 basically aiming for consistency with how we calculate
7 chemical risk at a site, not how anybody else in the
8 federal government calculates dose. I mean, that's
9 not a concern for us basically.
10 We were always hoping, too, with the MOU
11 that basically it would get people to stop sitting
12 around worrying about what was going on at sites and
13 actually move forward and clean up the sites. We got
14 pulled into meetings with NRC and like congressional
15 staff a few times or people were delaying doing the
16 clean-up or they had done a clean-up, you know, ten
17 years ago at 30 millirem and they were worried we were
18 going to come in and list the site as they were
19 developing it.
20 And it was like, "Well, what
21 concentrations do you have there?"
22 "Well, there's virtually nothing left."
23 "Okay. Well, it's not going to score. So
24 what are you worried about?"
25 So concentrations are basically the key,

1 which is why the MOU is basically built around that,
2 and although we haven't gotten an official
3 notification, a Level 1 consultation, we have done
4 those notification consultations on six sites. Those
5 letters are up on the Internet. I know they're up on
6 our Website, both the incoming NRC and our outgoing
7 EPA.
8 So you can sort of see the flavor of the
9 exchange. I would pretty much anticipate all of the
10 Level 1s being about that style. Level 2 might be a
11 little bit different, but we haven't reached one of
12 those yet.
13 MR. CHIP CAMERON: Okay. Thank you.
14 Just let me check in with both of you.
15 You heard what Larry said, the EPA, and do you have
16 anything more to add on this?
17 MR. LUX: Well, actually, yes. Once
18 again, Jeff Lux with Kerr-McGee.
19 First, I do have a question for Stuart,
20 and that is does EPA not have authority to require
21 clean-up under CERCLA for sites that do not
22 necessarily rank on the MPL?
23 MR. WALKER: We could do a removal action
24 if it's really -- it's got to be pretty bad to be a
25 removal action. Also, with removal action there tends

1 not to be much of a -- we tend to focus on really bad
2 emergencies like something, a truck overturns out
3 there as opposed to a really big action removal. Just
4 because there's not as many people or there's not a
5 lot of resources there, we list sites. Basically it
6 goes through the whole scoring process and since 1995,
7 we've had a policy where we want the governor to give
8 us a concurrence letter saying they want us to list a
9 site.
10 I don't think we've gone beyond that and
11 listed any sites finally, on a final MPL without a
12 governor's concurrence letter, but there might be an
13 exception there somewhere, but if there is, it's
14 probably something that's pretty bad.
15 MR. LUX: And then my comment is that it's
16 my understanding that the NRC has developed a
17 communication plan that basically says this will be
18 the form and content of the Level 1 and Level 2
19 notification letters or at least Level 1.
20 My experience is that having two sites
21 that are both going to be included in notification
22 under the MOU, we provided the NRC a letter for each
23 site that contains specific information that we felt
24 would be germane and appropriate to tell EPA.
25 For instance, at one site we said that our

1 groundwater criteria which is above MCLs was developed
2 on both the dose basis, using NRC modeling, and on a
3 risk basis using EPA guidance, and that that clean-up
4 level was approved by the state environmental
5 regulatory agency. Because of the rigidity of the
6 NRC's communication plan, none of that information
7 could be provided in that notification -- well, it
8 wasn't exactly a notification -- in that notification
9 letter.
10 Consequently, the EPA was not provided
11 information unless it was provided verbally, which we
12 have no record of that, and yet those issues I would
13 believe would be critical to demonstrating to the EPA
14 that these levels are not only protective from a dose
15 basis in accordance with NRC's policy, but on a risk
16 basis in accordance with EPA's policies.
17 MR. CHIP CAMERON: So what you're saying
18 is that, I mean, this is a pretty big perhaps lessons
19 learned for NRC, is that the NRC communication plan
20 prevents the notification letters from having
21 information that may be pertinent to EPA.
22 I mean, does anybody from NRC want to talk
23 to that particular issue? Because communication plans
24 are supposed to be a guide rather than placing any
25 substantive restrictions.

1 Is it the NRC communication plan?
2 MR. LUX: Yes, sir.
3 MR. CHIP CAMERON: Here come Derek.
4 MR. WIDMAYER: I saw everybody looking at
5 me. So I figured I'd better come up with an answer.
6 (Laughter.)
7 MR. WIDMAYER: Derek Widmayer from NRC.
8 Thanks for teeing up this part of the
9 conversation, Jeff. I appreciate the opportunity to
10 once again excel.
11 MR. LUX: We may back-and-forth a couple
12 of times.
13 MR. WIDMAYER: It's not so much the
14 communication plan as it was the fact that we had an
15 intimate relationship with one of our commissioners
16 who helped us write the notification letter. So the
17 staff was a little sensitive in doing something
18 different than what the information was that we were
19 advised to provide the EPA by the Commissioners.
20 The fuel cycle facility forum presentation
21 this morning, there were a couple of things listed on
22 there that they would like to see changed, and I think
23 those would be easy enough to address as far as the
24 communications between EPA and NRC, but we were loath
25 to do anything that was different from the

1 standardized letter that was provided to us.

2 So I think it is a lessons learned. I'm

3 not sure, given the way that we do business, you know,

4 what actions we would take next.

5 MR. CHIP CAMERON: Well, let me ask.

6 Based on that, let me ask Larry a question. Part of

7 the business process discussion this afternoon, I

8 would imagine is what are you going to do about -- I

9 mean, this is lessons learned. It can be interpreted

10 pretty broadly as to include issues that people were

11 having problems with will issues such as this be

12 evaluated, looked at to see if there's anything that

13 can be done about them.

14 I think people might be interested in

15 knowing how you're going to handle that.

16 MR. CAMPER: Yes, in general terms. I

17 will answer the question just yes simply. We came to

18 this meeting with an open mind. We came seeking

19 input. We're hearing a lot of concern, continuing

20 concern about the EPA-NRC MOU. I know that it remains

21 an issue that's on the minds of our Commissioners. It

22 came up during our annual briefing to the Commission

23 of the waste program, for example.

24 If there are things about this process

25 that are not clear, that don't seem to be working as

1 well as they could or don't serve to enhance public
2 confidence, then those are things we ought to take a
3 look at.
4 So I'm not going to sit here and commit
5 that we'll reopen the MOU or make changes in the
6 process because clearly something like that would
7 require coordination with the Commission because we've
8 worked closely with the Commission along the way. But
9 I will tell you that we are listening. We will look
10 at these idea, and if it warrants further exploration
11 even with the Commission, we'll do that.
12 MR. CHIP CAMERON: And that's one of the
13 values of having a transcript, is that these issues
14 won't be lost.
15 Drew.
16 MR. PERSINKO: Drew Persinko, NRC.
17 Even though our letter to EPA may not have
18 included that information, Derek is in contact with
19 EPA quite often verbally, and so the information gets
20 transmitted verbally many times or also the letters
21 that are provided to NRC by licensees that contain
22 information are publicly available and oftentimes we
23 can point that out to EPA.
24 So the transfer of information still
25 occurs, although it didn't occur in our letter.

1 MR. CHIP CAMERON: Stu?

2 MR. WALKER: Yeah, I didn't want to touch
3 the communication issue within NRC. One thing I was
4 going to say just as a sidebar issue, the MOU deals
5 with concentrations based mostly on risk in the soil,
6 and the MCLs in the groundwater. The reason we went
7 with MCLs and not say a risk is because our statute in
8 our regs. basically make us use MCLs as a benchmark
9 for when we look at MPL listings. So it does have an
10 importance there that, say, a risk-based calculation
11 would not.

12 MR. CHIP CAMERON: Okay. Thank you.

13 How about other industry lessons learned?
14 Does anybody want to put a further gloss on the
15 importance of planning or when certain types of
16 information should be available before the
17 decommissioning plan?

18 We also had this retention of expertise
19 issue. Any other comments on industry lessons
20 learned? Yes, sir.

21 MR. FREDRICHS: I'm Tom Fredrichs from
22 the NRC.

23 We talked about putting decommissioning
24 into the licensing process, and when an amendment
25 comes through. But we should remember that not all

1 plant modifications require a license amendment, and
2 the industry could well put this question into the
3 50.59 process when they do their own modifications.
4 MR. CHIP CAMERON: So let's see. Explain
5 how that --
6 MR. FREDRICHS: You can modify a reactor
7 plant without a license amendment as long as it's
8 within the licensing basis; it doesn't bring up an
9 unreviewed safety question; and 10 CFR 50.59 allows a
10 plant to do that.
11 Maybe that's a question a plant should ask
12 itself. How is this going to affect our
13 decommissioning?
14 MR. CHIP CAMERON: Okay. So there are two
15 aspects of that. How is it going to affect our
16 decommissioning is the point that you were suggesting
17 that should be asked when a 50.59 is done. Okay.
18 Anybody from the power? Jim, do you want
19 to comment on that?
20 MR. SHEPHERD: Peripherally.
21 MR. CHIP CAMERON: Okay. Go ahead.
22 MR. SHEPHERD: I'm Jim Shepherd from the
23 NRC.
24 An earlier comment about conveying the
25 actual remediation level compared to the minimum

1 requirement. When I get a final status survey in, I
2 get a few dozen to a few hundred pages of three, four,
3 five column tables, and aside from the fact that all
4 of that information is readily available to the public
5 in ADAMS, many of us don't have a way to interpret
6 that. You know, it's just rows after rows, after rows
7 of numbers.
8 What I say as a regulatory is, yes, it
9 meets the criteria; no, it doesn't. If it does,
10 here's your license termination. Perhaps if that
11 information could be presented by the industry in a
12 way that is more readily perceived by other people --
13 now, I happen to be visual. You know, if we had nice
14 colored pictures, everything that's below the criteria
15 is green, and if there's any hot spots that are
16 cleared out, they come out in red or whatever.
17 There's a number of programs out there
18 that can rather readily take this column of
19 information if it's in a format that's readable by
20 those programs, which I think many of them are.
21 I've asked a couple licensees and they
22 say, "Oh, no, we can't give it to you in anything but
23 this hard copy because we have a contractor who does
24 it, and they use a proprietary program and so on."
25 We put it all into a PDF and translating

a PDF back to an ASCI file is not an easy thing to do, but I think if the industry can have their contractors do this and generate the ASCI files or even generate the 3D color figures, it could help in the communication of where we actually are at license termination rather than the regulatory statement that, yes, they met the minimum criteria.

MR. CHIP CAMERON: So you're saying it could be helpful in terms of the public understanding and, therefore, increased credibility?

MR. SHEPHERD: Yes.

MR. CHIP CAMERON: Okay. Let me ask Dave Culberson whether that's something. Is the facilities forum -- has that issue ever come up? I mean, given the fact you have to decide whether the cost beneficiality of it, have you ever talked about that as an issue?

MR. CULBERSON: Not specifically that I'm aware of. I think I can honestly say that the licensees are willing to do whatever is necessary to improve the process and get through that final stage, and I do know that a lot of presentation formats I've seen are better than others. There's a disparity across the industry. So that is perhaps an issue that we could look at. See what kind of tools are

1 available to the licensees, the resources available,
2 and typically that's at a point in the process where
3 I think a lot of licensees are at the end of their
4 budget, and it's maybe a question of economics in some
5 cases.
6 But it may be a simple fix, too, that we
7 ought to look into. It's a point well taken though.
8 MR. CHIP CAMERON: Maybe that's the type
9 of thing when you're doing planning that those are the
10 types of things you should plan for so that you don't
11 get in a bind later on.
12 Yes, sir.
13 MR. NAUGHTON: Yes, my name is Mike
14 Naughton. I'm with EPRI, and I'm going to just speak
15 for myself.
16 You've set the criteria as to what is
17 acceptable for the license to be terminated and the
18 ground to be turned over. Both there's EPA and
19 there's NRC's criteria. If you start to grade those,
20 how well did you meet it? Did it you meet it at ten
21 percent below or 20 percent below?
22 You've created another whole hierarchy of
23 evaluations, and I think that you then put
24 utilities -- well, I'm speaking from the utility
25 side -- into a competitive kind of situation. Maybe

1 someone can easily get down to ten percent. Ten
2 percent of acceptable, you're very, very, very
3 acceptable.
4 And I think that that is not appropriate,
5 and I think that that's something that personally I
6 would be not in favor of. If you meet the acceptable
7 standards, you have met them at the acceptable risk
8 for society, and I think there's nothing to be gained
9 by going to ten percent below.
10 MR. CHIP CAMERON: I mean, even if someone
11 is at ten percent below, for example, and the point is
12 that the public in other facilities are going to say,
13 "Well, why can't you do what that company did?"
14 MR. NAUGHTON: Absolutely, and that was
15 one of the things. Could you get this across the
16 country and integrate that into a matrix and show
17 people where they rank on that? When you start
18 ranking these jobs, it really obscures the complexity
19 of the job, and I think it puts you in a competition
20 that really is inappropriate.
21 MR. CHIP CAMERON: So there's a danger
22 there also. Okay. Thank you.
23 Yes, sir.
24 MR. CONANT: John Conant, ABB Combustion
25 Engineering.

1 I just wanted to ask if the NRC can accept
2 GIS styled files. A lot of those use those. Could
3 that be answered?
4 MR. CHIP CAMERON: Jim? Jim Shepherd is
5 going to answer that.
6 MR. SHEPHERD: Yes. Right now we have
7 Earthvision, NVS, and I think both of those have the
8 ability to convert.
9 What else have we got, Gary?
10 And there's conversion capability. So the
11 answer is, yes, we can in many cases.
12 MR. CONANT: And then the committee I'd
13 make is while we use that choice, we have that choice,
14 and we do use it for presentation methods, it's
15 probably not for every licensee, and there are
16 alternatives, but I will almost guarantee you that if
17 I present a pictorial rendition of a survey of my
18 site, my inspector or reviewer is going to ask for all
19 of the columns and columns and columns of data.
20 MR. CHIP CAMERON: Undoubtedly.
21 MR. CONANT: I mean, that's going to
22 happen anyway, but if you're saying that presenting
23 pictorial displays to make the first look easier,
24 yeah, that can and is being done.
25 MR. SHEPHERD: Well, for me as a reviewer

1 that would help, as well as for the public.
2 MR. CONANT: That is being done by some
3 members of the FCFF group and perhaps others.
4 MR. SHEPHERD: When we get 1,000 pages of
5 five columns and I've got 19 reactors decommissioning
6 and the longer I take the more it costs you, if I can
7 look at five pages instead of 500 pages to see where
8 the potential issue is, that's a help.
9 MR. CONANT: As a project manager, the
10 reason we have GIS is because I don't want to look at
11 those pages either.
12 MR. CHIP CAMERON: Okay. Thank you.
13 Joe.
14 MR. NARDI: Joe Nardi, Westinghouse.
15 One of the approaches I took in the DP I
16 have for the fuel fabrication plant was to say that
17 the final analysis would be a dose assessment. That
18 is allowed under NUREG 1757. So instead of looking at
19 all of the numbers and everything, take all of the
20 data and turn it into a final dose assessment.
21 You know, there's two approaches. You can
22 look at all of the numbers and compare it to the DCGL
23 or you can redo the dose and compare it to the
24 criteria, and that makes it very simple then to also
25 look at the risk for the EPA site, and it avoids some

1 of this issue of how do you graphically present the
2 data.
3 MR. CHIP CAMERON: But, again, the idea is
4 that there's a better way to present the data than the
5 typical way.
6 Anybody else want to comment on this
7 presentation of data issue?
8 MR. BYRNE: Jim Byrne from First Energy
9 again.
10 I just point out when you do a graphical
11 display, if your areas are elevated areas, when you
12 see little red marks going up above the curve, that
13 gets in the questions that, you know, I really would
14 have trouble with, and the public, asking for that
15 kind of stuff, too. And there's a lot to be said
16 about five columns worth of data.
17 MR. CHIP CAMERON: Okay.
18 (Laughter.)
19 MR. CHIP CAMERON: All right. Point well
20 taken. All righty.
21 Anything else on industry lessons learned.
22 I think we've discussed it for a number of issues.
23 Let's go over here and then we'll go over to you.
24 Yes.
25 MR. LUX: Okay. I promise this will be my

1 last time at the mic. Okay. Nobody believes me.
2 Regarding design with the end in mind, I
3 really appreciate MARLAP's approach in that MARLAP
4 does not prescribe if you're going to do
5 radioanalytical work, then you have to meet this
6 quality criteria. They say effective planning means
7 sampling, analyzing, and evaluating data with the use
8 of the data in mind. Okay?
9 Now, I want to translate that over toe
10 MARSSIM and decommissioning in saying that we utilized
11 MARSSIM to design a characterization survey, and in
12 fact, we did have the end in mind, but we did not at
13 that time have the decommissioning process in mind.
14 Consequently we spent millions of dollars
15 and collected tens of thousands of samples in an
16 effort to delineate the material that exceeded
17 decommissioning criteria. We thought we had an
18 estimate of the volume of material that would need to
19 be excavated and shipped off-site in order to comply
20 with the decommissioning criteria.
21 When we had excavated and shipped three
22 times that volume of material and came to the
23 recognition that 80 percent of the boxes that we
24 shipped had an average activity below the DCGL, we
25 kind of went back to the drawing board and said, "What

1 did we do wrong in our characterization?"

2 And I would say that the problem with our

3 characterization is that our characterization being

4 systematic sampling, scanning, and then biased

5 sampling where the scanning indicated the need is that

6 we assumed that that type of sampling strategy was

7 appropriate for the material distribution or for the

8 distribution of license material in the environmental

9 media.

10 Unfortunately it really wasn't, and we

11 didn't know that until we began excavating, and the

12 problem is when you can go into an excavation with a

13 meter that can find even a very small area that

14 exceeds the DCGL, well, then you will continue to find

15 material that must be removed, and very often those

16 veins, those zones are small enough that by the time

17 you do remove them the material you excavated is below

18 the DCGL.

19 Consequently, first of all we expended

20 significant money in an effort to thoroughly

21 delineate, and what we found is that all we really got

22 were good starting points. We could have spent a

23 quarter of the money and found all of the starting

24 points. So the characterization we were hoping would

25 yield something far more definitive than it actually

1 did.

2 So when you design your characterization

3 survey, you should design it not only with the end in

4 mind, but with the process in mind.

5 The lessons we learned is that, first of

6 all, if you're going to go into the hole with

7 instruments after you excavate, do not spend a whole

8 lot of money trying to delineate your contamination

9 very precisely. In our discussions in the fuel cycle

10 facility forum as well as with some other licensees we

11 have found that our situation is not unique. If

12 anything, it's probably typical. All right?

13 So the first thing is determine whether

14 you're going to be able to excavate based on your

15 characterization data. In that case use MARSSIM. If

16 you're going to excavate based on characterization

17 plus verification measurements, MARSSIM probably is an

18 expensive and relatively ineffective way to go.

19 The second lesson is that in your

20 decommissioning plan, you should provide for post

21 excavation segregation of hot versus not hot material

22 because shipping 80 percent of containers that are

23 below the DCGL not only costs an exorbitant amount of

24 money that could be better spent. It also fills up

25 disposal cell capacity in a hurry.

1 And then finally, seriously consider
2 utilizing the intentional mixing guidance especially
3 where you have small areas or areas of spotty
4 contamination and reserve the "dig and haul" for large
5 areas or large volume of material that is well above
6 the DCGLs.
7 Thank you.
8 MR. CHIP CAMERON: Okay. Thank you very
9 much. That sounds helpful.
10 Before we go to you, let's see if there's
11 anybody that has a comment on those three suggestions.
12 And when you say "decommissioning," don't
13 just consider the criteria but also the
14 decommissioning process, you didn't mean the
15 regulatory process. You meant the actual going in and
16 how you're going to clean up.
17 MR. LUX: That's right.
18 MR. CHIP CAMERON: Okay. Any comments on
19 that, any of those points?
20 Okay. Yes, sir.
21 MR. BACHU: I just wanted to go back to
22 the use of 50.59. Having done a fair number of
23 reviews at Three Mile Island and 50.59 review,
24 normally they are done for engineered safeguard
25 system, nuclear safety related system, more important

1 to safety system reviews. They're done by a qualified
2 person and then looked at by an independent review,
3 and they're available to NRC any time the inspector
4 goes there to whether the review had been done
5 properly or not. And the modification can be done
6 based on that.
7 As soon as the license has to either give
8 a notice that they're going to renew the license or
9 they have decided to decommission the plant and
10 they've downloaded the core, the only area that can be
11 subjected to this type of modifications unless they're
12 absolutely necessary for emergency reasons or whatever
13 the situation may be there, would be the fuel pool
14 areas and fuel assemblies and maybe going back to the
15 ISF facilities which may not be covered by 50.59.
16 There are some Part 35.23 and also other regulations
17 that allow you to make changes, minor changes.
18 What I'm trying to say is that OGC might
19 have to give an opinion on it, but the 50.59 can be
20 used in the decommissioning arena.
21 MR. CHIP CAMERON: And I just want to make
22 sure I understand this. Your point was not that issue
23 about whether 50.59 could be used in a decommissioning
24 arena. Your point was that it could be sued to plan
25 for --

1 MR. BACHU: Well, the plan was that when
2 you actually do use a 50.59 process, along with all
3 the other things you look at, include a line, how
4 will this affect decommissioning this plant after we
5 make the modification.
6 I didn't mean to imply that 50.59 could be
7 used for any particular purpose. Only when it is
8 being used include the question, how does this affect
9 decommissioning.
10 MR. CHIP CAMERON: Okay. Great, and since
11 I have my facilitator's hat on, luckily I don't have
12 to answer that particular question, and I don't know
13 what it is. I mean, I think that 50.59 could probably
14 apply in the same way, but -- used all the time.
15 Thank you, Ron.
16 That's Ron Bellamy stated that 50.59 is
17 used all the time for decommissioning activities.
18 Thank you.
19 Yeah, Chris.
20 MR. McKENNEY: Chris McKenney, NRC.
21 I just wanted to also clarify. I think
22 Tom's point is also with the fact that for 50.59 it
23 would be industry's method of trying to get at looking
24 at decommissioning early in the process while they're
25 operating, much like we discussed earlier about

1 possibly incorporating decommissioning decisions in
2 design and standard operating procedures would be to
3 incorporate now into the 50.59 process as an industry
4 standard so that they'd make those considerations way
5 before they ever get to decommissioning.
6 MR. CHIP CAMERON: Okay, great. Thanks
7 for adding that clarification, Chris.
8 Yeah.
9 MS. GOODWIN: Lynne Goodwin, Detroit
10 Edison.
11 Since we're talking 50.59, I strongly
12 believe 50.59 questions are not valid questions for
13 decommissioning. I've done hundreds of screenings
14 under 50.59 over the past couple of years, and
15 sometimes it's rather ridiculous. Sometimes it's very
16 simple. Sometimes it's difficult.
17 It's always difficult to explain it to the
18 NRC inspectors, including questions why are you doing
19 it, but we have to. We use it every day for
20 everything we do because we have to, but really there
21 are better questions that could be formed for
22 decommissioning, maybe a modification to 50.82. This
23 could be more a recommendation for the NRC as opposed
24 to trying to make 50.59 work for doing
25 decommissioning.

1 MR. CHIP CAMERON: Okay. Thanks, Lynne.
2 And I think perhaps a suggestion from the
3 NRC staff was that it's not something that you would
4 always ask yourself, but there may be opportunities
5 for some 50.59s to say, "How does this affect
6 decommissioning?"
7 But you're pointing out there may be a
8 more appropriate way to incorporate that consideration
9 of decommissioning into early planning.
10 MS. GOODWIN: I'm not talking more about
11 early planning. I'm talking about once you're doing
12 decommissioning.
13 MR. CHIP CAMERON: Oh, okay. Once you're
14 doing it.
15 MS. GOODWIN: I'm talking more about once
16 you're doing decommissioning how well does 50.59 apply
17 to the process, but it is used every day during the
18 process.
19 MR. CHIP CAMERON: Okay. Thank you for
20 that clarification.
21 Adam.
22 MR. LEVIN: Adam Levin, Exelon Generation.
23 This is with respect to using 50.59 and
24 addressing decommissioning issues for operating
25 reactors. I think the bottom line is that operating

reactors on a relatively regular basis will and do go back and assess what their estimated cost of decommissioning is, and when they do evaluate that cost for decommissioning, they do go through the process of looking at changes that have been made to the plant since the last time the estimate was performed.

So that sort of tracking it in 50.59, in my view, is not really necessary in that the next time the update is performed, you usually pick those items up.

MR. CHIP CAMERON: Okay. Thanks, Adam, for that experience from operating reactors.

Anything else on industry before we shift gears and go to NRC lessons learned?

Okay. We already have talked about the EPA, and we did have one parking lot issue, which is the disappearing release, as Joe called it. Can we have someone from -- does anybody else want to comment on that? Does anybody from the NRC want to talk about this apparent conflict between the timeliness rule and the license termination rule?

Yeah, Jim. Jim Shepherd.

MR. SHEPHERD: I don't want to answer the question and resolve it, but from the perspective of

1 what's been called source term reduction, if a
2 licensee comes in and says they want to clean up an
3 unused part of the site, the question is to what
4 criteria. If they say, "We are never going to use
5 this part of the site again," then the unrestricted
6 release criteria in Part 20 is appropriate.
7 The question that I then worry about is
8 you clean it up today; you're going to continue to
9 operate the facility for five, ten, 15 years. How do
10 we know that it's not going to be recontaminated or
11 ask it the other way When the licensee does come to
12 terminate the license, what additional requirements
13 for surveying of that area that previously has been
14 certified as clean are appropriate to require to show
15 that it has not been recontaminated?
16 The other issue is if they come in and
17 say, "We're not using this part of the site now.
18 We're going to continue to operate for a number of
19 years. Maybe we'll continue to use it in the future
20 for some other process," then we probably don't want
21 to bother to clean it up to an unrestricted release
22 limit. How do we pick a limit that is appropriate or
23 what does the licensee put into an amendment that
24 says, "Here's what I want to do to clean up this area
25 to something that right now is not in the

1 regulations"?

2 And those are more questions than answers,

3 but perhaps some people have some other insights on

4 it.

5 MR. CHIP CAMERON: Okay. Thanks for those

6 questions and good questions.

7 I guess I'm still not clear and maybe Joe

8 is about how that ties into disappearing release. So

9 I'm going to call on the expert.

10 MR. NARDI: Again, I'm not talking for

11 myself. I'm talking for stories that were brought up

12 in the fuel cycle facility forum.

13 There have been instances where portions

14 of the site have been released, taken off the license

15 under the timeliness rule provisions and now put back

16 on because it has been brought up as an LTR issue.

17 MR. CHIP CAMERON: So the portions have

18 been taken off under the timeliness rule and now

19 they're being --

20 MR. NARDI: Actually released from license

21 control, and I understand the issue that Jim brought

22 up of the need to make sure that there's no

23 recontamination of it, but that's not the real issue.

24 The real issue that we were talking about

25 in the fuel cycle is that you get the relief. You get

1 it taken off the license, and suddenly it comes back.
2 MR. CHIP CAMERON: And how does it come
3 back? It's taken off the license. How does it come
4 back?
5 MR. NARDI: I'll defer.
6 MR. CHIP CAMERON: Dave?
7 MR. CULBERSON: Dave Culberson.
8 In that case, I believe -- and correct me
9 if I'm wrong, those who may know -- I believe it came
10 back in a letter that said that the site would be
11 revisited at the end of plant life. In other words,
12 it was reattached to the license. I'm not sure if it
13 was brought back under the license, but it was
14 certainly brought back into contention later at the
15 license termination.
16 I wanted to make a comment, and I may have
17 to ramble just a bit, but I'll keep it short. The
18 50.59 process, to my understanding, is limited to the
19 power reactors. The rest of the industry doesn't have
20 that in their parts of the regulations.
21 That type of assessment that you can make
22 changes under your license that fall within some
23 safety envelope as long as you've gone through an
24 internal review is not a provision that most licensees
25 on the fuel cycle side or perhaps the material side

1 have access to.

2 Some have had that put into their license

3 through an amendment. That opens a lot of flexibility

4 to being able to do the decommissioning-like

5 activities I referred to this morning under an

6 operating license, which would allow a licensee to

7 address inadvertent spills or to respond to timeliness

8 issues.

9 But currently the timeliness rule at least

10 for fuel cycle facilities triggers a notification and

11 an action, and the only recourse right now is to get

12 a license amendment or to go into a decommissioning

13 type approach. And quite often it's called

14 decommissioning even if it's a building or a portion

15 of a site when, in fact, the desire may be simply to

16 remove the source term to some acceptable level for

17 the duration of operations or to reuse that portion of

18 the site and get on with licensed activities.

19 And that mechanism is not a clear or

20 smooth process. Some licensees have been successful

21 at doing that. Some have actually desired to remove

22 portions of their site from their license, and they've

23 gone down that path, and that is a decommissioning

24 activity, but for those that have existing operating

25 sites that have a boundary that they operate within,

1 a physical boundary, and they want to clean up a
2 portion of the site, currently the mechanism seems to
3 be through a decommissioning type action, and that has
4 a very defined process, you know, methods for
5 characterization, understanding of the data, the
6 extent of contamination, and a clean-up target that
7 you would clean up to, and that is typically a
8 decommissioning type clean-up level unless something
9 else is agreed to.
10 That's part of the problem that we face
11 and part of the issue associated with partial site
12 releases or the source term removal. There's not a
13 clear path forward in the regulatory realm that we're
14 aware of.
15 MR. CHIP CAMERON: So that's something
16 that I think -- Dan, are you hearing this? -- that
17 there may be some better --
18 MR. GILLEN: I heard it at the fuel cycle
19 facilities forum.
20 (Laughter.)
21 MR. CHIP CAMERON: Nick?
22 MR. ORLANDO: Yeah, Nick Orlando, NRC.
23 I think the issue that Joe raised and the
24 issue that Dave raised, they're related, but they're
25 two different issues. Joe's issue, as I understand it

1 is that under the timeliness rule, you're required if
2 you haven't used a particular outdoor area or separate
3 building, within two years you have to begin
4 decommissioning.
5 When you go to terminate the license, you
6 have to consider all of the site when you're doing
7 your dose assessment. So that's why the previously
8 remediated piece comes back on the license.
9 Well, that also would apply for the dose
10 modeling if you had partial site releases, and I think
11 that's the issue that Joe's got. I think he left, but
12 I mean right now we're not requiring licensees to
13 relicense previous released or previously cleaned up
14 areas. What we are requiring is that the dose
15 assessment that's done for the site include all
16 radioactive material that was used on the site when it
17 was the largest piece that it ever was.
18 Now, I agree with Dave. I think that
19 there needs to be some mechanism by which licensees
20 can do source reduction during operations and prior to
21 decommissioning. That's sort of a separate issue. We
22 need to probably meet and think about that because we
23 have NEPA issues associated with that, and other
24 issues associated with that.
25 But I think the problem with the

1 disappearing releases is really not that we're
2 requiring licensees to relicense pieces of property,
3 but what we're requiring them to do is to consider the
4 dose contribution from those previously releases when
5 they do their license termination request.
6 And that kind of falls in line with the
7 approach that was taken under 50.83 where you couldn't
8 do checkerboard partial site releases in order to get
9 to the point where you had one small area that you
10 said, "Well, this is 25 millirem."
11 No, it's everything that was ever licensed
12 goes into that dose calculation.
13 MR. CHIP CAMERON: Okay. Thanks, Nick.
14 That was very helpful not only to distinguish between
15 the two areas, but also to explain how that partial
16 clean-up has to come in and be considered in the
17 context of the decommissioning of the whole site.
18 Yes.
19 MR. NEWMAN: Harry Newman, NEXTEP
20 Environment.
21 To clarify that a little bit more, I think
22 some of the reappearing areas have to deal with or the
23 reappearing license issues have to deal with the fact
24 that there were some sites that had their D plans
25 approved under the grandfathering, and at least the

1 ones that I'm familiar with. They were grandfathered,
2 and they also had areas of the site released prior to
3 LTR. Okay?
4 Now, the issue is these sites have a
5 concentration based criteria. It is not dose based,
6 and the LTR process has been implemented for these
7 sites in a way that the NRC has come back and said
8 basically, "We're not going to terminate a license
9 without you demonstrating that you also meet a dose
10 criterion."
11 So these sites, I think what Joe is
12 referring to is, okay, they already had these areas
13 released under a concentration based criteria. Now
14 all of a sudden they have to prove that they also meet
15 the dose criteria. In essence it is a reappearing of
16 an issue that these facilities probably thought was a
17 dead issue, that they weren't going to have to
18 address.
19 MR. CHIP CAMERON: And I guess I'd just
20 comment that that seems like that's consistent with
21 what Nick was saying about when you come back to look
22 at the whole site you need to look at the contribution
23 and since we're talking about dose in those
24 situations, you get caught in that.
25 MR. NEWMAN: Yeah, it's something that I

1 don't think was anticipated either by NRC at the time
2 the LTR was issued, at least to my knowledge, and
3 certainly not by the licensees that I'm familiar with.
4 With respect to 50.59, a brief comment.
5 The process as you all know, it does deal with
6 reactors. However, it has been successfully
7 implemented for fuel cycle facilities, and it has
8 resulted in a very effective process to my knowledge
9 in terms of being able to make changes to the
10 decommissioning plants for these facilities and to
11 things like radiation protection plans.
12 I would all it a 50.59-like process. It's
13 not identical, but it's similar, and the process
14 itself in the cases that I'm familiar with has been
15 put forth as a license conditions. But it has been a
16 very effective tool in terms of decommissioning and
17 allowing things to move forward without having to go
18 through the regulatory approval process, which can
19 take many months.
20 MR. CHIP CAMERON: So that's an example of
21 50.59 being -- something similar to that being
22 incorporated into the license for fuel cycle. Dave,
23 is it still your opinion that it would be better to
24 have something generic rather than to leave it to
25 license conditions, just so Dan and company are clear

1 on what you think there is a need for?

2 MR. CULBERSON: I personally -- this is

3 Dave Culberson -- I think there's a need for the

4 flexibility, the ability to follow a 50.59 kind of

5 approach, and I am familiar with some licensees that

6 have that in their license as license conditions, and

7 it does seem to work.

8 It could be done on an individual licensee

9 basis with a modification of the license or on a

10 generic basis. I think the effect would be the same.

11 It would enable them to make changes on the fly with

12 all of the appropriate internal approvals and reviews

13 without having to go back for regulatory approval.

14 MR. CHIP CAMERON: Okay. Well, then I

15 think for those licensees who think it's desirable,

16 then there is an NRC process that exists to consider

17 that type of license conditions rather than do a

18 rulemaking.

19 Yes.

20 MR. BECKER: Chris Becker, University of

21 Michigan.

22 I have two points. The first one is in

23 the improvement process which actually started this

24 whole thing off, if I remember in the SECYs, are you

25 guys looking at revising the inspection procedure with

1 respect to decommissioning, with respect to the
2 paragraph in Part 20 which requires licensees to take
3 actions to minimize decommissioning in the future?
4 I probably have got the wording of that
5 Part 20 paragraph incorrect, but if I remember, there
6 was some mention of that either in all the things in
7 the SECYs or in the stuff associated -- I'm getting a
8 yes on the far side.
9 You are revisiting that inspection
10 procedure or --
11 MR. WIDMAYER: The wording is good enough.
12 MR. BECKER: You are revise --
13 MR. WIDMAYER: If I understand your
14 question, I'm not answering the question.
15 MR. CHIP CAMERON: Yeah, and so we're not
16 going to worry about that being on the record right
17 now. Derek may want to come up and give a formal
18 answer or someone else, but you have a specific
19 question.
20 MR. BECKER: The question is: are those
21 inspection procedures as part of this improvement
22 process going to be revised?
23 MR. CHIP CAMERON: Do we have -- I don't
24 know if Blair. Jim, do you know?
25 MR. SHEPHERD: Yeah, this is Jim Shepherd.

1 We are going to review the inspection
2 procedures to determine if they can be improved.
3 MR. BECKER: And the other question is
4 with respect to 50.59, it changed about four years
5 ago, and there's two people from NEI. A 50.59 process
6 has only to do with one thing: right of approval.
7 When they revised the reg., safety evaluation was
8 taken completely out of it. It only has to do with
9 right of approval, whether the licensee has the right
10 to make the approval or whether they have to go to the
11 Commission.
12 And it has nothing to do with safety nor
13 decommissioning. Okay? It's only who can approve it.
14 That's the only place it comes in.
15 MR. CHIP CAMERON: Any response to that
16 from NRC or on the inspection procedures?
17 MR. FREDRICHS: I think I've been somewhat
18 misunderstood in bringing up 50.59 in the first place.
19 (Laughter.)
20 MR. CHIP CAMERON: And just give us your
21 name again for the record.
22 MR. FREDRICHS: Tom Fredrichs.
23 MR. CHIP CAMERON: And I'm sure you're
24 going ot have a lot of help on this.
25 MR. FREDRICHS: There's an endless amount

1 we could say about it. All I meant to imply was this
2 is a way that reactors look at changes they're going
3 to make for whatever reason, under any criteria, and
4 I don't want to discuss those.
5 I'm only suggesting that if you are going
6 to look at a modification, and you already have a
7 50.59 process, you can ask your question about
8 decommissioning in that process.
9 You don't have to ask that question. I
10 mean, some plants may already ask that. It's just a
11 method to try to look ahead into the future, as Chris
12 McKenney was saying earlier. It's just a way you
13 could use, if you wanted to, and you don't have to, to
14 look ahead to decommissioning when you make a
15 modification of the plant.
16 That's all I meant to imply, and all of
17 the rest, well, hopefully that expresses what I meant
18 to say.
19 MR. CHIP CAMERON: Well, i think you've
20 heard some affirmation from the licensee community
21 that 50.59 or a similar process would be useful. So
22 I think you can sleep tonight.
23 (Laughter.)
24 MR. CHIP CAMERON: Drew.
25 MR. PERSINKO: Drew Persinko, NRC.

1 I'm a little confused about the question
2 about it has nothing to do with safety. Fifty, fifty-
3 nine is an evaluation that a licensee goes through to
4 determine whether or not you're introducing an
5 unreviewed safety question into the facility or not.
6 MR. BECKER: The unreviewed safety
7 question was removed from the definition.
8 MR. PERSINKO: Yes, it was, but they
9 changed the wording to say if the change as described
10 in the FSAR. So they were clear still to add the
11 words that we're referring to the FSAR, and there was
12 a whole big rulemaking going on and a lot of guidance
13 that went along with it, but it still refers to the
14 approval process, and it does still relate to safety.
15 It's not like safety is completely eliminated from the
16 question.
17 I don't understand why you say safety is
18 removed now. They were just trying to be clear about
19 it because there was a lot of confusion about the
20 seven questions you had to go through in order to
21 determine whether you had an unreviewed safety
22 question.
23 MR. CHIP CAMERON: Okay. Thanks.
24 And when we're off line, you may want to
25 talk more about that so that it is clear in case

1 there's still an ambiguity on that one.

2 How about this issue of consistency that

3 was raised as a point for the NRC? How to achieve

4 consistency between NRC and agreement statements, how

5 to achieve consistency between NRC and regions.

6 And I know as most of you know, there is

7 a whole policy and philosophy behind when agreement

8 states need to be uniformly consistent with NRC

9 regulations and when they have some latitude to do

10 things differently.

11 And the gentleman from Ohio talked about

12 their decommissioning regime does not allow for any

13 type of restricted release.

14 How big a problem is this? And is it a

15 problem because it's a dysfunctionality, so to speak,

16 or is it just that you're going to have different

17 regulations in different places because of the needs

18 or the context of that particular state?

19 Anybody want to comment on this

20 consistency issue?

21 Dave, was this one of yours that you

22 raised? And do you see a problem? I'm trying to

23 figure out how big the disparity is between NRC

24 headquarters and NRC regional offices. Is that a big

25 problem?

1 Maybe you could give us an idea of what
2 the scope or what you think the extent of the problem
3 -- how big a problem it is.
4 MR. CULBERSON: Dave Culberson again.
5 It's a tough one to answer because my
6 experience and our experience has been that each site
7 has its own challenges, I think. Some sites deal
8 with, you know, the headquarters for the
9 decommissioning. Some deal with the regions. Some
10 deal with both. Some deal with agreement states and
11 headquarters. Some deal with states. Most deal with
12 states in addition to the NRC.
13 You've got this broad basis of regulatory
14 requirements and regulatory entities that you have to
15 appease, and it's really very site specific. There
16 have been some sites that have had challenges and some
17 that have had great successes. It's just that it
18 doesn't seem to be consistent across the board.
19 I don't know what the fix is. I don't
20 know if there is a fix. I think it's individuals that
21 are involved in many cases, personality issues
22 sometimes, and it's cultural issues, where you happen
23 to be in the country, what state you happen to be in.
24 I think all of these roll into defining an issue that
25 is a challenging one, and I don't know if there is a

1 fix. I don't know how to fix it if there is one, but
2 it's something that needs attention, I think, or
3 consideration.
4 We have recently had some licensees that
5 have had some surprises late in the process that just
6 about derailed the process. They got it back on the
7 track, but it's something that was unpredictable at
8 the time. I mean, they went in fully aware, full eyes
9 wide open and still had challenges late in the process
10 that they weren't anticipating.
11 I think that's all we're trying to say.
12 MR. CHIP CAMERON: Okay, and, Dave, Dan is
13 going to talk to this. You all have heard Dave's
14 characterization of the problem and his question about
15 is there anything that we can do about this. If
16 anybody has some suggestions along those lines, I
17 think we'd be glad to hear them.
18 Dan.
19 MR. GILLEN: Dan Gillen, NRC.
20 And I don't have a magic fix, but I speak
21 a little bit to first the consistency within the NRC
22 and then, of course, some of my discussion and would
23 roll over into the issue of consistency between the
24 NRC and other regulatory bodies, which as we talked
25 earlier -- and I think this was a discussion. Was it

1 in the round table discussion yesterday that you
2 talked about this? Was that one of the issues, Drew,
3 or not? No?
4 Okay. In any case, it was an issue that
5 was raised in the SRM after the annual briefing to the
6 NRC at least as far as consistency with states, and so
7 it's something that we will have to address come this
8 October when, again, we give our annual briefing, and
9 we're working towards some thoughts there, but first
10 let me get back to consistency within the NRC, and a
11 couple of points.
12 One is that things are going to occur
13 probably which are unavoidable. It may point to some
14 inconsistency. However, there are a couple of things
15 we're doing. Communication is a big thing. I mean,
16 we are working now with our regions very closely in
17 the decommissioning program. We have monthly meetings
18 that we hold where all of the regions are involved on
19 the phone. It's called our decommissioning board
20 meeting.
21 We have coming up in May, we have a
22 meeting in Region III, which is our counterparts
23 meeting where we gather with all of the regional
24 involved, which in this case is only I, III, and IV.
25 Region II does not have any decommissioning

1 activities.

2 And we discuss issues. And it's these

3 kind of communications that help to do away with

4 examples of inconsistencies.

5 Another thing, and this is not necessarily

6 a result of us observing inconsistencies. It's just

7 a fact of life, and that's that we at headquarters are

8 the experts in technical review. The regions are the

9 experts in inspection, and for whatever reason done in

10 the past, there are some project management activities

11 that the regions are doing in complex material sites,

12 not reactors. We have all of the reactors at

13 headquarters and they've done a good job, and they are

14 close to some of the sites and because of that, they

15 do a good job.

16 But we would like to have the technical

17 reviews consistently in house, and they would come to

18 us generally in assets. And because of that, we're

19 closer to our technical reviewers, and we ask that if

20 new sites appear on the board that have complexities

21 requiring a decommissioning plan which elevates them

22 in our mind to a complex material site, the regions

23 will be transferring those sites to headquarters so

24 that in the end -- and we're getting very close to

25 that. The Region I and III and IV do outstanding jobs

1 of getting sites off the list and helping my numbers
2 this year.
3 But eventually they're going to work
4 themselves back into just primarily inspection and
5 that we will have all of the reviews and project
6 management of these complex sites.
7 And it's the communication that I consider
8 as being a tie-over to how we're dealing with other
9 federal agencies, too. We need to communicate more.
10 I think that's the primary means, and we're never
11 going to be able to magically waive a hand and say,
12 "Okay. There's no more dual activity involved, but
13 the communication is what we can do to help ease the
14 pain."
15 MR. CHIP CAMERON: Okay. Thank you.
16 Some efforts that are ongoing to try to
17 insure that there is consistency.
18 Ron.
19 MR. BELLAMY: I'm Ron Bellamy from the
20 NRC's Region I office.
21 And let me give the regional perspective
22 now that we've heard the headquarters perspective, and
23 I would suggest that the proper term isn't
24 inconsistencies, and I really hate to use the term
25 "personality differences." I think it's differences

1 in individual work interests, let's say.

2 When you get an inspector at the site, the

3 same inspector can go out or two different inspectors

4 can go out with the same inspection procedure.

5 They're going to look at different issues. They're

6 going to have different individual interests. They're

7 going to have different areas of expertise, and that's

8 what they're going to emphasize.

9 And I think that's really what you're

10 seeing vice inconsistencies. As Dan said, I think we

11 do an outstanding job in trying to be consistent among

12 our implementation policy, the way we do our

13 inspections and how we get those results to you as the

14 licensees, but you're going to always see differences

15 because of the differences in people.

16 And I just cringed a little bit when you

17 used the term "personality differences" because we've

18 had some personality clashes, and I hope that's not

19 what you're referring to because we're trying to keep

20 them down in the noise region.

21 Dan's comment about communication. I

22 think it's important to realize that even for these

23 sites that we're going to transfer back to

24 headquarters, there's still going to be a regional

25 contact, and that regional contact is going to be in

1 close cooperation, coordination, and communication
2 with Dan's project manager.
3 So we're still going to try to be as
4 consistent as possible as we go through the process
5 here, and it's really just a matter of who's got the
6 overall project management responsibility for the
7 site. We're still going to do the inspections even
8 for those that we transfer back. So you're going to
9 see the same inspector at the site that in the past
10 might have been the designated NRC project manager.
11 Now, the project managership will be under Dan's
12 group, but you're still going to get the same
13 inspector come out and do what he thinks is important.
14 And as Blair and as Jim Cameron in Region
15 III will agree with me, there are differences in how
16 we implement the inspection procedures. Those come up
17 every time we get together at our counterpart
18 meetings, and we're trying to keep them down as much
19 as possible, but I think you're always going to have
20 them.
21 MR. CHIP CAMERON: And the decommissioning
22 area, it doesn't have a corner on the marketplace on
23 the fact that individual inspectors are going to have
24 different interests or areas of expertise and perhaps
25 do it differently than someone else.

1 Derek.

2 MR. WIDMAYER: Derek Widmayer, NRC.

3 The subject of inconsistency with
4 agreement states, that was part of my presentation
5 yesterday, and as Dan pointed out, we have monthly D-
6 board meetings with the region. One of the things
7 that the staff is going to evaluate is more periodic
8 communications with the agreement states. It could be
9 monthly telephone calls or something like that.

10 They already have periodic phone calls
11 between our Office of State and Tribal Programs. We
12 could add decommissioning as a specific subject that's
13 addressed in those phone calls.

14 So there's a bunch of ways already that we
15 could implement the same kind of initiatives to try to
16 get more consistency with the states.

17 MR. CHIP CAMERON: Okay. Thanks, Derek.

18 So there's some efforts being made there,
19 and let's go to Robert Johnson, and then we have a
20 comment here. And did you want to say something? No.

21 Robert.

22 MR. JOHNSON: Robert Johnson from NRC.

23 Chip, I just wanted to address the comment
24 on possible inconsistency with the State of Ohio and
25 restricted release. If Steve was here, he would

1 probably be able to add his point. I'll try to
2 capture what I think he might say. We talked about it
3 a fair amount in our breakout yesterday.
4 I think that the State of Ohio's approach
5 is just they have a more narrow, more preferred
6 approach for doing restricted use. They just don't
7 want to have restricted release and terminate the
8 license, hand it over to some other entity. They want
9 to maintain the control under their possession only
10 license.
11 Now, as a matter of fact, we're even more
12 consistent because part of our long-term control
13 license is based on some of their experience there.
14 Where we're a little different is that our graded
15 approach will accept other methods. It's more
16 flexible. It's not just long-term control license,
17 but it could be deed restrictions and it could be
18 release from licensing if that were to work.
19 You know, so we're broader. We have more
20 flexibility. We have more tools. They haven't worked
21 yet, and so we've actually gone and become a little
22 more consistent, I think, with Ohio in at least
23 proposing and approving this long-term control license
24 concept.
25 And just for the record, the Commission,

1 when Ohio became an agreement state, and when the
2 Commission approved them, they approved their
3 possession only license approach for restricting use.
4 MR. CHIP CAMERON: Thank you, Robert.
5 Thank you very much.
6 Yes.
7 MR. BACHU: I'm going to only address the
8 part of the agreement states that we enter agreements
9 into. They have two areas, one where they do -- NRC
10 has excluded jurisdiction, areas that are production
11 facilities and that nature, and then we enter into
12 agreement under the act into 11(e) and type of
13 materials.
14 And there have been problems where the
15 states tried to pass statutes to be able to regulate
16 reactors, and that's why the Section 274 came into
17 being.
18 And we have had problems initially when we
19 enter into agreements to see if there are any statutes
20 that the state has passed that would impact the
21 exclusive areas of NRC jurisdiction, and it's very
22 difficult sometimes to progress, and one of the ways
23 that the Congress in some areas has given the
24 authority to NRC; in some ways it has directed the
25 Commission to make sure that those areas are protected

1 and kept within the jurisdiction of NRC.

2 It becomes sometimes difficult, but we are

3 working in a very cooperative way in that area to

4 resolve those issues, but then there is a gap of three

5 years between when the states are required to be

6 compatible with NRC regulations, and then there's also

7 a degree of compatibility as you mentioned before, and

8 those sometimes lead to some issue.

9 Having said that, then states seem to have

10 some problems, sometimes have enough money to pass

11 some regulations in time or they don't wish to go

12 along with some of the regulations that are passed.

13 So there are two interfaces. One is of an

14 agreement type, which is a contractual arrangement,

15 and then there is the issue that is the NRC

16 jurisdiction which they are required to be compatible

17 with, and we are trying to work this in a very

18 collegial and a corporate manner to resolve some of

19 the differences when there are two different types of

20 regulations that exist.

21 MR. CHIP CAMERON: Okay. Thank you for

22 that review of the statutory history on that.

23 Why don't we take a 15-minute break? And

24 then we'll come back and see if there's any further

25 NRC issues. In fact, I want to ask the NRC staff

1 whether there's anything that they want to ask the
2 industry about could we do this, could we do that.
3 Maybe you don't have anything, but I want to make sure
4 you have the opportunity.
5 I have about 3:15. Why don't we come back
6 at 3:30-ish?
7 (Whereupon, the foregoing matter went off
8 the record at 3:17 p.m. and went back on
9 the record at 3:36 p.m.)
10 MR. CHIP CAMERON: Okay. If we could get
11 started with the remainder of the session.
12 We've been covering a lot of a ground, a
13 number of issues, and I just want to make sure that
14 the issues that you're concerned about are being
15 raised and are being discussed. I asked Dan to just
16 give us an idea if there's anything that you would
17 like to get further from the people here, but also is
18 there an issue, a burning issue out there that we
19 haven't discussed, that hasn't gotten enough air time?
20 I mean, please raise those issues, and I
21 think I know one that is going to be raised.
22 Dan.
23 MR. GILLEN: Yeah. I know Tom Nicholson
24 from our Research Office has something he wants to
25 raise, but I think I don't have anything more at this

1 point in time I want to add. We've got a lot of work
2 ahead of us with, you know, the material we're working
3 with already.
4 But I did want to mention that, you know,
5 I' hearing a number of issues, and some of the issues
6 that are being raised are good issues that I need to
7 think about hard, and this may be the inconsistency
8 issue, things like that.
9 They're good issues, but they're not
10 necessarily just supposed to be at these kind of
11 workshops which we have maybe once every few years
12 raised to us at this time. You know, it's the
13 communication thing. If you have an issue out there
14 that you're experiencing, you know, Nick Orlando
15 pointed to me on the break that the four key
16 decommissioning people are here: myself and the three
17 branch chiefs from the three regions that have
18 decommissioning sites.
19 You know, you know the phone numbers for
20 all four of us. You pick up the phone. You can call.
21 You can raise the issues to us then. We can get
22 involved in those issues as soon as you experience
23 them as opposed to waiting to hear them either in a
24 forum like this or when I attend, you know, another
25 meeting at some other site.

1 That's all I wanted to say.

2 MR. CHIP CAMERON: And so, you know,

3 that's one of the issues that was lessons learned, was

4 being proactive. We always love to use that word, but

5 I think we all know what it means.

6 If there's suggestions from all of you, I

7 mean, Dan gave you a suggestion. Pick up the phone

8 and call them if there's a problem. If there's any

9 suggestions about how the NRC can be more proactive,

10 Dave Culberson gave us some examples, but if there's

11 anything specific that you want to put on the plate

12 now for lessons learned, slash, suggested

13 improvements, please do so. I mean, this is your

14 meeting. So we want to discuss what you have concerns

15 about.

16 Ron, do you want to add something?

17 MR. BELLAMY: Yeah, this is Ron Bellamy.

18 I guess maybe a question for the industry

19 would be: is there any question on who their contacts

20 are with the NRC?

21 You know, Dan got a little bit, and I hope

22 I clarified it, that you know, there are project

23 managers, and some of those project managers are in

24 headquarters and some of them are in the regions, but

25 for every site there is a designated regional

1 inspector, and if there's ever a question about who to
2 call with an issue, you know, call somebody and let us
3 know about it.
4 What we've worked out and has worked very
5 well is if there's an event that is not reportable, a
6 lot of times licensees will still call and let me know
7 about it personally, and I've gotten a lot of calls on
8 the weekends, at nights saying, "Hey, you know, we
9 just wanted you to know that this happened. It's not
10 reportable. There may be some press interest, but
11 we're letting you know about it in advance."
12 And the licensing staff know who to call.
13 I mean, John knows who to call. Dave knows who to
14 call. But what we've done particularly at our
15 decommissioning reactors is to make sure that the
16 control room operators -- they're really spent fuel
17 operators now -- they know who to call.
18 I mean, I'll get calls at home from the
19 control room/spent fuel operator Haddam Neck who says,
20 "You know, this is a courtesy call." And I think
21 those courtesy calls are great.
22 So if somebody disagrees please let me
23 know, or again, if there's any question about who to
24 call or who your contact is, speaking for myself and
25 my region, I have no problems in getting a call any

time of the day or night from any of my licensees, and I know my inspectors are the same, and I'm going to look to Jim and Blair to shake their head up and down yes that it's the same for those regions.

So I talked them into that. That was pretty slick of me.

MR. CHIP CAMERON: I'm not sure I saw Blair shaking his head.

MR. BELLAMY: Yeah, he did.

(Laughter.)

MR. SPITZBERG: The 4:00 a.m. calls can wait until 7:30. It depends on the circumstances.

MR. CHIP CAMERON: Right.

MR. BELLAMY: So, you know, Dan is right. The communication is key, and keep us posted on what's going on and we can work through all of these things together.

MR. CHIP CAMERON: Okay. Thank you, Ron.

Dave and then Tom. Dave.

MR. CULBERSON: Dave Culberson.

One quick clarification. I mistakenly said that the fuel cycle material licensees don't have access to a 50.59 approach. I found out during the break that we do. There's 70.72. Andy was instrumental in implementing that particular change,

1 not structured exactly like 50.59, but the intent
2 apparently is the same, and 70.72 apparently allows
3 material licensees to make the types of changes that
4 50.59 did.
5 I've been out of the licensing realm for
6 long enough to know that or not know that. My
7 experience was that it requires specific license
8 amendments. So I just wanted to clarify.
9 MR. CHIP CAMERON: Thank you, Dave.
10 Tom.
11 MR. NICHOLSON: I'm Tom Nicholson, Office
12 of Research.
13 Yesterday during Breakout Session 3, Jim
14 Shepherd brought up some interesting points with
15 regard to operational monitoring, the need perhaps to
16 have groundwater monitoring sufficient so that it
17 becomes a very valuable technical basis when you do
18 your analysis during decommissioning.
19 The question is how proactive should the
20 NRC be in providing guidance and recommendations on
21 monitoring of groundwater flow systems at your sites.
22 And then, more importantly, how to couple
23 that monitoring information with the groundwater
24 modeling that would feed into a dose assessment.
25 What are your thoughts, especially with

1 regard to lessons learned? We understand that EPRI is
2 writing a document that they hope to release on this
3 topic of groundwater contamination and monitoring and
4 what kind of lessons learned are coming from the
5 various decommissioning sites.
6 MR. CHIP CAMERON: Thanks, Tom.
7 And this was mentioned by Steve Kraft and
8 some other people today, I think.
9 How about the need for some assistance
10 from the NRC on groundwater monitoring and perhaps
11 modeling? Did you want to comment on that?
12 AUDIENCE MEMBER: No.
13 MR. CHIP CAMERON: You have another one?
14 Okay. We'll be right with you.
15 MR. BYRNE: This is Jim Byrne from First
16 Energy again.
17 At the Saxton site, we thought we had a
18 pretty good groundwater monitoring system there, but
19 of course, it wasn't good enough for the NRC and
20 license termination space. So we had to go through a
21 couple rounds of issues with the NRC to solve that
22 problem.
23 You know, I think most operating plants
24 have a groundwater monitoring system. Whether it's
25 going to work for decommissioning, that's up in the

1 air. I don't think Connecticut Yankee's was
2 sufficient. I'm not positive on that, but tell them
3 they have that big plume out there, or Yankee Rowe.
4 I think these guys are gone now, but it's an important
5 thing to know.
6 What's in the groundwater. Saxton wasn't
7 anything anyway, and it took us a lot of money to
8 prove there wasn't anything in the groundwater, but
9 you know, groundwater modeling is an important part of
10 the license termination process.
11 MR. CHIP CAMERON: Well, do you think that
12 there's a need for the NRC to do something in this
13 area, something that would be helpful to the license
14 community?
15 MR. BYRNE: Well, I think the NRC as
16 pointed out in one of their lessons learned for
17 decommissioning is is the operation of groundwater
18 monitoring systems not sufficient for decommissioning.
19 Whether the operating plants pick up on that or not,
20 that's another story.
21 MR. CHIP CAMERON: Okay. Anybody else?
22 Yeah, please.
23 MR. HORIN: Bill Horin with Winston &
24 Strawn.
25 On this point, and I think probably

1 following up on what Steve mentioned this morning, I
2 don't think that operating plants would -- and I've
3 worked with many of them -- would want to have the NRC
4 impose some requirement, but I think there would
5 certainly be an opportunity as part of the results of
6 this conference or as part of the LTP lessons learned,
7 you know, to point out that this may be something that
8 would be of benefit, but not suggest that, you know,
9 there be some requirement.
10 I mean, there's already in 50.75 a
11 requirement to maintain records of spills and that
12 sort of thing for decommissioning, but given the
13 variety of operational conditions at different plants
14 and site characteristics, it need not always -- you
15 know, there will be different aspects that different
16 plants may want to undertake in terms of monitoring,
17 and I wouldn't want to suggest that the NRC should get
18 into imposing some requirements in this area, but give
19 notice to licensees that it may be beneficial at some
20 point.
21 MR. CHIP CAMERON: I think we heard the no
22 requirements. I think that came through, Bill. But,
23 yeah, we can sometimes be too helpful.
24 But, Tom, I think you're hearing that
25 there would be or there is a need for something to be

1 done. I'm not sure what it is, but yes.

2 MR. CONANT: John Conant, ABB Combustion

3 Engineering.

4 I also agree that I don't think there's

5 new requirements, but there's a pretty good reason for

6 that, I believe. Our site is not only a D and D site

7 nearing completion,b ut for probably the last six or

8 seven years, we've been under EPA Region I on a

9 voluntary corrective action, and the nonradiological

10 components of our industrial site have dictated what

11 we have to do, and there are some pretty stringent

12 requirements to understand the geology, the

13 groundwater flow.

14 And as we've gone into D and D and done

15 the DCGLs, that's been a godsend to really producing

16 good DCGLs, understanding the site and being

17 convincing to the NRC without a lot of rounds of

18 questioning.

19 So I don't see the need for additional NRC

20 regulations. I think most industrial sites if they go

21 back 20, 30, 40 years are probably going to be dealing

22 with EPA concurrently, and I think the reactors know

23 that, and maybe the material sides haven't gotten as

24 close to it.

25 MR. CHIP CAMERON: Okay. Thank you.

1 Yes, sir, did you have an issue that you
2 wanted to raise?
3 DR. BHAT: Ram Bhat from U.S. Air Force.
4 Yesterday I brought this point on one of
5 the workshops. Again, I'm trying to emphasize that
6 the NRC is given the screening list for the screening
7 values for certain radionuclides, like thorium,
8 uranium or other things, and as Mr. Nardi suggested,
9 the DCGL is the one which dictates that dollar amount.
10 In many agencies it's very difficult to get the
11 dollars. The way the cost is going up every day for
12 the decommissioning, and if you ask that a proactive
13 approach for NRC or request it, whether NRC can give
14 the maximum DCGL achieved for each radionuclide,
15 common radionuclide, just like screening values, and
16 give this Website of the particular ones rather than
17 telling, "Hey, go to ADAM," forget it because common
18 mann may be difficult to get to the ADAM, and it will
19 be a more practical approach for the people to go and
20 see what kind of specific parameters they used."
21 Each site may be different, the site
22 specific condition, but at least they can try to
23 achieve the maximum that they can do and just like
24 achieving the best goal.
25 So that's my request.

1 MR. CHIP CAMERON: Okay. That was a
2 question, and do we have an answer? Duane? Oh, Mark
3 is back there, too. Okay.
4 MR. THAGGARD: I'm Mark Thaggard from NRC.
5 We talked about this yesterday, and I
6 don't really see much of an advantage to posting those
7 maximum DCGLs because they're very site specific, and
8 obviously there's going to be some very specific
9 characteristics of a site that would allow it to have
10 the highest achievable DCGL.
11 So I don't see much advantage to posting
12 these values, and I kind of tried to express that
13 yesterday, but maybe I'm not getting the message
14 across.
15 MR. CHIP CAMERON: Okay. Duane.
16 MR. SCHMIDT: Duane Schmidt, NRC.
17 In the discussion yesterday there also
18 were maybe similar recommendations for NRC to provide
19 information on facilities that had used scenarios
20 other than default scenarios, and I guess one way to
21 put it was that was maybe more favorably received by
22 staff that might partly get at what Mr. Bhat is asking
23 for, I think, to provide just a way to get the
24 information out at least easier than having to find it
25 in ADAM.

1 MR. CHIP CAMERON: Okay. Thanks, Duane.
2 Any other NRC issues? Yes.
3 MR. BACHU: I just wanted to thank my
4 friend Joseph Nardi here for raising, touching on the
5 issue yesterday very briefly related to security and
6 safeguards type of information. And I was wondering
7 whether there is enough guidance in 1757 in this area
8 that might lead to some uniform application.
9 MR. CHIP CAMERON: Okay. Is that a
10 question that you're posing to the audience?
11 MR. BACHU: I just want to thank my friend
12 for bringing it up.
13 MR. CHIP CAMERON: Okay.
14 MR. BACHU: And I'm saying whether this
15 should be addressed in the next region of the 1757.
16 MR. CHIP CAMERON: Okay. Joe, are you
17 going to put it forward again?
18 MR. NARDI: Joe Nardi, Westinghouse.
19 It's a very explicit problem for a narrow
20 set of sites. You know, it really comes in only when
21 you have enriched uranium in soil essentially,
22 contamination such as that. The regulations certainly
23 provide a method for exemptions, and that's the path
24 I'm pursuing.
25 But there's always a reluctance on

1 everybody's point to grant exemptions to the
2 regulations, and the question I've raised is perhaps
3 we need to look at that from a risk based approach to
4 have something in the regulations.
5 It's difficult. I realize that, but I'm
6 still proposing it. I can live within the exemption
7 process, but that's not easy either, and it's specific
8 to a licensee.
9 MR. CHIP CAMERON: Okay. So this would be
10 to have a generic approach to this particular issue
11 which I take it is a security safeguards issue rather
12 than having to use the exemption, but it only applies
13 to a few places.
14 MR. NARDI: That's correct, and it's more
15 than security and safeguards. For example, all of the
16 regulations, criticality control, security,
17 accountability and safeguards, and primarily the
18 security, have these concepts that once you go over a
19 certain amount of material you're going to get kicked
20 into all of these things, and there's nothing in any
21 of the provisions that says that, hey, this material
22 is contaminated dirt.
23 The part of my paper is that it's very
24 easy to get over those mass quantities when you have
25 contaminated dirt with enriched uranium in it. It's

very easy to get into it.

MR. CHIP CAMERON: Okay. Thank you for raising that, and thank you, Joe. Dan, you have that? All right.

The third discussion area is what should be the business process, as Larry Camper referred to it, for dealing with these lessons learned, using Nick's three "I's." We're going to put some slides up for you to key up this discussion.

Did you have another point while we're waiting?

DR. BHAT: Yeah.

MR. CHIP CAMERON: Then please raise it.

DR. BHAT: Again, this is Ram Bhat from U.S. Air Force.

I don't know where it falls, on the business process or the NRC process. One is we would like to have regulatory guidance in here for sites containing CERCLA byproduct materials and 91(b). Ninety-one (b) means the weapons.

So we have some sites which contain all of the three. So how to handle, which agencies have coordination between the EPA and the weapon grade and the CERCLA -- I'm sorry -- and by product materials, that's one question.

1 And this second one is we also want to
2 have a clear guidance on the role of NRC regarding all
3 agreement states, regarding the licensee and the
4 contractor and subcontractor by looking (phonetic).
5 That means if there are (unintelligible) for the site,
6 for the project, there's a contract working, and there
7 will be another force of contracts are working. If
8 there's a violation by a contractor or subcontractor,
9 the licensee gets the violation permit for the permit
10 violation.
11 So if the NRC approaches the proper
12 regulation guidance, then the role of individuals,
13 then it will be easier to manage.
14 MR. CHIP CAMERON: Blair, do you
15 understand what he's suggesting on the second one?
16 And who's going to address the first one, which I'm
17 not sure that I understand, but we'll go back to that
18 one?
19 Blair.
20 MR. SPITZBERG: Blair Spitzberg, Region
21 IV.
22 I think I know the case that you're
23 referring to, Dr. Bhat. The situation is the
24 following, where you have a licensee who has an
25 approved decommissioning plan to remediate a site, and

they hire contractors who may also be licensed as decommissioning or remediation contractors to do the remediation work. The contractors are working under the auspices of the approved decommissioning plan, which is the licensee's plan. If there is a violation that occurs and the violation is to some procedures that the decommissioning contractor is using under the auspices of the approved decommissioning plan, we would issue a notice of violation to our licensee who possesses the decommissioning plan and not to the contractor.

Now, by the same token, if that contractor is also -- in some cases that contractor's license becomes in effect when they take possession of the material that they're remediating. Sometimes that happens. If they have taken possession of that material, then if the violation occurs after they have taken possession and their license is in effect, then the violation would be to the contractor.

MR. CHIP CAMERON: Okay. Thanks, Blair. Does that explain it to you?

DR. BHAT: Yes.

MR. CHIP CAMERON: Okay. Yes?

MR. BACHU: I think that OGC gave the reading on that one previously, why we have done or

1 that decision was taken. So the OGC has already given
2 a decision on that.
3 As far as the materials for 93(b)
4 materials that are not under NRC jurisdiction, Mr.
5 Bhat is from the mass material licenses from the U.S.
6 Air Force and the coordinator from head office.
7 There are some byproduct materials, and
8 there are also licenses that can have some subcritical
9 special nuclear materials. However, most criteria is
10 based in Part 20, is to a dose requirement not only
11 from license material, but from any other sources than
12 license materials.
13 So although we are not regulating that
14 material, but when it comes to dose measurement and
15 meeting dose requirements of occupational dose and
16 members of the public, Part 20 also should be
17 considered.
18 MR. CHIP CAMERON: Okay. Thank you.
19 Have we addressed your first issue, Mr.
20 Bhat.
21 DR. BHAT: Not clearly.
22 MR. CHIP CAMERON: Okay.
23 DR. BHAT: I will explain.
24 MR. CHIP CAMERON: All right.
25 DR. BHAT: Suppose there's a site which

1 has the CERCLA materials. So we go through EPA,a nd
2 suddenly there is again also some byproduct materials.
3 Then how do both EPA and NRC should work together and
4 most effectively, that kind of regulatory guidance
5 from the point of both NRC and EPA?
6 That would be very helpful.
7 MR. CHIP CAMERON: So you're suggesting
8 that it would be helpful for licensees to have EPA and
9 NRC work together to --
10 DR. BHAT: Address these issues.
11 MR. CHIP CAMERON: Okay. And when you say
12 "address," do you have some specific issues in mind
13 that they should work together to address?
14 DR. BHAT: Yeah. In a sense what is
15 happening is EPA have their own ten regions or eight
16 regions. I don't know. Each region has their own way
17 of calculating the they call some other thing versus
18 DCGL, and then we may have to satisfy separately for
19 the EPA, separately for NRC so that it will be
20 convenient for the licensee to set one stone and you
21 can kill two birds rather than having two separate
22 stones to kill two birds.
23 MR. CHIP CAMERON: Okay.
24 DR. BHAT: It is most cost effective and
25 saves time, too.

1 MR. CHIP CAMERON: Jim, are you going to
2 step into the breach on this one?
3 MR. SHEPHERD: We've had several sites
4 where this existed, and what we've done typically is
5 the NRC project office and the EPA region will
6 negotiate a memorandum of understanding between the
7 two agencies as to how the issues at that particular
8 site will be addressed.
9 We don't have a global approach to it, but
10 we do sit down with the EPA people and reach an
11 agreement as to what they're going to do, what we're
12 going to do and, of course, neither of us will
13 preclude any of the other statutory authority, but
14 that has worked very well in the past.
15 MR. CHIP CAMERON: Okay. Thank you.
16 Do you think that that's satisfactory?
17 DR. BHAT: I'm not satisfied in the sense
18 personally. I'm not in behalf of all of these things,
19 not officially. As an individual I'm telling all this
20 time.
21 And in a sense, it will be more effective
22 if NRC and EPA together come and say here's the white
23 and black guidance so that we can give clear -- as
24 this gentleman said, there are several sites we have
25 a CERCLA and by product materials, and we cannot

separate. They won't say, "Hey, I'm CERCLA or background material." They go together.

It can be more easy if both agencies get together and heed the guideline rather than to people get together. There will be a lot of communication problems in reality life and contracting all subcontractors and all funding, so many things.

So if we come out with a guidance book together, this is what we're going to approach, that will be good for the licensee.

MR. CHIP CAMERON: Okay. Dan, you've heard the suggestion on that, and i think that Jim implied perhaps that because each site is so different that it might be difficult to do something generic on this rather than do it on a site-by-site basis.

MR. SHEPHERD: That's the thought at the moment.

MR. CHIP CAMERON: All right. And we had another suggestion.

Go ahead, Stuart.

MR. WALKER: I was going to second what Jim had said. I mean because I've seen a couple of the MOUs that were negotiated site specifically. They're quite different just depending on where the contamination is and how the NRC and the state and EPA

1 wanted to play the issue at that particular site.
2 As far as the single guides, I would have
3 a hard time seeing that come out because then we'd
4 have to agree on how we're going to do the risk
5 assessment and dose assessment and everything else,
6 such as placement of wells and all that other. I
7 really wouldn't anticipate that happening.
8 MR. CHIP CAMERON: Perhaps the most you
9 could do is to make sure that it was a recommended
10 approach that there be a site specific agreement of
11 that type.
12 MR. WALKER: If necessary, it could be a
13 formal milieu, but sometimes you may not think it's
14 necessary. You may not want to go that route.
15 MR. CHIP CAMERON: Okay, all right. Thank
16 you, Stuart.
17 Yes.
18 MR. HONERLAH: Hans Honerlah with the
19 Corps of Engineers.
20 And we've done several of these where
21 we've had NRC licenses on CERCLA sites, and we've done
22 generic for our FUSRAP program, MOUs with the NRC
23 concerning some of those issues, and in that generic
24 MOU it says that we're going to deal with them on a
25 site-by-site kind of basis, and we're doing other

1 sites.

2 And I understand his concern because

3 CERCLA takes you down a PA, SI, RI, FS and the NRC

4 process scoping survey, historical characterization,

5 but in MARSSIM, they kind of cover the same things and

6 they do the same things just sitting a team down,

7 having them identify what you want to call the

8 specific document. Do you want to call it an RI or do

9 you want to call it a characterization study?

10 Everything inside of it is pretty much

11 identical.

12 MR. CHIP CAMERON: Okay. Thank you, Hans.

13 All right. This next discussion is

14 particularly important for the NRC because it deals

15 with what do we do with these lessons learned. How do

16 we evaluate them? How do we identify more?

17 And Nick talked about identifying,

18 immortalizing, and incorporating lessons learned.

19 Larry Camper had a little bit of a different

20 description but the same objective, I think, and could

21 we see -- we have some slides. Good. We have a slide

22 for each eye. That's good.

23 So you can identify parts. We're

24 identifying now. Okay?

25 AUDIENCE MEMBER: (Speaking from an

1 unmicked location.)

2 MR. CHIP CAMERON: And the question at the

3 bottom is there are some suggestions, interactive Web

4 page. What other ways should be used to collect

5 lessons learned besides the ones up on the slide? Do

6 we have any further suggestions on the identification

7 of lessons learned?

8 Interactive Web page? I guess someone

9 could sit out there and say, "Here's a lessons learned

10 that you should consider," and send that in and

11 everybody could look at that suggestion. Okay?

12 We have to get to the point later in the

13 discussion about what are you going to do with these

14 suggested lessons learned. But now we're talking

15 about identifying them.

16 Does anybody have any suggestions for ways

17 to make sure that we identify them besides workshops

18 like this, having a Web page on them?

19 I keep going back to thinking about the

20 example from Maine Yankee. How would people know

21 about those types of things? Wait a minute.

22 MR. LUX: I would like to blame Tom

23 Nicholson for me being up here right now.

24 (Laughter.)

25 MR. CHIP CAMERON: Okay. So this is your

1 proxy, right, Tom? Okay. You can speak.

2 MR. LUX: That's right. I speak on behalf

3 of NRC. No.

4 (Laughter.)

5 MR. LUX: My name is still Jeff Lux and

6 I'm still with Kerr-McGee so far.

7 I guess I have two comments. One, when we

8 internally develop a project plan, we have learned to

9 incorporate into the plan for the schedule for that

10 project lessons learned meeting at project completion,

11 and I think it would be a good aspect of

12 decommissioning planning to provide for periodic

13 project reviews that include lessons learned as you go

14 through the decommissioning process. So it could just

15 be built into the decommissioning plan, an effort to

16 capture lessons learned.

17 Then in addition it would be very

18 convenient, beneficial, et cetera, to develop periodic

19 workshops/tabletop exercises to address specific

20 issues that licensees identify. Fuel cycle facility

21 forum meetings routinely attempt to capture and

22 categorize issues identified that something could be

23 done about. It's something that should be addressed,

24 and those could be good topics for issue-specific

25 workshops that would involve regulatory agency and

licensee personnel.

MR. CHIP CAMERON: Okay. Good. Have ever attempted, Dan, to do the periodic project during the project, that they have a specific review of lessons learned?

MR. GILLEN: Not to my knowledge on specific projects, but Nick in his opening remarks talked about how we've done them as we started through the process to learn generically, but not -- am I right, Nick? Yeah.

MR. CHIP CAMERON: Okay. Well, some other suggestions, and there's Derek.

MR. WIDMAYER: Yeah, Derek Widmayer, NRC.

We heard this morning that EPRI is already engaged in this lessons learned collection/identification process for reactors. So before we spill into the other "I's" just for identification purposes, could we utilize that and expand it to other types of decommissioning projects and we just have one, you know, huge database of lessons learned?

Since we haven't worked with EPRI yet on the particular reactor one, I don't know exactly what we're doing, but maybe we can start with that and go from there.

1 MR. CHIP CAMERON: So basically see what
2 EPRI is doing?
3 MR. WIDMAYER: (Speaking from an unmicked
4 location.)
5 MR. CHIP CAMERON: Okay. Ujagar.
6 MR. BACHU: It's always nice to learn
7 lessons, but I think if they were available to the
8 stakeholders in a friendly manner as put in the
9 reactor, first we have some generic lessons learned,
10 and then we divide it to reactor lessons learned,
11 byproduct materials lessons learned, utilities. So a
12 person or a licensing reviewer or an inspector sitting
13 out in Timbuktu can look at it and say, "Okay. This
14 is what happened and this is what we need to be
15 careful about."
16 And also the industry can look at it in
17 their own way, and who raised the -- or where the
18 lesson was learned, whether it comes from industry or
19 coming from NRC or from private sector.
20 MR. CHIP CAMERON: Okay. Well, I guess
21 that raises the issue, not to get $100 for putting the
22 suggestion about walk up two flights or down one or
23 whatever it is, but when an NRC staff person is
24 working on a decommissioning project, they often
25 probably have an idea about, well, this is really a

1 good lesson learned here, and often it would get filed
2 away and may never come up again. Is there any sort
3 of systematic process for the staff to put these into
4 some sort of a queue or do we wait for Nick Orlando to
5 do something?
6 Nick, do you have anything to say on this?
7 And we need to get you on the mic if you do have
8 something to say. You don't. Okay.
9 I just was wondering whether there was any
10 -- when an NRC staff person identifies a lessons
11 learned from a project they're working on, how does
12 that get before the collective NRC staff in
13 management? Is there any systematic process for doing
14 that?
15 MR. ORLANDO: I think in general it
16 probably either would come up either at the
17 Decommission Management Board meetings or perhaps at
18 the weekly section meetings that the section chiefs
19 have with their staff. So that's one way.
20 We routinely have discussions with the
21 regions during the Decommissioning Management Board
22 meetings where things like that could come up, and for
23 the things that I identified in the presentation this
24 morning, those were concerted efforts where we went
25 out and asked the staff what things have we learned

1 and what things have you seen that have worked and
2 haven't worked.
3 On a day-to-day basis, I'm not really sure
4 that there's a monthly lessons learned meeting or
5 anything like that.
6 MR. CHIP CAMERON: But the things that you
7 mentioned probably would accomplish that to make sure
8 that nothing fell through the crack so to speak?
9 MR. ORLANDO: Yeah, as long as we're going
10 through the section meetings and everything else with
11 that sort of in the back of their minds where if
12 something does work, you know, we raise it up and make
13 sure management knowns about it. Yeah, I think so.
14 MR. JAMES CAMERON: At least within Region
15 III I don't know how widely it's sued in the other
16 regions, but if an inspector or a license reviewer in
17 the region identifies an issue, it's normally written
18 up as what we call a value added finding, which is
19 shared with the other regions.
20 Typically there's some award mechanism
21 that comes along with it depending on the nature of
22 the finding, and it's also shared with headquarters,
23 I believe. I don't know so much within DWM, but I
24 know typically it will go to IMNS, but I don't think
25 we are sharing those with Division of Waste

1 Management, which we probably should be.

2 MR. CHIP CAMERON: Okay. So that's the

3 value added.

4 MR. JAMES CAMERON: The other aspect to

5 that is those typically aren't public documents.

6 They're usually just shared within NRC and mainly

7 within the region, and it might be something and I

8 know within Region III they're posting to our Website.

9 It might be helpful to make them available more widely

10 to the public on NRC's Website or on if we could pull

11 the ones out that are specific to waste management

12 that would be applicable.

13 MR. CHIP CAMERON: Great. Let's put that

14 down.

15 Yes, sir.

16 MR. CONANT. John Conant, ABB Combustion

17 Engineering.

18 And this is kind of off the cuff, but

19 lessons learned, many of them come from issues that

20 we've been dealing with, and I wonder if there's some

21 value when you go back and consolidate the lessons

22 learned, and if you see any patterns that go back to

23 issues that perhaps are more fundamental, is there

24 perhaps a root analysis that ought to be done of those

25 primary issues and try to get a little deeper in. It

1 may go back to rulemaking. It may go back to
2 interpretation of regulations. It may go back to
3 guidance, but it seems like maybe that's the next step
4 for some of the collective lessons learned in some
5 categories.
6 MR. CHIP CAMERON: Thank you.
7 Well, that sounds like a good idea. I
8 don't know if any of the things that Nick has done
9 accomplish something like that, but you might have a
10 lot of individual lessons learned, but when you look
11 at them, you may see some trend, some foundational
12 issue.
13 Thank you.
14 MR. GILLEN: Dan Gillen.
15 I just wanted to just indicate that there
16 are some things that we do, and the point that James
17 made in the region is a very good one for inspection
18 items, but there's a lot of room for improvement,
19 which is why we're here, which is why we're talking
20 today.
21 I mean, we do have some fairly
22 nonspecifically laid out things that we do that just
23 naturally get to lessons learned, but we need to
24 formalize that and make the process better, which is
25 why we're talking.

1 MR. CHIP CAMERON: Okay. Derek.
2 MR. WIDMAYER: Derek Widmayer, NRC.
3 I think I heard comment along this line
4 earlier. With respect to my particular facility that
5 I'm dealing with Mr. Lux on, I think I have one
6 lessons learned that was of a negative nature, and
7 that gets a lot of air, and there will be probably
8 lessons learned for the rest of eternity about that
9 particular issue.
10 I have one positive lessons learned that
11 I have no idea how to incorporate that into some sort
12 of future decommissioning process. So it's kind of
13 an interesting dichotomy that, you know, I know what
14 happens when there's a negative issue because he'll
15 call me and then he'll call my boss, and et cetera.
16 The positive thing sort of disappears, you
17 know, into the woodwork, and there's no place to
18 incorporate that into anything.
19 MR. CHIP CAMERON: So you think that the
20 implication is that there's a lot of, when we're
21 talking about lessons learned, there's a lot of
22 emphasis on things that get sort of screwed up rather
23 than on positive things that happen?
24 I think that the intent would be to
25 include both negative and positive, right?

1 MR. WIDMAYER: Right.

2 MR. CHIP CAMERON: But you're saying it's

3 more difficult to get the positive things forward?

4 MR. WIDMAYER; Yes. Well, there's no

5 formal mechanism, you know, not that some licensees

6 calling and complaining is a formal mechanism, but

7 it's effective.

8 You know, I've already incorporated some

9 of my lessons learned on the EPA MOU from stuff that

10 Jeff has asked.

11 MR. CHIP CAMERON: Yes, go ahead.

12 MR. GILLEN: Dan Gillen.

13 I just hazard to say that the negative

14 things are valuable because we can learn from them and

15 try to change something. The positive things, I

16 think, are valuable because people can look at it and

17 say, "That's something I want to do," or you know,

18 it's knowledge, positive knowledge, a good way to

19 approach something.

20 MR. CHIP CAMERON: I guess licensees

21 should feel free to call NRC management and say, "That

22 staffer did a great job on this, is really creative,"

23 instead of just the negative stuff.

24 David.

25 MR. CULBERSON: Just a comment from,

1 again, the standpoint of implementation. I tend to
2 try to get to that point myself, and like you, I'm not
3 sure we have clear insights as to what we're trying to
4 accomplish.
5 Lessons learned is a very broad topic. I
6 mean you can go from simple to complex. You can dwell
7 in the regulatory arena or dwell in the licensee
8 arena. Implementation issues, modeling issues, it's
9 a very, very broad category.
10 And it's not clear to me what the endpoint
11 objective is here. Is it to identify a few major
12 value added lessons learned or to try to capture all
13 lessons learned that all of us can come up with?
14 Those are the two ends of the spectrum,
15 and you know, maybe we need to spend a little time
16 focusing on what it is we want the end product to be
17 and then figure out how we feed that information into
18 that end product.
19 MR. CHIP CAMERON: That's a good point
20 because it also ties into what is the NRC going to do
21 with all of these lessons learned. Now, in terms of
22 what they're going to do, you would think there would
23 be some sort of criteria applied to this doesn't rise
24 to the importance of the types of things we're
25 thinking we want to use.

1 Dan or Derek, do you want to say anything
2 in response on the issue Dave raised about objectives
3 and what sort of filter you might be using in terms of
4 things that would be valuable for us to do?
5 MR. WIDMAYER: Jim has been standing here
6 for a little while, and I thought maybe we could get
7 his comment.
8 MR. CHIP CAMERON: Okay. We will. I just
9 want to see if we can close on this and then we will
10 get that.
11 MR. GILLEN: Yeah, I don't have a vision.
12 I mean, I have an idea, but I don't have the end
13 vision of what I think we're going to have here, but
14 that's why, again, we're talking today. You can make
15 suggestions, but I had envisioned something more than
16 just a gathering of the ten biggest lessons learned or
17 something. I had visions of having a compendium maybe
18 ending up with 1,000 lessons learned that are
19 organized by categories that people can use and go
20 into electronically and click on an area. I want to
21 see all of the lessons learned in groundwater. Click
22 on it and go to, you know, 20 different lessons
23 learned related to groundwater activities or something
24 else.
25 And, yes, there would have to be a filter.

1 We don't want to have just an open total acceptance of
2 everything somebody says to put on the NRC interactive
3 page because, you know, there might be comments in
4 there like the Deputy Director is a crappy Deputy
5 Director or something. We'd filter that one out,
6 but that was my thought, something bigger.
7 MR. CHIP CAMERON: I hope you can comment
8 on this, too, but Dan's idea is that we'll put them
9 all up there and the NRC would not necessarily do
10 anything with them,b ut they would all be up there for
11 people to look at and use as they saw fit.
12 Yes, sir.
13 MR. BYRNE: Jim Byrne from First Energy
14 again.
15 The same as Dave with the Fuel Cycle
16 Forum, we have the dead Reactors Society.
17 MR. CHIP CAMERON: There is a Dead
18 Reactors Society? That's great.
19 MR. BYRNE: NEI/EPRI has a meeting about
20 every year. We all get together and we talk about
21 what we're doing and how we're doing it and what we
22 learned.
23 NRC comes to these meetings, too, and
24 those lessons are out there. I mean, NRC could work
25 with NEI and get whatever lessons learned you want out

1 of the industry for this Website, I'm sure.

2 MR. CHIP CAMERON: Okay. So that sort of

3 ties in with the approach that Dan was spelling out.

4 Georgio.

5 MR. GNUGNOLI: Georgio Gnugnoli, NRC.

6 At the risk of having everybody throwing

7 things at me, there might be a fourth "I" and that

8 would be between identify and immortalize I would

9 consider using immolation.

10 (Laughter.)

11 MR. GNUGNOLI: My fear is that we end up

12 immortalizing and incorporating things that are really

13 not valuable lessons learned. There are people that

14 get on this run-away train with stuff like this, and

15 you end up with too much stuff and stuff that's kind

16 of conflicting and contradictory.

17 An example would be everybody thinks, oh,

18 we've got to keep documentation. We've got to keep

19 these numbers. We've got to make it available for the

20 future. I know that in my cases when I've had to do

21 rad assessments and evaluate situations on data that

22 was collected 20 years before, everybody said, "You

23 can't trust that data. They didn't have the quality

24 assurance. Their diodes had phlogiston in them or

25 something like that," and basically you throw the

1 stuff away.

2 So I think what we put in size in concrete

3 for these kinds of lessons learned we have to be very

4 careful about it or else we end up with a pile of

5 junk. You lose the good stuff with the chaff.

6 MR. CHIP CAMERON: So there needs to be --

7 before you immortalize, after you've identified and

8 before you immortalize, I have not seen the

9 immortalized slide yet nor the last slide, but I think

10 that what we're hearing is that you need another "I"

11 that would resolute in immolation that would be some

12 type of a screen.

13 Of course, we couldn't screen what

14 everybody sent in on on this site, but the implication

15 is that the NRC would call some of those out that were

16 important and do something with them.

17 Let's go to someone we haven[t heard from

18 before.

19 MR. POTTER: For a while. I would just

20 suggest, and I think it is already happening, your

21 self-assessment process is probably allowing some of

22 the important ones to bubble to the surface, and I

23 would expect that that would continue.

24 I think a lot of licensees have self-

25 assessment processes, too, which would help in that

1 arena.

2 MR. CHIP CAMERON: So are you suggesting

3 that the self-assessment process would act as some

4 type of a screen or would be another source of issues?

5 MR. POTTER: I think it would help to both

6 identify and screen lessons learned.

7 MR. CHIP CAMERON: All right.

8 MR. BACHU: I think personally we have

9 spent a lot of time and effort in identifying these

10 lessons learned, and we have as an agency a strategic

11 plan, an operating plan, and we have some four goals,

12 and I think each of these lessons learned should be

13 defined, aligned, and implemented in a way where they

14 should be procedurally to improve the process or

15 improve the timeliness or cut short the serving our

16 clients, the licensees in a shorter time and see how

17 they fit into it and see which one of those comments

18 or lessons learned are useful, other than just nice to

19 have and be aware of, and this information can be put

20 to very good use.

21 MR. CHIP CAMERON: I get the feeling from

22 the group and, Dave, you raised the issue initially;

23 I'd like to get your views on this, but I'm hearing

24 that we should just not have this wholesale approach,

25 although initially you might want to encourage lots of

1 lessons learned, but that there should be some screen
2 that would take those to a more refined level, and I
3 don't know then whether you get comment from people
4 about whether they think that that's beneficial, and
5 it all depends on whether it's going to be a change to
6 the regulatory process. Is it just for licensees?
7 David, do you have any? Chris is up at
8 the mic. Go ahead, Chris, and then we'll go to David.
9 MR. McKENNEY: Chris McKenney, NRC.
10 As Nick alluded to earlier, there's a
11 somewhat older, similar process on the healthy physics
12 database, and what was done in that process was that
13 Q&As or lessons learned in a way were developed by the
14 staff through processes and were filtered by putting
15 them out for comment before they were put back into
16 and immortalized in the system and then reviewed over
17 time. So something like that which would have a
18 process that would allow for a comment period to make
19 sure that people believed that those were important
20 enough, that they didn't have problems with another
21 one that was being developed, that it was too site
22 specific, that people would be able to say, "No, at my
23 site that wouldn't work." That sort of process may be
24 viable. I mean it has been done before for HP ones.
25 There were ones that we classified as

reactor only or materials only because they were HP positioned, but because of the regulations they only applied to those.

MR. CHIP CAMERON: And would some of them or would all of them need any sort of NRC regulatory action to implement or could it be something that a licensee, for example, would be free to adopt it or to use it if they wanted to?

I mean, there's that whole issue, too. How does it work?

MR. McKENNEY: Well, the HP ones is that basically those are considered good practices or good ways to interpret various parts of the regulation or other things that are basically small answers to questions. So therefore, if a licensee is usually using something that would come out of the database, then that would be considered by the inspector or whatever; that that is an adequate measure to meet the regulations for that area.

MR. CHIP CAMERON: Okay. So it gets a little more complicated in that sense. That's aimed towards best practices which would include only a certain amount of lessons learned. So it's going back to Dave's initial comment about what do we want to achieve here.

1 David?

2 MR. CULBERSON: Just another reflection --

3 Dave Culberson -- another reflection on that. If I,

4 for example, as Fuel Cycle Facility Forum Chair were

5 to ask to put together the database of lessons

6 learned, I think it would be a different set than if

7 the NRC were asked to put that together because the

8 emphasis is different.

9 If we all dumped our lessons learned into

10 a common plot, there has got to be some filter as to

11 what the intended use is, and if it's to be placed on

12 the NRC's Website as an NRC tool for licensees and NRC

13 and states and all stakeholders, it's going to have a

14 different slant than if an industry group or the

15 Health Physics Society put the same set of data

16 together because I know from Health Physics'

17 standpoint, those are much more applied, in many cases

18 more technical issues. I think this would be more

19 global issues, more regulatory based, I would think.

20 So how do you float the ones that are

21 really going to be immortalized that everyone could

22 benefit from that may not change in time. Nick and I

23 were talking in the hall earlier. There are some

24 issues that I've raised today on my presentation that

25 are already almost past history and not relevant

1 anymore because of old information.

2 So keeping up with it is important, but

3 it's a question of what we want to end up with here

4 and where it resides.

5 MR. CHIP CAMERON: Okay. I think what I'm

6 hearing is that we need to do some more thinking on

7 that aspect.

8 We're going to go to the next slide, but

9 let's hear from you. Why don't we have them

10 immortalized up there because we need to close out

11 soon.

12 Go ahead.

13 MR. NEWMAN: Sorry to beat this to death.

14 MR. CHIP CAMERON: That's okay.

15 MR. NEWMAN: Harry Newman, NEXTEP

16 Environmental.

17 I do want to ask that, you know, I think

18 we could be asking a lot by asking NRC to do this

19 because one of the things I heard earlier in the

20 meeting was, you know, you've got 30 staff members.

21 You're already overworked obviously because it has

22 taken, you know, 12, 18 months to get D plans approved

23 and stuff like that. You know, I would hate to see a

24 lessons learned process impact or become the forefront

25 of what you're trying to do rather than really looking

1 at the big picture, which is let's get these sites
2 released and if there's a way that you can immortalize
3 the really important issues that are the risk related
4 issues, that to me would seem to be very important.
5 There's a lot of peripheral issues that
6 probably could be dealt with by intercommunications or
7 a verbal communication or other methods. I'm just --
8 I guess what I'm trying to say is I'd hate to see that
9 the agency spent a huge amount of resources toward
10 this rather than toward the ultimate goal of
11 decommissioning sites.
12 MR. CHIP CAMERON: Okay. Thank you.
13 Which makes the whole idea of prioritizing
14 and thinking about what we really want to do here more
15 important.
16 Okay. So we could get swept away in the
17 wave of lessons learned.
18 MR. BACHU: The Health Physics document
19 that we keep referring to, they served their purpose
20 when we did not have computer systems and electronic
21 devices. They have become history now and been either
22 passed on through regulation or through the regulatory
23 guide. At least in IMNS they are obsolete documents
24 at this time, and they're not legally binding.
25 MR. CHIP CAMERON: Okay. Thank you.

1 Immortalize, the question at the bottom,
2 what other ways should be used to preserve lessons
3 learned? So whatever you come out on the other side
4 with, how are people going to know about them?
5 Jim Shepherd raised this this morning in
6 terms of accessibility to people. Don't solely rely
7 on ADAMS was perhaps the implication there.
8 Any thoughts on that, ways of preserving?
9 You know, make the assumption that these are going to
10 be valuable lessons learned. So how should they be
11 disseminated? Where should they be? How should
12 people find out about them? Should there be a
13 periodic NRC banquet where these are rolled out?
14 (Laughter.)
15 MR. CHIP CAMERON: I don't know. Anybody
16 have any ideas?
17 I guess no one has any further ideas on
18 this one, but let's see what the last slide is.
19 "Incorporate," okay. Now, I take it that this is, for
20 example, incorporate these into our regulatory process
21 somehow at least for NRC lessons learned.
22 This all gets back to what the priority of
23 these lessons learned are, and if they're important
24 enough and you get the comment, for example, on
25 something, some way that the NRC should change its

1 regulatory process, rulemaking was suggested by Joe on
2 one issue, revision of guidance, then you would assume
3 the NRC would act to do something like that.
4 Derek?
5 MR. WIDMAYER: Yeah, i think we're
6 struggling a little bit with the last two "I's," and
7 I think Dave Culberson got to the point of that, which
8 is I think NRC staff has to do more thinking on what's
9 the product that we're looking for. Are there two
10 bins of lessons learned? Are there four bins or
11 whatever?
12 And maybe if we figure that out, then
13 we're going to do two different things with the four
14 bins or something like that. I know that we want to
15 incorporate some lessons learned into some sort of
16 regulatory process, but those would probably be the
17 very, very highest priority, the very, very, you know,
18 highest from a risk standpoint lessons learned, and
19 then they're all the things that are way down, you
20 know, below that line, something where we want to
21 change the communication plan or something.
22 So I think Dave hit it right on the nose
23 as far as we need to do more thinking on how we're
24 separating these.
25 MR. CHIP CAMERON: Okay, and we're going

1 to hear from Dan.

2 MR. GILLEN: Yeah, I'm still thinking

3 about the don't put too many resources into this

4 point, and it's a good one.

5 You heard Commissioner Merrifield speak

6 this morning, and he echoes, you know, the SRM that we

7 received after the last annual briefing. In his mind

8 and in the mind of the Commission, this issue will not

9 go away. It's something that they feel strongly

10 about, but I have no intention to take away from the

11 main purpose of my group, which is to decommission

12 facilities, to dump, you know, ten FTE into lessons

13 learned activities.

14 And we may not be the group to, you know,

15 take this entire work on for the whole industry. I

16 mean, we're starting the ball rolling, and there may

17 be other avenues outside of us having something on a

18 Web page that the industry itself can do and share.

19 As my example that I gave and that Dave again said of

20 the Fuel Cycle Facilities Forum among themselves is

21 coming up with ways of sharing ideas on waste disposal

22 and things like that.

23 So many avenues of achieving the purpose,

24 and I will make every effort not to now turn

25 decommissioning plan reviews into five-year reviews

1 because of a lessons learned project.

2 MR. CHIP CAMERON: David and then Tom.

3 MR. CULBERSON: I have a suggestion, and

4 that is that what if we were to ask all the project

5 managers and the directorate staff and licensees to

6 each off up one in their mind significant value added

7 lessons learned, pool those, and get back together for

8 a day and look through them and see what we've got,

9 and they're going to be all over the board, I suspect.

10 There are going to be some that are

11 technical issues, some that are programmatic issues,

12 some that are process related, some that are

13 regulatory related, and just see what that first flush

14 out brings. You know, it's one a piece, and they

15 could be in any form the people choose to submit them,

16 but you may have a structure you'd like to suggest,

17 but see what you get on a first cut, and then once you

18 get back together, let that second meeting define

19 what's going to pop out at the end.

20 Do you want a book with all of these in

21 them? Do you want them on a Web page? Do you want

22 hyperlinks? Do they get imbedded into 1757?

23 That may help us better see what we've got

24 to work with and where we need to go with that.

25 MR. CHIP CAMERON: So that would

1 accomplish two things. One would be to not only be
2 able to discuss the value of the particular idea, but
3 it would also be sort of a test of what ideas should
4 make it into the lessons learned bin. It sounds like
5 a good suggestion.
6 Drew.
7 MR. PERSINKO: Drew Persinko, NRC.
8 I'll just add to that. I think we have
9 begun to go down that path. As part of the integrated
10 decommissioning improvement program there is a part on
11 lessons learned now. We're trying to get ideas from
12 that. We don't have all the answers, but we have
13 begun the process because the person in charge of that
14 being Rafael has actually posed questions to all of
15 the licensing project managers at NRC concerning
16 lessons learned, but he didn't limit them to just one.
17 MR. CHIP CAMERON: Thank you, Drew.
18 Everybody knows Rafael? Right here.
19 Tom.
20 MR. NICHOLSON: Yeah, I was just going to
21 suggest, Dan, one thing we might think about.
22 Yesterday during the breakout Session III a topic was
23 brought up, and we know about it. EPA has a
24 technology innovation program. It used to be an
25 office., Walt Kovalick has it. Some of you may be

1 familiar with it. It's the Federal Remediation
2 Technology Roundtable.
3 They spend quite a bit of time looking at
4 lessons learned with regard to organic and other
5 contaminants, nonradiological. It might be of some
6 value to look at how they capture lessons learned.
7 They put a lot of emphasis not only on the technical
8 aspect, but also the business and the financial part.
9 There's quite a bit of material on the clue-in
10 Website, and I'll provide to Dan information on that
11 that we capture in this workshop.
12 But I think it would be good to go look at
13 that group. There's a significant amount of work that
14 has been done by EPA and other federal agencies.
15 There's about eight or nine of them involved in clean-
16 up of sites that have been contaminated.
17 Also, DOE is starting to look at legacy
18 sites and other lessons learned, and it might be
19 valuable to look at that also.
20 And then finally in the international
21 community, the IAEA is looking at decommissioning
22 aspects in Eastern Europe in particular and that may
23 be another source for information.
24 Thank you.
25 MR. CHIP CAMERON: Oh, thank you, Tom.

1 That's a good suggestion. Always look at the
2 experience of others.
3 I think that this discussion is an
4 appropriate place to end. I don't know what the NRC
5 is going to do with the results of this particular
6 workshop, but at least this discussion, there's a
7 transcript for people to read. I don't know if you
8 have any plans to come out with any meeting summary or
9 whatever.
10 Okay. I'm going to turn it over to you.
11 this is the last lessons learned workshop, right? No.
12 (Laughter.)
13 MR. GILLEN: Thanks, Chip.
14 How about applause, thanks for Chip in his
15 duties today?
16 (Applause.)
17 MR. GILLEN: Quarter to five and just some
18 closing remarks. We'd also ask you if you have
19 anything you want to close with.
20 But, again, I thank you all for your
21 participation. You can't have a party if you send out
22 invitations and nobody shows up. So I was extremely
23 thrilled to see the attendance that we had the two
24 days that we had.
25 We had two purposes when we thought of

1 having this workshop. The first one was day one,
2 gather information, stakeholder input on the LTR
3 analysis issues. The second purpose was day two, talk
4 about lessons learned, see where we can go from there,
5 gather lessons learned, you know, and see what the
6 future of that might hold.
7 But really there was a third outcome that
8 I think is really valuable. The mix of people here,
9 my staff, all of the people in the NRC just milling
10 around outside and interacting on breaks is a value
11 that I see that can hardly be described. I think it's
12 an interaction that you don't normally get picking up
13 the phone and talking. I think it's a very valuable
14 outcome from this type of interaction.
15 Secondly, if you didn't hear it 1,000
16 times from me before, feedback forums, please send
17 them in if you haven't. You don't have to fill them
18 out now. You can wait till you get back to fill it
19 out so that you have the two days to give us some
20 feedback on that.
21 Thirdly, what are we doing from hare?
22 Chip kind of teed that up. If there's any additional
23 comments on any of the issues we talked about in the
24 two days that you haven't been able to express, you
25 can either contact one of the session moderators from

1 yesterday if it's a particular issue that we had in
2 one of the breakout sessions, or we're going to keep
3 the workshop Web page open for about a month for
4 people to enter in their comments. There will be a
5 form right here that people can fill out on the Web
6 page to give us additional comments.
7 Secondly, there will be a summary report
8 that we'll be preparing. We're shooting for about a
9 month from now that will take all of the information
10 that we pulled from the two days here and form -- it
11 won't list all of the details of every topic, but it
12 will be a summary that we can use. I don't know. I'm
13 not sure. It wasn't clear to me, Derek, whether we
14 intended to send that as a draft of something. I
15 heard somebody mention something about a draft, but if
16 you have clarification on what we're going to do for
17 follow-up on that.
18 MR. WIDMAYER: I think what we were
19 planning on doing was in draft form putting it on the
20 Web page and then letting all of the attendees know
21 that it was there and they can comment on it. I don't
22 know how long we're going to leave it up there as a
23 draft version and then finalize it.
24 MR. GILLEN: Okay, and then I guess just
25 in closing kind of on the lessons learned, we got a

1 lot of good information here on different ways we can
2 go, but we intend to at least from the beginnings here
3 start with a base of lessons learned that we can
4 compile, and then we'll be thinking heavily over the
5 next couple of months about which direction we want to
6 go from there as far as getting together after we have
7 kind of a base of information and see what kind of
8 things we have and what bins we could put them in.
9 It seems to be a good way to go. So we'll
10 be thinking hard on that issue.
11 Again, before we close, I wanted to thank
12 Derek, in particular, and all of the staff of NRC and
13 my group because I know how hard they worked to pull
14 this thing together. We're kind of an amateur group
15 when it comes to putting on workshops, but I think
16 they did an outstanding job on this one.
17 Thanks.
18 (Applause.)
19 MR. GILLEN: And lastly, I'll just ask if
20 anyone here has any closing remarks they want to make
21 before we adjourn.
22 MR. CULBERSON: You knew I would.
23 MR. GILLEN: Okay, Dave.
24 MR. CULBERSON: Dave Culberson.
25 I just want to personally thank you and

1 the staff on behalf of the entire group. I think this
2 has been one of the most interactive and effective
3 workshops I've been to on the decommissioning side.
4 I've been to a lot of them, but there's been a really
5 good exchange. Everyone has been willing to listen
6 and take a lot of heat.
7 You're in an unenviable position being
8 regulators. I know that, but we really appreciate as
9 an industry the opportunity to participate and share
10 our thoughts and feedback. I just want you to know
11 we're available to provide any resources and input
12 that we can, and we want to continue working with you,
13 and we have a meeting as you know, coming up in the
14 summer, and perhaps we can continue some of this
15 dialogue there and maybe somehow integrate that into
16 our meeting in a way that works for you and the staff.
17 But thank you for making this a very good
18 workshop.
19 MR. GILLEN: Thanks very much, and we need
20 to put that quote on the front page of the NRNC, the
21 next publication we have.
22 Anything else before we adjourn?
23 Thank you all again. I appreciate it very
24 much.
25 (Whereupon, at 4:51 p.m., the meeting was concluded.)