

UNITED STATES OF AMERICA NUCLEAR REGULATORY COMMISSION

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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BRIEFING ON SITE DECOMMISSIONING MANAGEMENT PLAN

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PUBLIC MEETING

Nuclear Regulatory Commission
One White Flint North
Rockville, Maryland

Monday, November 8, 1993

The Commission met in open session,
pursuant to notice, at 9:30 a.m., Ivan Selin,
Chairman, presiding.

COMMISSIONERS PRESENT:

IVAN SELIN, Chairman of the Commission
KENNETH C. ROGERS, Commissioner
FORREST J. REMICK, Commissioner
E. GAIL de PLANQUE, Commissioner

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STAFF SEATED AT THE COMMISSION TABLE:

WILLIAM C. PARLER, General Counsel

JOHN HOYLE, Assistant Secretary

JAMES TAYLOR, Executive Director for Operations

GUY ARLOTTO, Deputy Director, NMSS

RICHARD BANGART, Director, Office of State Programs,
NMSS

JOHN GREEVES, Deputy Director, Fuel Cycle Safety and
Safeguards Division, NMSS

JOHN AUSTIN, Chief, Decommissioning and Regulatory
Issues Branch, NMSS

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

9:30 a.m.

CHAIRMAN SELIN: Good morning, ladies and gentlemen.

The Commission is meeting at this time to receive a briefing from the staff on the status of the Site Decommissioning Management Plan, or the SDMP. This is one of the most complex undertakings that we've tried, or at least that I've seen in the some years that I've been here.

In 1989, GAO examined our past decommissioning actions at several facilities of material licensees and recommended that we strengthen our decommissioning efforts.

In January, 1990, the Commission directed the staff to develop a detailed list of contaminated sites, including schedules and descriptions of site cleanup actions. This was the immediate action that generated the SDMP.

The first briefing on this was given to the Commission in March of 1990 and this is our third update. The document that formed the basis for this presentation is updated with SECY-93-179, which is now publicly available as a NUREG, NUREG-1444.

We'll also be briefed on the status of the

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1 contaminated sites under agreement state jurisdiction,
2 since the program eventually must be extended to all
3 sites, whether they're under our direct jurisdiction
4 or under agreement states.

5 My own view is that the NRC program is
6 making good progress in what is a thorny and difficult
7 area. It's just very hard to make wholesale changes.
8 There doesn't seem to be a substitute for taking these
9 sites on a couple at a time in learning lessons, but
10 they still have to be dealt with individually, which
11 is a huge effort. A lot of manpower, a lot of high-
12 level attention, a lot of sleepless nights in working
13 on these things. Even though we've been making some
14 progress, we can't just look back and say, "This is
15 more than we had a couple years ago." We have to
16 measure ourselves against some reasonable standards
17 and maintain a very high level of diligence as we
18 tried to complete and resolve the many issues
19 surrounding the decommissioning of SDMP sites.

20 Commissioners?

21 Mr. Taylor?

22 MR. TAYLOR: Good morning. As you know,
23 Mr. Chairman, the staff does continue to put a
24 substantial effort into the resolution of the issues
25 related to site clean-up. As you noted, each case

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1 turns out to be very individual in many ways to
2 resolve the contamination, to assure that the work is
3 going forward. The briefing today will -- as you
4 mentioned, is an update, but it will be presented in
5 two parts. First, John Austin from NMSS will be
6 presenting the principal features of the Site
7 Decommissioning Management Plan for the sites under
8 NRC jurisdiction. At the conclusion of his
9 presentation, Dick Bangart will describe some
10 agreement state activities related to this type of
11 effort and their contaminated facilities.

12 I'll ask John Austin to commence.

13 John?

14 MR. AUSTIN: Thank you.

15 CHAIRMAN SELIN: Good morning, Mr. Austin.

16 MR. AUSTIN: Good morning.

17 This morning I'll be going over the status
18 of the SDMP, some of the projected activities that we
19 expect will occur in the next year. I'll be
20 discussing some of the lingering issues that are
21 impeding some of the remediations of the sites and
22 then discuss some near-term actions that we hope to
23 take.

24 (Slide) If I could have chart number 2,
25 please.

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1 On the status of the SDMP, we think that
2 there has been significant progress on the sites
3 listed in the SDMP. That progress was catalyzed with
4 the issuance of the action plan in April of 1992. If
5 you'll recall, at that time when we prepared the
6 action plan we were intending to focus on six sites,
7 learn some lessons, as you suggested, Mr. Chairman,
8 and then go into the other sites. As it turns out,
9 the action plan caught the attention of those listed
10 and we are, in essence, working on all 50 of the
11 sites, about 50 sites that are on the action plan.

12 Even though we didn't budget or anticipate
13 the response from the affected community, we are
14 working on all of them. The way we have adjusted is
15 that our timing on responding to submittals from the
16 licensees or former licensees is longer than what we
17 would like to do, but we're trying to give everyone a
18 fair attention in a time frame that they are looking
19 for.

20 In FY '93 we did remove one site from the
21 list. That was the Budd Company. It was a hot cell
22 contaminated facility. Also in FY '93 we terminated
23 the Kerr-McGee license in Cimarron, Oklahoma. But
24 they remain on the list because of their uranium fuel
25 fabrication facility and surrounding areas that need

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1 to be remediated.

2 One site that is awaiting an
3 administrative modification is the AMAX site in West
4 Virginia. That's along the shores of the Ohio River.
5 In that case the Nuclear Waste Policy Act, Section
6 151(c) requires the Department of Energy to take title
7 to that site once AMAX has satisfied NRC requirements.
8 There are two issues in AMAX. One is the funding. We
9 have directed AMAX to provide sufficient financial
10 consideration to the Department of Energy so that the
11 Department of Energy can visit the site once a year,
12 ensure that the fence around the site is maintained
13 and to replace the fence on something like a 20 year
14 cycle. There is agreement among DOE, AMAX and NRC as
15 to the level of that funding and the mechanism. It's
16 somewhere between \$100,000.00 and \$200,000.00 that
17 would go into the Treasury. The interest from that
18 would, in essence, reimburse the federal government
19 for surveying that site.

20 It was a complicated case because AMAX had
21 processed ores for zirconium and there was thorium
22 contamination in the residues. We had asked AMAX to
23 remediate the thorium contamination. They thought
24 they had accomplished that. Later there was found to
25 be more thorium in the soils. Unfortunately there was

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1 some zirconium sponge that was in the soil too and
2 when they went back to try to bulldoze the soil up and
3 package it for shipment to a low-level waste site,
4 they discovered that the zirconium had been being
5 oxidized and one of the byproducts of that zirconium
6 oxidation is hydrogen. The bulldozer hit some pockets
7 of hydrogen, a spark occurred and destroyed the front
8 end of a bulldozer. For overall health and safety
9 purposes, it was thought to put this site under
10 institutional control rather than undertake a very
11 dangerous decommissioning action.

12 UNC Wood River Junction was a site that
13 processed fuel under the Nuclear Navy. There they
14 have remediated the site to our standards
15 radiologically. However, the groundwater is
16 contaminated with nitrates in excess of the
17 Environmental Protection Agency drinking water
18 standards, significantly in excess. There we do not
19 have jurisdiction over non-radiological contamination,
20 but we have not terminated the license. Rather, we
21 have worked with the state of Rhode Island to ensure
22 that there is a regulatory agency overseeing that
23 groundwater until it reaches the drinking water
24 standard.

25 CHAIRMAN SELIN: From the licensee's point

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1 of view, is this a fairly seamless regulation or are
2 they caught between two regulators that we can't
3 satisfy both at the same time?

4 MR. AUSTIN: They can satisfy both at the
5 same time. The nitrates eventually will be flushed
6 out and, in essence, diluted. That is what the State
7 of Rhode Island has agreed to oversee. It's a timing
8 matter. Is it three years or five years at which
9 point the groundwater is acceptable?

10 CHAIRMAN SELIN: Yes. The point that
11 we've tried to be sensitive to is that there often is
12 not a radiological remediation plan or environmental
13 plan, there's a plan which is supposed to take care of
14 all the different concerns simultaneously, even if
15 they're raised by different agencies. The question
16 was is that happening in this particular case?

17 MR. AUSTIN: That is happening in this
18 case. We were not prepared to wash our hands and walk
19 away from a known hazard that occurred under an NRC
20 license.

21 CHAIRMAN SELIN: Right.

22 MR. AUSTIN: UNC has developed a
23 groundwater monitoring plan that would be conducted
24 over a five year period. They submitted that to the
25 State of Rhode Island. Rhode Island commented on it.

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1 UNC submitted a proposed final monitoring plan and
2 they should have met with the State of Rhode Island
3 last week to talk about a mechanism of making this an
4 enforceable agreement. Once that occurs, we would
5 update our environmental assessment of that site.
6 Staff committed to a public meeting some ten years
7 ago, so we would honor that commitment and have a
8 public meeting to discuss the environmental assessment
9 and what remains at that site. Once there is a
10 legally binding agreement between UNC and Rhode
11 Island, at that point we would terminate the license
12 and have no more regulatory interest.

13 CHAIRMAN SELIN: That sounds reasonable.
14 Fine. Thank you.

15 COMMISSIONER ROGERS: Before you go on to
16 another subject, John, just coming back to the AMAX
17 situation. That title transfer, DOE title transfer
18 problem, is there anything generic involved there or
19 is this just very specific to the AMAX site? Is there
20 anything involved that one might expect would
21 interfere with title transfer, DOE title transfers in
22 any other sites?

23 MR. AUSTIN: There is no connection
24 between this site and, say, like a mill tailing site.
25 It's different legislation. Section 151(c) says that

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1 to the effect that anyone that had processed ores for
2 zirconium, hafnium and rare earths shall transfer
3 title to that site to the Department of Energy. This
4 is the only site that we're aware of that meets that
5 standard.

6 COMMISSIONER ROGERS: So, it's a unique
7 situation?

8 MR. AUSTIN: It's a unique situation.

9 COMMISSIONER ROGERS: Thank you.

10 COMMISSIONER REMICK: John, for both the
11 AMAX and the Wood River Junction, in June the staff
12 estimated that both of those licenses would be
13 terminated by now. What are the reasons for the delay
14 in the transfer in the case of AMAX and the agreement
15 with Rhode Island?

16 MR. AUSTIN: On the AMAX situation, we
17 thought we had a commitment from the Department of
18 Energy to accept title to that site on my birthday of
19 this year, which was back in March. I did not get
20 that gift. What has happened is that when they looked
21 into the title, there were a lot of clauses, mineral
22 rights attached to the title and the Department of
23 Energy said they would only accept a title if it was
24 clear of all these burdens. In fact, the title had a
25 reference to a woman back in the 1890s, as I recall.

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1 AMAX then went about clearing the title of
2 all of those riders on it. That has been completed.
3 But the Department of Energy is treating this as a
4 gift to the U.S. government. Therefore, they have to
5 go to the Department of Justice to get their
6 clearance. The case has to go up to receive the
7 approval of Secretary O'Leary and all of that is
8 taking more time than what we thought a year ago.

9 Candidly, acceptance of this site in West
10 Virginia is not a high priority in the Department of
11 Energy. We call them on a two to three week basis to
12 remind them of our interest in ensuring progress on
13 this. Before Dick Bangart left the Division, he wrote
14 to his counterpart in the Department of Energy asking
15 that they accelerate the schedule and they wrote back
16 saying that they're going as fast as they can given
17 all the internal administrative hurdles that they have
18 to clear.

19 On UNC Wood River Junction, there was not
20 ready agreement about how to divide up regulatory
21 responsibility. The State of Rhode Island felt that
22 NRC should oversee the nitrates. We had a meeting
23 with them probably about a year, year and a half ago
24 to discuss this. There has been an exchange of
25 correspondence between the state and NRC on it, but

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1 now we think there is steady progress and think that
2 there is high hope that they will be removed from the
3 site in the near-term.

4 Both of them are examples of -- as we get
5 to the line and think that we've cleared everything
6 and are ready to cross, something else pops up out of
7 the woodwork and that's not unusual for SDMP sites.

8 COMMISSIONER REMICK: So they're not so
9 much technical safety questions as they are legal or
10 bureaucratic or whatever?

11 MR. AUSTIN: Yes, administrative.

12 COMMISSIONER REMICK: That's a better
13 name.

14 CHAIRMAN SELIN: May I follow-up on
15 Commissioner Remick's point with respect not so much
16 to the Rhode Island site, because that clearly was a
17 question of communication between us and the state
18 agency, by the AMAX site? This is a voluntary program
19 in many respects and its success is based on the
20 licensee's generically feeling that putting in a large
21 effort they will get reasonably prompt settlement of
22 issues that have been dragging on and that are painful
23 and expensive and uncertain for them.

24 So, although in that particular case it
25 may not be a high priority for the Department of

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1 Energy, it is a high priority for us. If there are
2 problems that have to be taken care of, they have to
3 be taken care of. But if it's a question of getting
4 attention, we should do what's necessary in order to
5 do that. The licensees need to feel that their
6 efforts, when undertaken in good faith, will be
7 rewarded just to get a large liability off their books
8 and get on with their business.

9 MR. AUSTIN: In decommissioning, the
10 profits have been extracted and now it's all money
11 spent and that's where, as you said, it's a voluntary
12 undertaking by the licensees.

13 On the second bullet, we continue to spend
14 significant resources on the Safety Light --

15 CHAIRMAN SELIN: In many ways a voluntary.

16 MR. TAYLOR: Yes. We have --

17 CHAIRMAN SELIN: There is muscle behind
18 these, but we would much prefer that they see the
19 benefits of cooperating quickly and resolving quickly
20 rather than getting down to that point.

21 MR. TAYLOR: Yes. I'd like to note that
22 the Commission has given us the authority to encourage
23 them with various means.

24 CHAIRMAN SELIN: Right.

25 MR. AUSTIN: And we are using those, which

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1 does lead into the Safety Light case where we did
2 issue some orders.

3 CHAIRMAN SELIN: This is an adjudication,
4 so please --

5 MR. AUSTIN: Yes. It is in adjudication.
6 But we're finding that when we get into adjudication
7 they become very resource intensive. That's true also
8 in the Chemetron case. As you're aware of that one,
9 we recently issued a confirmatory order further
10 emphasizing the need to have timely submittals within
11 the steps of decommissioning. I should point out in
12 the Chemetron case there is a citizens' suit to seek
13 an injunction against Ohio allowing Chemetron to
14 dispose of their depleted uranium on-site. That's a
15 state matter at this point in time and we'll have to
16 see how that plays out.

17 As you did mention, we did update the
18 SDMP. I don't know if you have copies of NUREG-1444,
19 but I have copies available if you would like them.
20 What we intend to do is -- what we've found is that
21 distributing the SDMP to a wide group of interests
22 through a SECY paper was rather awkward. So, we
23 decided to go the more conventional route and publish
24 it as a NUREG and then in future years, rather than
25 have a very voluminous document as the SDMP, we would

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1 have supplements to NUREG-1444. This NUREG does
2 contain most of the history of SDMP to serve as the
3 basis for all supplements.

4 During the next year we anticipate
5 removing as many as seven sites from the SDMP.

6 (Slide) If I could have chart 3.

7 AMAX is one. The current schedule has the
8 title being transferred in March of 1994.

9 On UNC, Wood River Junction, I've
10 discussed the nitrate contamination. There is some
11 strontium-90 in the groundwater, which is a beta
12 emitter. We believe that the concentration is below
13 the proposed EPA drinking water standard, but there
14 were several measurements in 1990 that indicated that
15 the gross beta activity in the groundwater was in
16 excess of -- if it were strontium-90, in excess of the
17 drinking water standard. We think that the gross beta
18 is dominated by technetium-99. What should have been
19 done back then was an isotopic analysis. We've asked
20 the USGS to go back, take some more samples and do an
21 isotopic analysis to confirm that it's technetium-99
22 and to confirm that that too is below the EPA drinking
23 water standard.

24 The Pawling site in New York, that is
25 locally known as the nuclear lake site. The license

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1 was terminated back in the '70s, I believe, but there
2 was some cesium and plutonium contamination found in
3 the late '80s. Chevron is the owner of the former
4 licensee, but that site had been sold to the National
5 Park Service. We have worked with Chevron and
6 National Park Service to effect an agreement as to who
7 is going to pay what for the remediation.

8 That agreement was formalized in a
9 confirmatory order to the two organizations. I think
10 it is a real success story. Chevron is very
11 cooperative, very interested in remediating this site
12 voluntarily. The site has been remediated to -- we
13 have a draft confirmatory survey that indicates it has
14 been remediated to the acceptable standards. The
15 buildings are being demolished and we hope to remove
16 that site within a few months. That site eventually
17 will be placed on the Appalachian Trail. I'm told
18 it's a very beautiful site and that the National Park
19 Service is anxious to incorporate it into the
20 Appalachian Trail.

21 Texas Instruments in Attleboro, they had
22 buried some material some years ago. That material
23 has been exhumed and sent to a licensed disposal site.
24 Final survey has been completed and we are trying to
25 get our contractor, Oak Ridge, up there to perform the

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1 confirmatory survey.

2 The Old Vic case was one in which they had
3 fabricated nickel-63 sources. They thought they had
4 remediated it. They had performed a final survey. We
5 sent Oak Ridge up and they found some hot spots in
6 particular areas where remediation had been
7 undertaken, like in an egress area. Some of the
8 contamination was spread around. We reached agreement
9 with Old Vic on how to clear all open issues and we're
10 preparing a paper to the Commission going through the
11 history of the site and informing you that we're going
12 to remove it from the list.

13 (Slide) Can I have chart 4?

14 The Alcoa site is in Cleveland, Ohio.
15 There they had produced magnesium thorium alloy. They
16 had some contamination in the ductwork and in some of
17 the buildings. There was also some depleted uranium
18 contamination that came from the Chemetron facility.
19 They have remediated the buildings. They conducted
20 their final survey. Oak Ridge has been there on the
21 confirmatory survey and we're expecting to receive the
22 results of that confirmatory survey early this month.

23 As another example of complications on
24 these SDMP sites, the Alcoa application of the -- I
25 think it was in the '60s, stated that they may bury

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1 some thorium in a landfill at their site. We have
2 asked Alcoa for any records of any burials back then.
3 They have none, but it's a rather large landfill. As
4 I recall, it's tens of acres. We're trying to resolve
5 or prove the negative on was there any thorium
6 disposed of on that site. What we are anticipating
7 doing is asking Alcoa for aerial photographs of the
8 landfill in the period in which their license was
9 effective in which they were processing material to
10 determine what size of an area might there have been
11 thorium buried. If it's a reasonable size, we may ask
12 for some borings to provide added confirmation that
13 there's no thorium on that site.

14 Elkem Metals is in Marietta, Ohio. They
15 processed ores for tantalum and niobium. They had
16 some thorium contamination in some equipment. They
17 have worked with the Department of Energy on how to go
18 about further remediating their buildings and
19 structures. We thought the remediation would be done
20 by now, but there was a labor dispute and six weeks
21 were lost. We expect that early next year that that
22 site would be suitable for delisting.

23 Pratt and Whitney is in Connecticut. It's
24 the old canal facility. I think it had to do with the
25 old nuclear propulsion -- aircraft nuclear propulsion

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1 operation. That remediation is essentially complete
2 and we will be going through the confirmatory survey
3 and declare victory in that case too.

4 COMMISSIONER REMICK: What was the
5 material there, John?

6 MR. AUSTIN: I believe it was enriched
7 uranium. They were testing various fuel matrix
8 combinations.

9 COMMISSIONER REMICK: I see. The list you
10 just went over is somewhat different than the list in
11 the NUREG. I assume that that's because this is an
12 updated list. The list in the NUREG does not have the
13 Alcoa and Elkem sites. It's on page 29 of the
14 enclosure. It's an enclosure to the SECY, I believe.

15 MR. AUSTIN: If the NUREG was published
16 verbatim as we asked it to be published, Alcoa is
17 listed as Aluminum Company of America. Pratt &
18 Whitney is United Technologies.

19 COMMISSIONER REMICK: I recognize that.
20 It is marked as Pratt and Whitney.

21 MR. AUSTIN: Oh.

22 COMMISSIONER REMICK: It's not a major
23 point. I was just curious. I assume that your
24 current list is an updated list.

25 MR. AUSTIN: It is an updated list and I

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1 said as many as seven and I have eight on these two
2 briefing charts. That could change in six months as
3 something occurs and they're off screen and other
4 cases if something positive happens and they become a
5 candidate.

6 COMMISSIONER REMICK: I do see that on
7 that chart you do have Alcoa listed as a release
8 partial site.

9 MR. AUSTIN: And that has the landfill
10 listed. The landfill is the open issue now.

11 COMMISSIONER REMICK: I see.

12 MR. AUSTIN: We would release the
13 buildings. They could demolish them.

14 COMMISSIONER REMICK: Okay.

15 MR. AUSTIN: (Slide) If I could have
16 chart 5, please.

17 This chart shows in the dark part of the
18 bar charts the number of documents or steps that we
19 have reviewed and completed from 1990 to April of
20 1993. That is, for example, we have reviewed about 22
21 site characterization reports in the first three years
22 of the SDMP. The hashed part of the bar chart shows
23 the number of completed steps in decommissioning that
24 we expect to complete in the period from April 1, '93
25 to April 1 of '94. It's a measure of the level of

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1 activity going on at these sites and shows the
2 acceleration that has occurred since the action plan
3 was approved by the Commission.

4 COMMISSIONER REMICK: Do you appear to be
5 meeting those because once again this was a June
6 document, I believe, that that was in?

7 MR. AUSTIN: We appear to be meeting
8 those, but it's very hazardous to make precise
9 projections in this program.

10 MR. TAYLOR: That's why the released site
11 is such a small number. Right, John?

12 MR. AUSTIN: Yes.

13 COMMISSIONER REMICK: But you feel you're
14 reasonably well on target with that projection?

15 MR. AUSTIN: Yes. Actually, one of my
16 measures of success is that licensees rarely write to
17 Mr. Bernero or Mr. Taylor complaining about us being
18 the hold-up. We think we're working with all of them
19 in a cooperative manner and in a reasonably timely
20 manner, but not as fast as all of us would like, but
21 sufficiently prompt to avoid complaints coming from
22 people listed on the SDMP.

23 COMMISSIONER REMICK: Thank you.

24 MR. AUSTIN: (Slide) If I could have
25 chart 6.

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1 Mr. Chairman, you mentioned that GAO had
2 looked into the decommissioning plan in 1989. The GAO
3 has completed an audit of the history of the Chemetron
4 site. They've published a report. It's factual. It
5 has no recommendations. However, they have now
6 expanded that audit to the entire SDMP program. They
7 have and are contacting all of NRC's project managers
8 for the cases listed in the SDMP. They have indicated
9 that they are going to contact each of the
10 organizations listed in the SDMP, asking questions
11 such as why was the site listed, what's the hazard to
12 the public, what are the impediments to timely
13 remediation and what needs to be done to get on with
14 it.

15 We think that GAO will be completed with
16 that audit in early 1994 and there is a possibility
17 that there could be a congressional hearing once that
18 GAO report is issued. In the past they have been
19 critical of the lack of codified remediation
20 standards. As you know, we've embarked on the
21 enhanced participatory rulemaking. They've been
22 critical of the timing of the decommissioning and we
23 have issued a proposed rule for timeliness in
24 decommissioning. It's possible that they could
25 further comment on those matters.

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1 Another issue or lesson learned is that we
2 have a NUREG-5849 which informs licensees to our
3 expectations on final surveys, which is the proof and
4 the real document that we hope would stand the test of
5 time, that this site, while contaminated at one point
6 in time, is now suitable for unrestricted use. That's
7 the final survey that we rely on the licensee to do.
8 But we go a step farther and have our contractor go
9 out and perform a confirmatory survey. What is
10 happening is that our contractor is very adept at
11 these kinds of activities. They prepare a
12 confirmatory survey plan based on their knowledge of
13 the operations, the history of the site as well as
14 what precisely did the licensee do in their survey.
15 And their plan is biased to find remediation. They'll
16 look, for example, like at 20 percent of the specific
17 spots that the licensee looked at and then go off on
18 their own and look at other areas that were not
19 surveyed explicitly by the responsible party.

20 They're finding unacceptable levels of
21 contamination. In some cases it's just a matter of
22 going in and remediating a few areas. In other cases
23 it raises questions about the adequacy of the survey
24 plans. We are looking to develop some additional
25 guidance to the responsible parties on how to better

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1 go about a statistically valid survey of sites to
2 provide us and the public high confidence that there
3 is no unacceptable contamination remaining at the
4 site.

5 COMMISSIONER ROGERS: What comments are
6 you getting on that guidance, how to do a
7 statistically valid survey?

8 MR. AUSTIN: The written comments I am not
9 familiar with. I just happen to a couple weeks ago
10 met with the Fuel Cycle Facility Forum, which is an
11 organization composed of licensees that are on the
12 SDMP. In fact, the group was formed before SDMP was
13 created and their primary interest is how to ensure
14 finality, what do you expect? There we did get into
15 the issue of surveys. We offered a workshop on it.
16 I think it was unanimous at that meeting involving
17 maybe 30 people to have a workshop on surveys to
18 discuss our expectations. Their --

19 COMMISSIONER ROGERS: When was that
20 workshop held?

21 MR. AUSTIN: The meeting with the forum
22 was a couple weeks ago. At that point we said we
23 would have a workshop in about six months.

24 COMMISSIONER ROGERS: Oh, it hasn't been
25 held yet.

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1 MR. AUSTIN: It has not been held. We're
2 still developing -- we have some lessons learned. We
3 want to go through the statistics both from their
4 perspective and develop a better guidance to Oak Ridge
5 on clarifying how far we are going to go in performing
6 a confirmatory survey, keeping in mind that it's not
7 our contractor's responsibility to develop the
8 documentation on acceptable levels of contamination.
9 It's the responsible party or licensee's
10 responsibility to do those surveys.

11 But the biggest issue they brought up at
12 the meeting a couple weeks ago was the issue of
13 averaging. Averaging becomes an issue in that the
14 survey is not 100 percent direct measurement of all
15 areas that could have been contaminated. We require
16 them to create a grid on the soil, on the wall, and
17 perform direct measurement in areas within that grid
18 and one cannot expect high confidence that there is
19 not a small area somewhere that has some contamination
20 in excess of the limit. Therefore, we allow them to
21 average, what we call hot spot. Current thinking is
22 now that if the contamination is three times the limit
23 and another adjacent area is one-third the limit, then
24 you can average those two and you meet the limit. We
25 find this averaging procedure acceptable because if

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1 one is three times the limit in a zone, one would have
2 to spend 2,000 hours in that one spot to receive a
3 dose that is not unacceptable and that's just not
4 going to happen. People will move around. So, we
5 think we're reasonably conservative. The only
6 question is do you put a cap at three times the limit
7 or ten times the limit? That is a matter that the
8 staff is continuing to consider.

9 But even though the NUREG is a draft, it's
10 the best thing that we have on the street and we're
11 urging licensees to use it.

12 COMMISSIONER ROGERS: Well, this kind of
13 issue was brought up at the participatory rulemaking
14 sessions and certainly it's a matter of considerable
15 interest to certain groups. I think there is a high
16 sensitivity to this question of averaging and it would
17 seem to me that it would behoove us to try to get as
18 much public input on that issue as possible because it
19 will come time and time again until there is a general
20 feeling that, yes, this is a reasonable thing to do.
21 From a technical point of view, it sounds very
22 reasonable. But if you focus just on the possibility
23 of those hot spots, people sometimes get very upset
24 about them. I think that it does seem to me that it
25 shouldn't be something that's outside of the

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1 participatory rulemaking framework. It's something
2 that's come up very much in that process and I think
3 a great deal of care should be taken in how we
4 finalize our position on how to do this averaging
5 because it's a very, very sensitive issue.

6 MR. TAYLOR: We agree.

7 MR. AUSTIN: Yes.

8 MR. TAYLOR: John, continue.

9 MR. AUSTIN: Okay. Another issue which
10 I'd like to get into on the next briefing chart later
11 is the thorium disposal issue.

12 MR. TAYLOR: That's on the next slide.

13 MR. AUSTIN: That's on the next slide.
14 I'll get to that in a moment. If I could just go
15 through this one.

16 What we've learned primarily through the
17 Chemetron case is that we have reinforced our desire
18 to cooperate with the states as we go through the
19 decommissioning of these sites. As we discussed
20 earlier, there are some issues at these sites that are
21 not under our jurisdiction but are under the
22 jurisdiction of a state and they have that regulatory
23 interest and we're trying to avoid a situation where
24 a licensee has complied with or would want to comply
25 with all of our requirements, but then to find at a

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1 very late stage that the state has an interest. So,
2 we are trying to go into something like an outreach
3 program with the states to keep them informed of what
4 we're doing and what our expectations are and what our
5 requirements are.

6 On Sequoyah Fuels, that case reinforces
7 the link between remediation criteria and financial
8 assurance. One cannot set a level of funding that
9 would be required for decommissioning with confidence
10 if one does not know what the remediation standard is
11 going to be. There's a direct link and it can involve
12 a factor of ten or 100 in what the decommissioning
13 cost could be, depending on the specific remediation
14 standard.

15 COMMISSIONER de PLANQUE: So how are we
16 dealing with that?

17 MR. AUSTIN: In the difficult cases, and
18 I would put all of the thorium contaminated sites in
19 that category, we are exploring the need to perform an
20 environmental impact statement that would look through
21 the options, alternatives, on-site disposal, shipping
22 to a facility like Envirocare, shipping to a used mine
23 that would lower the human intrusion potential,
24 examining those potential environmental impacts and
25 arriving at what we would call an ALARA, what is as

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1 low as reasonably achievable, factoring in cost to
2 establish the remediation standard in that way.

3 COMMISSIONER de PLANQUE: But you're still
4 left without knowing exactly what the standard is.
5 Suppose you dispose on-site?

6 MR. PARLER: In view of the fact, at least
7 as I understand it, that some of these things are in
8 litigation, I would respectfully suggest that you just
9 keep in general.

10 MR. AUSTIN: Okay.

11 COMMISSIONER de PLANQUE: Are you
12 currently using the branch technical position limits
13 in this regard?

14 MR. AUSTIN: Yes, we are using the branch
15 technical position of 1981 for uranium and thorium.
16 We're using concentration limits that the staff has
17 used over the years for other radionuclides, like
18 cobalt, strontium, cesium. And when we come up with
19 an oddball radionuclide, we try to make a comparison
20 on a risk basis to something that has already been
21 used.

22 On the branch technical position, it's
23 options 1 and 2, but the action plan calls for the
24 staff to look to an ALARA analysis, either above the
25 line or below the line. Generically we're looking at

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1 for those where there is a potential that the
2 remediation standard could be prohibitively expensive,
3 we're looking at the possibility of on-site disposal
4 in the vicinity of the site, disposal in the vicinity
5 of the site, and entertaining the notion of exempting
6 the licensee from the unrestricted use standard
7 provided that there be restrictive covenants in the
8 deed and possibly other assurances that the human
9 intrusion scenario would be acceptably low.

10 Another option that the staff is
11 considering is a perpetual license, in a way similar
12 to the AMAX case. In the AMAX case the license would
13 be terminated, but you have the federal government
14 periodically checking up on that site. In NRC space,
15 if there were a perpetual license, the concept would
16 be to establish a fund, the interest from which would
17 allow for an inspection every ten years and it would
18 be a way to keep that site in the consciousness of the
19 Agency.

20 So, those are the kinds of things we're
21 looking at.

22 MR. TAYLOR: These are just ideas.

23 MR. AUSTIN: Ideas. Before we undertake
24 any one of those kinds of things, we would consult
25 with the Commission.

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1 CHAIRMAN SELIN: In looking at places
2 where sort of a judgment as to what's the best outcome
3 given that the finances don't seem to be consistent
4 with our standards, those are prima facie places where
5 you want the affected public to have a chance to make
6 a statement. It would not be appropriate for
7 bureaucrats in Washington to be making these tradeoffs
8 at some site without a strong input from the people
9 who are involved. If we're following our standards,
10 the standards have been put out in a rule, they've
11 been commented on, that's one situation. But in these
12 situations when they're really judgment and value
13 calls, the affected parties have to be strongly
14 involved on each issue.

15 MR. TAYLOR: That includes the states too.

16 CHAIRMAN SELIN: Exactly.

17 MR. AUSTIN: And one mechanism to do that
18 is through the environmental impact statement
19 preparation, including meetings in the vicinity of the
20 site.

21 COMMISSIONER REMICK: John, on the
22 environmental impact statement, I assume that meets
23 the criteria of a major federal action. I can
24 understand how that is a convenient mechanism to look
25 at the various alternatives, cost, getting input, but

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1 has it met major federal action criteria? Not
2 necessarily that it has to, but --

3 MR. AUSTIN: Taking a hypothetical case,
4 if the agency were to approve the disposal of thorium-
5 contaminated slags at a concentration such that if in
6 the future someone were to reside on that site, in
7 future we're talking a thousand years or more, if
8 someone were to reside on that site and they could
9 receive a dose in excess of Part 20 limits, I think
10 that would cross the threshold of a major federal
11 action because in essence that land would be condemned
12 forever. So, it's in that context.

13 COMMISSIONER REMICK: I see.

14 MR. TAYLOR: Okay.

15 MR. AUSTIN: All right. Several of our
16 cases have been elevated to upper management because
17 they involve such complex policy issues that a simple
18 bureaucrat shouldn't make the decision. It should
19 come up to you.

20 MR. TAYLOR: Skip on for that one.

21 MR. AUSTIN: As I said, we need to clarify
22 our expectations on surveys and provide additional
23 guidance on confirmatory surveys.

24 (Slide) On the last briefing chart, some
25 of this I've already covered. There are 14 of our

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1 sites that have thorium contamination, with six of
2 them having over a million cubic feet of thorium
3 contamination. As I recall, two piles of dirt out
4 here during construction of the second building, they
5 totaled about 600,000 cubic feet combined. So, it's
6 almost twice that volume.

7 MR. TAYLOR: John, you're talking about
8 the dirt that was over on the leased Metro site across
9 the street.

10 MR. AUSTIN: To give you a perspective of
11 a million cubic feet.

12 CHAIRMAN SELIN: A million cubic feet is
13 roughly the total amount of volume low-level waste
14 that goes into -- other than DOE low-level waste that
15 goes into the civilian sites in a year.

16 MR. AUSTIN: In a year.

17 CHAIRMAN SELIN: That's a huge volume.

18 MR. AUSTIN: With thorium, the issue is
19 the direct exposure pathway. That concern doesn't
20 come from thorium itself, but rather one of the
21 daughter products of thorium. After about 50 or 60
22 years, the daughters have grown back into secular
23 equilibrium, meaning that if you started out with a
24 millicurie of thorium, in 50 years you'd have a
25 millicurie of all of the daughters, including thalium-

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1 206, which has a 2 MeV gamma. That's the concern with
2 thorium. Therefore, one has to be concerned about the
3 human intrusion pathway.

4 Under the branch technical position, which
5 discusses the method of putting four feet of clean
6 soil over a burial, we need to decide how much credit
7 can be given for that cover. Currently our dose
8 assessments are carried out for a thousand years and
9 one has to wonder would someone -- would wind, water,
10 erosion remove the cover exposing the thorium to the
11 surface again or would someone come in and construct
12 a home with a basement creating another exposure
13 pathway? So, the question is how much credit, if any,
14 should be given for these four feet of clean soil.

15 COMMISSIONER REMICK: John, I assume that
16 the concentrations of the thorium in these piles is
17 greater than it would be in the ore originally
18 processed.

19 MR. AUSTIN: Not necessarily. Most of the
20 thorium-contaminated slag has to do with ores for
21 which the processor wanted to extract tantalum or
22 niobium. They had no desire for the thorium or
23 uranium that happened to be in that ore. So, I don't
24 recall niobium and vanadium, tantalum concentrations,
25 but it is usually a low percentage within the ore, low

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1 being like 10, 20 percent. It sounds like a pretty
2 rich ore to me. So, if that's all they're removing,
3 the volume, therefore concentration is not going to be
4 changed that much.

5 COMMISSIONER REMICK: So in nature we have
6 the same problem.

7 MR. AUSTIN: Yes. Yes.

8 COMMISSIONER REMICK: But perhaps in a
9 different location? Is that the difference?

10 MR. AUSTIN: Yes. It has been removed
11 from underground and is now --

12 COMMISSIONER REMICK: Underground, not
13 surface.

14 MR. AUSTIN: Some of them are surface.

15 MR. TAYLOR: Some are surface deposit.

16 MR. AUSTIN: Yes, some of them are. So,
17 this is naturally occurring contamination that we're
18 confronted with.

19 COMMISSIONER REMICK: But it's in a
20 different location, presumably, than it originally
21 was.

22 MR. AUSTIN: Yes.

23 MR. PARLER: Presumably it's been removed
24 from its place of deposit in nature and those are the
25 words in the Atomic Energy Act. Whenever that happens

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1 we have something to do with the material.

2 MR. TAYLOR: John went over this to
3 emphasize the difficulties in dealing with thorium,
4 just as an example, and there are 14 known sites that
5 we're dealing with. This was the purpose -- this is
6 a difficult issue.

7 Now Dick Bangart will continue with his
8 discussion.

9 MR. BANGART: Good morning. I'll be
10 working from the second package of slides that I hope
11 you have in front of you.

12 (Slide) I'll go to the first page now.

13 Over the last couple of years, as the SDMP
14 has grown in importance within NRC, we have asked on
15 a couple of occasions for information from the
16 agreement states about the number and status of
17 contaminated sites and whether or not agreement states
18 have programs to assure timely remediation of
19 contaminated sites. We made a couple of what I'll
20 call fledgling attempts in 1990 and 1991 to gather
21 information. However, the information that we did
22 obtain was in no way comparable to the information
23 that we currently have about the sites listed in the
24 SDMP.

25 (Slide) Could I go to the next slide,

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1 please?

2 So, in preparation for this briefing, we
3 issued a more comprehensive request for information
4 about contaminated sites in each of the agreement
5 states and we issued that letter actually by facsimile
6 on September 20th of this year. We asked if the
7 agreement states have a documented program. If so, we
8 asked for a copy of the document. If they have a
9 program or activities they're carrying out but it's
10 not documented, we asked for a written summary of
11 those activities. We asked for the criteria that each
12 agreement state uses to determine whether a site is
13 sufficiently remediated for unrestricted release. We
14 also asked for not only a listing of the contaminated
15 sites using the same criteria that a site would
16 qualify for listing in the SDMP, but we also asked for
17 a written description of each contaminated site,
18 similar to the descriptions that are contained in the
19 latter part of the SDMP.

20 COMMISSIONER REMICK: I'm not sure I
21 understood what you said. Did you find out whether
22 they're using the same criteria as we use or different
23 criteria?

24 MR. BANGART: We asked for the criteria
25 that they were using, not to just make a judgment yes

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1 or no answer. That's what we had asked for earlier.
2 We mostly got yes or no kind of answers that weren't
3 very definitive.

4 COMMISSIONER REMICK: Did you find that
5 those criteria are generally the same or are they
6 different?

7 MR. BANGART: I'll get into that.

8 COMMISSIONER REMICK: Okay.

9 MR. BANGART: It's not a clear picture at
10 this point in time --

11 COMMISSIONER REMICK: All right.

12 MR. BANGART: -- what the agreement states
13 are using.

14 (Slide) If I can go to the next slide.

15 Overall, we were somewhat disappointed in
16 the initial responses that we received from a number
17 of the agreement states. Many of the responses lacked
18 the kind of specificity and detail that we requested,
19 although I must admit that we did not give the
20 agreement states a great length of time to gather the
21 information. It was only a little over three weeks
22 and that was a fairly large task for an agreement
23 state that had a large number of licensees.

24 The numbers on your slide do need to be
25 updated because we've continued to work informally

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1 with agreement states to get some additional
2 information. As of close of business last Friday, 28
3 states have responded. Twenty-five have responded in
4 writing and three by telephone. New York is the only
5 agreement state that has not provided information at
6 least in some form, however New York is continuing to
7 work and they've committed to provide us the
8 information once they've completed their review.

9 Currently it looks that as many as 64
10 sites have been identified in agreement states which
11 would appear to qualify for an SDMP-type listing. Of
12 that 64, none are from Illinois. Illinois is
13 currently reviewing 80 potentially contaminated sites
14 or actual contaminated sites that might qualify for an
15 SDMP list. The State of New York has informally
16 indicated that they may have as many as 50
17 contaminated sites, some fraction of which could
18 qualify for an SDMP-type listing.

19 All of the agreement states have indicated
20 that none of the sites are an immediate threat to
21 public health and safety. There are appropriate
22 controls in place to not only protect public health
23 and safety but to minimize at least the spread of any
24 significant contamination.

25 CHAIRMAN SELIN: You can't say 64 and show

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1 89 without explaining the correspondence between the
2 two numbers.

3 MR. BANGART: Eight-nine is a number --
4 I've got about six numbers on my slide here. The 89,
5 the total there was meant to include both those that
6 appear to definitively meet the SDMP criteria, plus
7 additional sites that potentially could be listed on
8 an SDMP-type list. But that number was the number we
9 had at the time the slides were submitted to SECY.

10 CHAIRMAN SELIN: But the conclusion should
11 be that there are at least as many sites in the
12 agreement states as we've identified in the --

13 MR. BANGART: Yes. That's a good general
14 conclusion at this point.

15 CHAIRMAN SELIN: Is that really what we
16 should be concluding?

17 MR. BANGART: Yes. Yes.

18 COMMISSIONER REMICK: Did the states
19 identify what criteria they used to make the
20 conclusion no immediate public threat? You're
21 referring to Part 20?

22 MR. BANGART: It's the same kind of basis
23 that we use for SDMP sites. For the most part the
24 sites are licensed, they're under control. They've
25 found buildings locked. They have monitoring programs

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1 in place for those where there's groundwater
2 contamination potential. So, it's based in part on
3 the same -- identically the same kind of information
4 that we use. And for the most part there's good idea
5 of the amount of contamination and the type of
6 radioactive material that's involved with the site or
7 the building.

8 CHAIRMAN SELIN: If there were an
9 immediate threat they wouldn't be on the SDMP, they
10 would be subject to immediate action.

11 MR. BANGART: That's true. That's true.

12 It doesn't appear, however, that there is
13 any concerted effort by most of the agreement states
14 to implement a program similar to the SDMP to assure
15 that timely remediation of sites does occur. Most of
16 the states indicated that they have few problem
17 contaminated sites, that when there is a problem they
18 address the need for action on a case-specific basis.

19 (Slide) Next slide, please.

20 Finally, all of the agreement states
21 responded that they do use or rely on NRC clean-up
22 criteria that are contained in the SDMP and the action
23 plan, at least in part and they use that to establish
24 the criteria for when a site is suitable for
25 unrestricted release.

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1 There were some puzzling responses though.
2 A number of the agreement states referenced just reg.
3 guide 1.86 as clean-up criteria. Reg. guide 1.86 only
4 contains release criteria for surface contamination on
5 components or structures. So, obviously an agreement
6 state couldn't use reg. guide 1.86 alone if there were
7 a site that had soil slag or groundwater kind of
8 contamination. So, we'll be following them up to try
9 to better clarify responses where the state only gave
10 us reg. guide 1.86 as a reference.

11 COMMISSIONER de PLANQUE: Do the states
12 seem to have any restricted use or perpetual care type
13 provisions?

14 MR. BANGART: The answer to that question
15 wasn't specifically addressed in the responses, but it
16 appeared that there were a number of facilities that
17 they identified where especially it was a former
18 20.302 or 304 type on-site burial where the plan of
19 action by the state appeared to be to have --
20 continued with a license in place for at least some
21 indefinite period of time and to continue to monitor
22 the site. Those situations like that were found, I
23 think, more often than not where it was state-owned
24 property.

25 COMMISSIONER ROGERS: I'm a little puzzled

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1 here as to why in the agreement states there seems to
2 be what, if I interpret what you've said, so little
3 interest in really pushing proper remediation of these
4 sites when there is a great deal of interest in states
5 that are non-agreement states.

6 MR. BANGART: That's a good question that
7 leads directly into my next slide on agreement state
8 reactions.

9 COMMISSIONER ROGERS: Oh, you're welcome.

10 MR. BANGART: (Slide) Just as you said,
11 in general the agreement states don't believe that
12 remediation of contaminated sites is as difficult or
13 perhaps as significant a problem as it is in the non-
14 agreement states. They've described four reasons why
15 they believe that's the case. First of all, a number
16 of the agreement states believe they are actually more
17 experienced in the regulation of contaminated site or
18 building remediation than the NRC. They say that
19 because they've had NARM/NORM radiation
20 responsibilities even before they became an agreement
21 state in some cases and indeed a number of them have
22 cleaned up radium-contaminated buildings or
23 facilities. Colorado is probably one of the most
24 noteworthy examples. They've cleaned up a number of
25 radium-contaminated facilities. They've also had the

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1 experience in Grand Junction, Colorado of remediating
2 residential construction where uranium mill tailings
3 were used and created a problem.

4 There's also a general sense that there's
5 a higher fraction of NRC licensees that are authorized
6 to possess long-lived radioactive material in loose
7 form. I don't know if that's true or not, but at
8 least based on the lists that we have now it looks
9 like there may be some truth in that. The number of
10 sites that have currently been identified in agreement
11 states that contain large volumes of soil with thorium
12 or uranium contamination appears to be relatively
13 small in number.

14 The agreement states also believe that
15 they actually have a better first hand knowledge of
16 contaminated sites in their states, since they
17 individually possess fewer licensees than the NRC
18 does. They don't have, for the most part, a
19 decentralized organization like we do with our
20 regional offices. Also, their programs have been in
21 existence for a fewer number of years than the AEC/NRC
22 regulatory program.

23 Finally --

24 COMMISSIONER REMICK: Excuse me.

25 MR. BANGART: Yes.

1 COMMISSIONER REMICK: Couldn't some of
2 those same arguments be made by states that are not
3 agreement states, some of those same arguments,
4 experience with NARM/NORM than the NRC?

5 MR. BANGART: Certainly they could be,
6 yes.

7 COMMISSIONER REMICK: Do we hear that from
8 those states?

9 MR. BANGART: I have not heard that in my
10 experience in working on the SDMP.

11 MR. AUSTIN: I haven't either.

12 MR. BANGART: This is a take. I'm just
13 telling you what we heard mostly at the last all
14 agreement state meetings held in Tempe.

15 Finally, at least at this point in time,
16 and this is one of the real questions, it appears that
17 the same degree of public media and political
18 attention that some of the SDMP sites have received is
19 not occurring in agreement states. So, they don't
20 feel the same kind of outside pressures that NRC is
21 receiving.

22 COMMISSIONER ROGERS: Well, I wonder if it
23 wouldn't pay for us to look in a little more detail at
24 their claims there that maybe there is something that
25 we might learn from some of those programs. If they

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1 feel that they have had some experience successfully
2 in dealing with these issues and if the result of that
3 is less public concern, perhaps -- I'm just offering
4 it as a perhaps -- that's one reason they're not
5 experiencing the same kind of pressures, that maybe
6 that is something that it pays for us to look at that
7 we might learn from.

8 MR. BANGART: And I think that the actions
9 that we're planning to take will get exactly that
10 information.

11 CHAIRMAN SELIN: I'd like to follow-up on
12 Commissioner Rogers' comments. First of all, the
13 question isn't so much how to clean up the sites, but
14 whether to clean up the sites. In other words, maybe
15 that individual states have something to teach other
16 states or us about effective measures. But the main
17 question is whether to move or not rather than what
18 steps to take. At least that's what I think is the
19 main question. Obviously they're tied together
20 because different steps will have different financial
21 implications.

22 The second is that this presents a classic
23 example of question of compatibility rather than
24 adequacy. I tend to think of adequacy as an issue,
25 sort of a state by state issue. Is your program

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1 adequate? Compatibility is maybe it's adequate looked
2 at by itself, but if you look at the aggregate of
3 states do you have a program -- I mean do we have a
4 situation that's a threat to health and safety rather
5 than an individual state? We've always said with
6 these individual sites they're not immediate threats
7 one at a time. It's the universe of sites just
8 waiting for an accident to happen that concerns us
9 rather than just looking at them one at a time.
10 Certainly if you double or triple the number of sites
11 that have the risk of contamination if something is
12 handled poorly, we have an aggregate problem if not an
13 individual problem.

14 Tied to that is a credibility question
15 that an individual state which has only a couple of
16 three sites may not be feeling much pressure, but the
17 question of confidence in the sites and the program as
18 a whole is affected by these.

19 To make a long story short, I believe
20 Commissioner Rogers was indirectly expressing some
21 unease at this lack of urgency. I would like to
22 express it directly.

23 MR. BANGART: And I think the actions that
24 we have planned will deal with that question. I would
25 like to now go to the last slide that shows this --

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1 COMMISSIONER REMICK: Dick, just one
2 related comment.

3 MR. BANGART: Yes.

4 COMMISSIONER REMICK: It would be
5 interesting to know what criteria were used in the
6 sites that were decontaminated.

7 MR. BANGART: We don't have a great deal
8 of detail on that. That was one of the questions that
9 was asked earlier. As I understand the responses, we
10 did not get a lot of detail. I think that was a
11 specific question that was asked in 1991. That is the
12 first thing that we need to do is to continue to
13 follow on with the states and get additional
14 information or clarifying information on the responses
15 that they sent in.

16 We also plan to conduct an agreement state
17 workshop on contaminated site remediation, following
18 up on your recommendation, Mr. Chairman. We plan to
19 conduct that sometime in the first half of 1994. That
20 will be an opportunity for us to share NRC experiences
21 with the agreement states in implementing the SDMP.
22 It will also be an opportunity for us to learn more
23 about the agreement state programs or activities that
24 they're implementing to address contaminated site
25 remediation. So with that additional follow-up

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1 information, with the workshop behind us, we'll be in
2 a position to determine if the NRC needs to initiate
3 any actions that would more strongly encourage states
4 to implement programs or to have them establish formal
5 programs.

6 We've looked at some options that the NRC
7 could pursue to initiate further action in agreement
8 states. One option would include extending the ORISE
9 contract to have ORISE review agreement state
10 terminated license files.

11 MR. TAYLOR: Say what that is.

12 MR. BANGART: ORISE is Oak Ridge Institute
13 for Science and Education. They're the contract
14 that's reviewing previously terminated NRC license
15 files for potential candidate contaminated sites that
16 need further remediation.

17 A variation of that option would be for
18 NRC to help fund agreement states to hire their own
19 technical systems contractors to review terminated
20 license files, however that may not be a viable option
21 as I've just recently learned because OGC provided us
22 a legal opinion about whether or not the NRC can
23 directly fund agreement state programs or partly fund
24 agreement state programs. And obviously any funding
25 option has associated with it equity question

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1 difficulty of NRC licensees paying at least in part
2 for agreement state programs.

3 We also can use our routine methods of
4 interactions with agreement states to encourage more
5 aggressive programs on their part. That would include
6 our agreement state letters, meetings and workshops
7 like the one planned for next year. And also we can
8 encourage or require through our biannual agreement
9 state program reviews.

10 And as you mentioned, Mr. Chairman, we are
11 considering the issue of clean-up of contaminated
12 sites in both the common performance indicators that
13 we're developing to assess both regional and agreement
14 state programs as well as the new compatibility policy
15 that we'll be developing.

16 That concludes my presentation.

17 CHAIRMAN SELIN: I have several comments
18 I'd like to make and then turn to my colleagues.

19 First, this is, I believe, the first
20 public meeting in which we've discussed both the --

21 MR. TAYLOR: Yes.

22 CHAIRMAN SELIN: -- NRC -- well, I think
23 that's a big step in the right direction.

24 The second is, I certainly share
25 Commissioner Remick's concern about let's know the

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1 facts before we go off too far, know what the criteria
2 are, whether the sites are measured by comparable
3 criteria, comparable standards, et cetera.

4 The third is, what's sauce for the goose
5 is sauce for the gander. If this is a program that
6 deserves the attention we're giving it in our states,
7 it deserves comparable attention in the agreement
8 states. I mean, the standard is are citizen's
9 comparably protected regardless of what state they
10 live in. If not, then we will have to reconsider our
11 own program. But the trends are such that there will
12 be more agreement states, not fewer, and there will be
13 a lot more licenses in agreement states five years
14 from now than there are today in the sense that the
15 states that are moving towards agreement state status
16 tend to be states with a lot of licenses.

17 I think these issues of compatibility, not
18 just for form's sake, but where there's a substantive
19 measurable impact on health and safety, or at least on
20 indicators that we think are correlated with health
21 and safety, have to come forward.

22 To make a long story short, I hope we
23 don't have to wait until we have disastrous headlines
24 and hearings before the agreement states decide that
25 this is an issue that they should get ahead of, but

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1 might move before it's a crisis not after it's a
2 crisis on this program.

3 Commissioner Rogers?

4 COMMISSIONER ROGERS: Yes. Thank you.

5 I just wanted to say that I do indeed
6 share the Chairman's view on a different perception of
7 agreement states on how fast it is important to move
8 on these things. I am concerned about that.

9 I'd like to say that I thought this was a
10 really -- an excellent briefing. It had a lot of
11 detail in it and maybe that's a little tedious to some
12 extent, but I found it very useful and very
13 illuminating. I thought it was really first class.
14 I enjoyed it.

15 I have a couple of questions about some
16 things that we didn't really quite touch on
17 specifically that I wonder if you might be able to
18 throw a little light on the status of. One is the
19 Apollo site, B&W Apollo site, where that stands with
20 respect to the local concerns about acceptable
21 conditions for clean-up. I know I heard a great deal
22 about that at one of the workshop meetings from people
23 and I've since heard from them again. I didn't hear
24 where that stands from the presentation today. If you
25 are in a position to say anything about it and can

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1 very briefly, I'd like to be brought up to date on it.

2 MR. AUSTIN: If I could start out with the
3 survey results at Apollo and then ask Keith McDaniel
4 if he could comment on where it stands now.

5 Apollo thought they had adequately
6 remediated their site to the branch technical position
7 option 1. Oak Ridge went in to perform its
8 confirmatory survey and, as I said, they did two
9 things, Oak Ridge did two things. One was they took
10 samples, 20 percent of their samples in spots where
11 B&W had taken samples to check on the adequacy and the
12 Oak Ridge results from those confirmed B&W's results.
13 Oak Ridge then stepped off of the specific areas where
14 B&W had taken these samples and took 80 percent of its
15 samples in those kinds of areas. They found a rather
16 high percentage of unacceptably high contamination.

17 One of the lessons learned in that case
18 was that we need to better define what a final survey
19 by a licensee is because B&W, in essence, was
20 remediating and surveying at the same time. That is,
21 they would find a hot spot and they would remediate it
22 and continue high-level, remediate it and didn't step
23 back and say, "What is this telling us as we sit here
24 and find all of these hot spots in the area?" We have
25 worked with B&W to come up with a plan or developing

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1 a plan on what additional steps need to be taken.

2 COMMISSIONER ROGERS: It seems to me that
3 that approach has an inherent fallacy in it, built
4 into it as to what you can conclude when you're all
5 done. It sounds to me like a very bad experiment.

6 MR. AUSTIN: And we're working on trying
7 to develop better guidance to give us a better
8 statistical basis for saying that whatever
9 contamination out there there is that remains, that
10 that will not result in unacceptable doses assuming
11 rather conservative human intrusion scenarios.

12 COMMISSIONER ROGERS: Well now, your
13 paper, the SECY indicated that this was a site that
14 would be -- that everything would be dealt with in
15 1994, I believe it was. Does that still hold true?
16 Is your prognosis in the SECY still correct or have
17 these problems surfaced since the time of the writing
18 of that SECY?

19 MR. AUSTIN: My impression is that that
20 projection still exists and is doable. There is a
21 license condition that B&W monitored groundwater for
22 one year to provide a higher assurance that there's no
23 unacceptable contamination. But if I could ask Keith
24 his impression. Keith is the project manager.

25 MR. McDANIEL: Good morning. I'm Keith

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1 McDaniel.

2 The current schedule right now is for B&W
3 to finish their excavation of that property in March
4 of 1994. Following excavation, they'll begin their
5 groundwater monitoring program which will last a year.
6 So that takes us to March of 1995. We'll review the
7 groundwater data at that point and we'll make a
8 determination if the site is releasable or not.

9 COMMISSIONER ROGERS: Okay. Fine. All
10 right. Thank you. That's helpful.

11 The other site that I'd like to hear a
12 little bit about if you can, you touched on the
13 problem, the thorium problem, but the Shieldalloy
14 Metallurgical Corporation in New Jersey which we've
15 heard about several times from people on the Hill. I
16 wonder if you can tell us where that stands. I know
17 there's a question of to what extent NRC has any
18 responsibility at all there, but nevertheless it's a
19 big issue.

20 MR. TAYLOR: There was a paper just
21 recently sent up on that, sir. I don't know if you've
22 seen it.

23 COMMISSIONER ROGERS: Maybe I haven't seen
24 it yet.

25 MR. TAYLOR: I'm sorry, sir. That has a

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1 very -- it was dated October 29th. It's a quite
2 recent paper, but we did -- that is a very important
3 issue and we have covered it in the paper. We can
4 give you --

5 COMMISSIONER ROGERS: Well, if you think
6 it's adequately covered in the paper, then there's no
7 need to spend time today on it.

8 MR. TAYLOR: Yes, sir.

9 COMMISSIONER ROGERS: All right. The
10 other issue I'd like to hear a little bit about was
11 one that was raised in the SECY on page 19 that dealt
12 with the State of Massachusetts and total lifetime
13 risk questions. Is there anything you can say on
14 that? The state suggested that they felt they might
15 want to set lower standards than those of NRC. Lower
16 meaning more stringent, I take it. The NRC legal
17 staff disagreed and stated that under the Atomic
18 Energy Act states were not given the authority to set
19 such standards.

20 Is it possible to say anything about where
21 that stands, the discussion of that issue with the
22 State of Massachusetts?

23 MR. PARLER: I'll have to follow-up on
24 that and I'll inform you and your colleagues. I can't
25 respond to it now.

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1 COMMISSIONER ROGERS: All right. Fine.
2 Thank you.

3 That's all that I have. Thank you very
4 much.

5 CHAIRMAN SELIN: Commissioner Remick?

6 COMMISSIONER REMICK: I just have one
7 remaining question. In the agreement state response,
8 is it apparent that any particular states seem to have
9 a concentration of sites compared to other states?

10 MR. BANGART: Texas provided a number of
11 candidate sites. A large fraction of those, however,
12 appeared to be sites that were contaminated with
13 uranium mill tailings which wouldn't necessarily
14 qualify for the SDMP, but they had ten that appeared
15 to qualify using the same criterias for the SDMP. I
16 suspect that when Illinois finishes their review and
17 New York finishes their review that they may have a
18 number of sites that rival the number of sites that
19 were identified in Texas.

20 COMMISSIONER REMICK: I see. Okay.

21 Well, I join the comments in finding the
22 briefing very informative and I also think it's an
23 excellent idea to include the agreement state sites as
24 well as our own license sites.

25 MR. AUSTIN: Commissioner Remick, you

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1 previously had asked about the Pratt-Whitney site and
2 what they did there. I responded that they possessed
3 high-enriched uranium. The contamination of concern
4 is fission products, not the high-enriched uranium.
5 I just wanted to clarify that.

6 COMMISSIONER REMICK: I see. Fission
7 products -- what was the source of the fission
8 products?

9 MR. AUSTIN: I believe they did
10 criticality type --

11 COMMISSIONER REMICK: Really?

12 MR. AUSTIN: -- studies of the fuel.

13 CHAIRMAN SELIN: Commissioner de Planque?

14 COMMISSIONER de PLANQUE: I also agree
15 it's been an excellent briefing. I'm particularly
16 looking forward to more definitive information from
17 the states, the criteria they're using for release and
18 what types of options they have available in terms of
19 restricted use or perpetual care. You stated it
20 yourselves that in many cases they've had a lot more
21 experience with some of these sites. So, I would also
22 look forward to what we can learn from what they've
23 done in the past and are doing now.

24 Thank you.

25 CHAIRMAN SELIN: Thank you very much for

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1 the presentation. We'll be looking forward to the
2 updates. It's good to get into the detail and perhaps
3 by the time of the next update it will be possible,
4 there will be enough cases to draw some more general
5 sketches of how we're doing and whether we are on an
6 achievable path or do we need a mid-course correction.

7 Thank you very much.

8 (Whereupon, at 10:57 a.m., the above-
9 entitled matter was concluded.)
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TITLE OF MEETING: BRIEFING ON SITE DECOMMISSIONING
MANAGEMENT PLAN

PLACE OF MEETING: ROCKVILLE, MARYLAND

DATE OF MEETING: NOVEMBER 8, 1993

were transcribed by me. I further certify that said transcription
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SITE DECOMMISSIONING MANAGEMENT PLAN

COMMISSION BRIEFING

NOVEMBER 8, 1993

SITE DECOMMISSIONING MANAGEMENT PLAN

STATUS:

- **Significant progress toward remediation being made at SDMP sites**
 - **One site (Budd Company) removed from the list in FY93**
 - **One site (AMAX) awaiting completion of the DOE title transfer process**
 - **One site (UNC, Wood River Junction) awaiting resolution of state jurisdiction issues**
- **Significant resources expended on Safety Light case litigation and resolving issues involving Chemetron's Harvard and Bert Avenue sites and on Sequoyah fuels**
- **Updated SDMP in June 1993 (SECY-93-179). Publish as NUREG-1444.**
- **During the next year anticipate removing as many as seven sites from the list**

CANDIDATE SITES FOR DELISTING

- **AMAX**

- Funding for maintenance of site
- NWPA Section 151(c) transfer to DOE

- **UNC, Wood River Junction**

- Nitrate contamination
- Sr - 90

- **Pawling**

- Nuclear Lake
- Buildings/soil remediation

- **TI - Attleboro**

- Exhumed buried uranium
- Final survey completed
- Scheduling confirmatory survey

- **Old Vic**

- Final and confirmatory survey completed

CANDIDATE SITES FOR DELISTING (Cont'd)

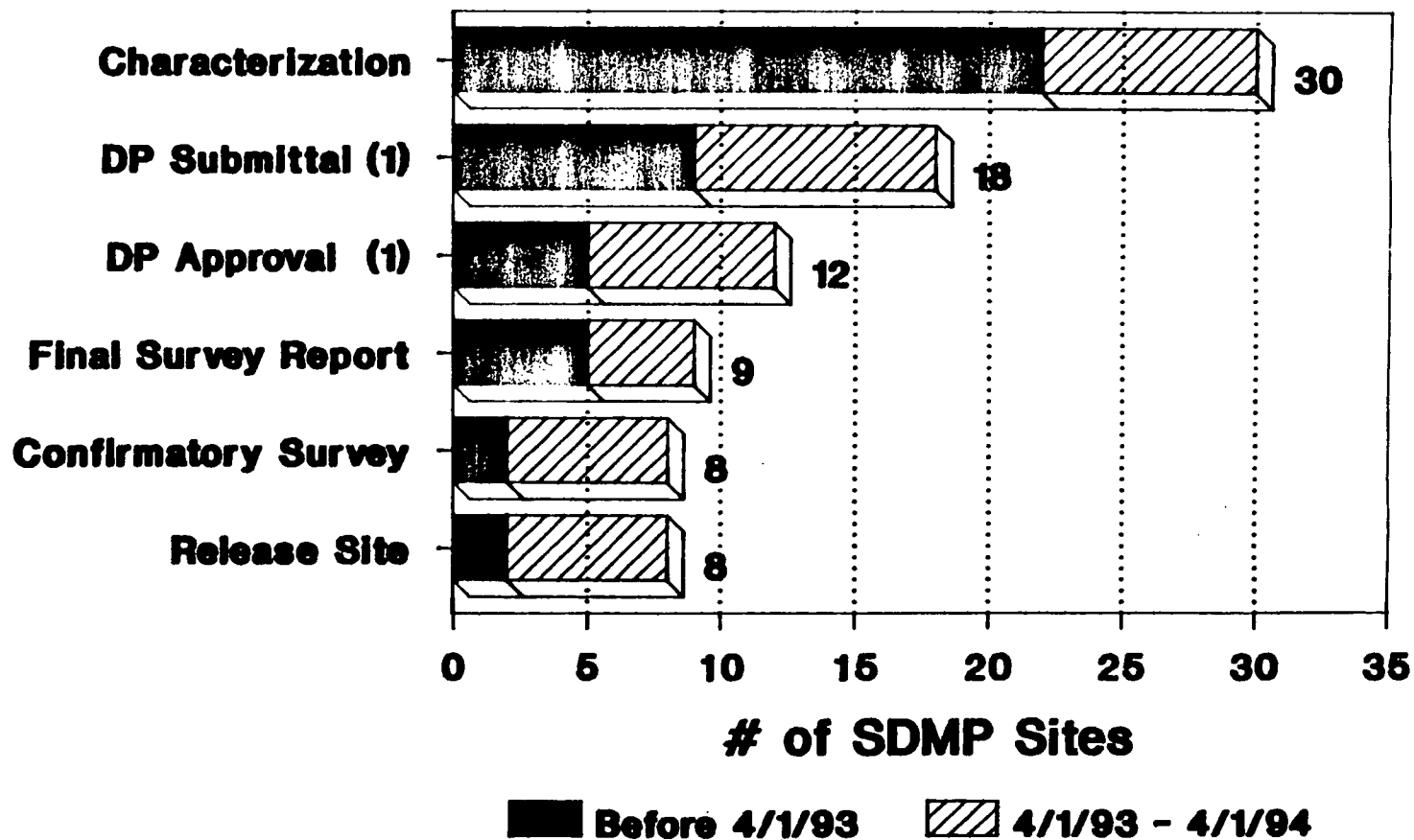
- **Alcoa**
 - **Final survey completed**
 - **Landfill?**

- **Elkem Metals**
 - **Remediation essentially completed**

- **Pratt-Whitney**
 - **Remediation essentially completed**

PROJECTED SITE DECOMMISSIONING STATUS

Activities To Be Completed By April 1994



(1) DP - Decommissioning Plan

SITE DECOMMISSIONING MANAGEMENT PLAN (Continued)

ISSUES:

- **GAO is auditing SDMP as followup to Chemetron**
- **Significant residual contamination found in confirmatory surveys**
- **Thorium disposal issue - (see following chart)**
- **Coordination with the States on solid/hazardous waste issues**
- **SFC - financial assurance and remediation criteria**

ACTION/RECOMMENDATION:

- **Several cases elevated to upper management: Chemetron, Shieldalloy, SFC, Safety Light**
- **Clarify expectations on surveys, including workshop in about 6 months**
- **Additional guidance on confirmatory surveys**

SITE DECOMMISSIONING MANAGEMENT PLAN (Continued)

THORIUM DISPOSAL ISSUE:

- **14 SDMP sites contain large volumes of thorium contaminated soil and slag**
- **Waste volumes at these sites range from 20,000 ft³ to 10,000,000 ft³
6 sites exceed 1,000,000 ft³**
- **High direct exposure rates**
- **Credit for cover over burial?**
- **Alternative disposal methods - ALARA**
- **Environmental Impact Statement?**

AGREEMENT STATE SITE DECOMMISSIONING MANAGEMENT PROGRAMS

BACKGROUND

- **1990 Letter to Agreement States Requesting Identification of State Sites.**
- **1991 Letter to Agreement States Requesting Update**

CURRENT INITIATIVE

- **OSP Letter (9/20/93) to Agreement States Requesting Specific Information:**
 - **Does State have specific program for management of problem contaminated sites? Provide or summarize program for NRC.**
 - **What criteria are used by the State to determine if a site can be released for unrestricted use?**
 - **Provide a listing of contaminated sites.**
 - **Provide a description of each identified site.**

RESULTS OF SURVEY

- **25 States Responded (22 in writing - 3 by telephone)**
 - **Lack of Specificity - Follow-up Calls Required**
- **89 Potential SDMP Sites Identified by States.**
 - **Most Site Descriptions Responsive**
- **No Immediate Public Threat**
- **Few Actions Identified to Prompt Remediation**
- **Some States Reviewed Terminated License Files**

RESULTS OF SURVEY (Continued)

- **All States Indicated SDMP Guidance, In Part, Considered or Applied - 3 States Provided Copies of Guidance**

AGREEMENT STATES REACTIONS

Comments From 10/24-27/93 Agreement State Meeting

- **States Experienced in Management of Remediation of NARM/NORM Facilities/Sites**
- **Small Percentage of Licensees Authorized to Possess Radioactive Material in Any Form**
- **Age and/or Size of an Agreement State Program Results in First-Hand Knowledge of Current and Former Facility/Site Status**

NEXT STEPS

- **Continue Followup on Missing or Deficient Details**
- **Agreement State Workshop in 1st Half of 1994**
- **Evaluate Whether Additional Agency/Agreement State Actions Needed**
 - **Extend ORISE Contract to Agreement States?**
 - **Fund Technical Support of Terminated Licenses in Agreement States?**
 - **Encourage Actions Through All-Agreement State Letters, Meetings/Workshops, Performance Indicators and Compatibility**