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UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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ADVISORY COMMITTEE ON NUCLEAR WASTE (ACNW)

140TH MEETING

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THURSDAY,

MARCH 27, 2003

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ROCKVILLE, MARYLAND

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The Advisory Committee met at the Nuclear
Regulatory Commission, Two White Flint North, Room
T2B3, 11545 Rockville Pike, at 8:30 a.m., George M.
Hornberger, Chairman, presiding.

COMMITTEE MEMBERS PRESENT:

GEORGE M. HORNBERGER, Chairman

RAYMOND G. WYMER, Vice Chairman

B. JOHN GARRICK, Member

MILTON N. LEVENSON, Member

MICHAEL T. RYAN, Member

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1 ACNW STAFF PRESENT:

2 JOHN T. LARKINS, Executive Director, ACRS/ACNW

3 SHER BAHADUR, Associate Director, ACRS/ACNW

4 NEIL COLEMAN, ACRS Staff

5 HOWARD J. LARSON, Special Assistant, ACRS/ACNW

6 MICHAEL LEE, ACNW Staff

7 RICHARD K. MAJOR, ACNW Staff

8 ALSO PRESENT:

9 ERIC POGUE

10 CHRIS McKINNEY

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Opening Statement 4

NRC/EPA Memorandum of Understanding 5

Adjourn 22

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

8:52 A.M.

CHAIRMAN HORNBERGER: The meeting will come to order. This is the third day of the 140th meeting of the Advisory Committee on Nuclear Waste.

My name is George Hornberger, Chairman of the ACNW. The other members of the committee present are Raymond Wymer, Vice Chairman; John Garrick, Milton Levenson, and Michael Ryan.

Today, the Committee will (1) discuss the NRC/EPA Memorandum of Understanding related to the decommissioning and decontamination of contaminated sites; (2) discuss the preliminary results of the self-assessment survey; and (3) discuss a possible update of the Committee's 2002/2003 Action Plan.

Howard Larson is the designated federal official for today's initial session.

This meeting is being conducted in accordance with the provisions of the Federal Advisory Committee Act. We have received no written comments or requests for time to make oral statement from members of the public regarding today's sessions.

Should anyone wish to address the Committee, please make your wishes known to one of the Committee's staff. It is requested that the speakers

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1 use one of the microphones, identify themselves and
2 speak with sufficient clarity and volume so that they
3 can be readily heard.

4 And with that, we move right into the
5 first topic on our agenda which is the NRC/EPA MOU and
6 Ray Wymer is in charge.

7 DR. WYMER: Okay, as we all know, there
8 are some areas of overlap between what EPA governs and
9 what the NRC governs and this has led to some
10 conflicts and inefficiencies in the past.

11 Apparently, now there has been developed
12 an MOU, a Memorandum of Understanding, an Eric Pogue
13 is going to tell us about that this morning and what
14 it means, what the resolutions are, what the
15 agreements are and what the exceptions are, I think.

16 MR. POGUE: I think everybody should have
17 a copy of the handouts. There's my topic points and
18 also the actual MOU.

19 My contact information is on the first
20 slide.

21 (Slide change.)

22 MR. POGUE: As far as a little bit of
23 background, in 1983, EPA amended CERCLA. Related to
24 that, EPA stated that they wouldn't list under CERCLA
25 any active NRC licensees so there's a general internal

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1 policy with any NRC sites that are currently under a
2 license, but that didn't extend to the licenses that
3 were terminated.

4 In 1992, there was an MOU between NRC and
5 EPA, but that's really just a general coordination
6 MOU, it's not as specific as the current 2002 MOU
7 we've been discussing.

8 In 1997, NRC promulgated the License
9 Termination Rule and kind of the conflict is in 1997
10 EPA's guidance fall under the License Termination Rule
11 which basically said that sites cleaned up to that
12 level might not be protective and they might need to
13 revisit those sites and possibly even list them under
14 CERCLA.

15 Subsequent to that, there's multiple
16 Congressional reports. Congress directed both
17 agencies to enter into an MOU to reach an agreement so
18 that to address the jurisdiction issue.

19 And also in 2000, there's a GAO report
20 which basically speaks to the conflict between the
21 different agencies.

22 (Slide change.)

23 MR. POGUE: The next slide, this is just
24 kind of obvious, but the problems of deregulation. It
25 lists the conflicts between the Agency, inefficient

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1 use of resources, staff time and licensee time dealing
2 with the two sets of regulations, lack of finality for
3 licensees. That's a concern that Congress has that
4 the licensees can clean up our standard and still be
5 concerned another agency is going to come in and
6 require more clean up and all of this erodes public
7 confidence and the two agencies involved in and
8 disagreeing in front of the public.

9 That's partly why we entered into the MOU.
10 It was finalized on October 9, 2002. The Chairman
11 signed it. The MOU establishes a framework for agency
12 coordination, but the vast majority of NRC licensees,
13 this is going to eliminate deregulation.

14 The supplement to that, however, is it
15 doesn't completely eliminate the threat of
16 deregulation. And Congress in House Report that's
17 referenced there and subsequently again this February,
18 basically said that the MOU doesn't go far enough and
19 the language is really directed just to EPA, but they
20 tell EPA that the point of the MOU is to completely
21 eliminate EPA's involvement in NRC sites, unless NRC
22 actually requests their involvement. So they've
23 directed EPA to enter into an amended MOU with NRC and
24 there's really no action on that at this point. And
25 also EPA now has to report on the 28th of every month

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1 to discuss the process on the amended MOU. But no
2 action on that yet.

3 And then the last point is something we've
4 tried to make multiple times at public meetings and
5 things we've done. This doesn't change the
6 requirements for our licensees at all. Our licensees
7 are still responsible to clean up to our Subpart E
8 license termination rule.

9 The specific provisions in the MOU is that
10 NRC agrees to consult with EPA for any sites that have
11 ground water contamination that we expect will exceed
12 the EPA mcls at the time of license termination.
13 Sites that have soil concentrations again at license
14 termination that will exceed the values that are
15 listed in Table 1 of the MOU and then finally for
16 sites that we believe will go restricted release or
17 use alternative --

18 DR. GARRICK: Are you going to say
19 something about what kind of evidence was necessary to
20 have those requirements exist? Because isn't it
21 dependent upon an analysis of the site as to whether
22 there's a groundwater issue or as to whether there's
23 a need for EPA involvement? Who does the analysis
24 that is the -- there's a decision making document for
25 requesting EPA involvement.

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1 MR. POGUE: Basically, we would use
2 licensee submittals at decommissioning plan, for
3 example, what would be there plan level. When we get
4 into the actual consultation, then we might look at
5 actual site measurements or later in the process look
6 at final site measurements and things like that. But
7 it's their plan level. So at DCGL, they submit for
8 soil for example, would be -- that's how you look at
9 it. We haven't actually got into this stage yet.

10 DR. GARRICK: I see, but some sort of
11 assessment of performance assessment or a safety
12 analysis report or something has to be the basis for
13 --

14 MR. POGUE: Or decommissioning plan.

15 DR. GARRICK: And who make the decision
16 that EPA should be consulted?

17 MR. POGUE: NRC Staff. We've explicitly
18 said that this is not a new request for licensees.
19 It's just an agreement between the two agencies, so
20 NRC staff would be responsible. The site project
21 manager for all of our decommissioning sites have
22 copies of the MOU and have been briefed on it and they
23 are reviewing it against the criteria.

24 DR. LEVENSON: What does the consult
25 imply?

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1 MR. POGUE: That's an excellent question.

2 DR. LEVENSON: Do you go your own ways?

3 MR. POGUE: That's where we're at right
4 now. In the MOU, it initially says that NRC will
5 identify the sites that trigger these values and share
6 that with EPA. Again, we haven't gotten to this stage
7 yet. Probably a letter would go to EPA. We talk
8 about the sites. The EPA -- I mean the MOU states
9 that the consultation should take 90 days. So it
10 would be a consultation between NRC and EPA technical
11 staff about the actual site and hopefully, EPA would
12 have no concerns of the site after they learn the
13 realistic -- how it's going to be cleaned up.

14 MR. MAJOR: So does it apply to the sites
15 that are currently undergoing some kind of license
16 termination activity? I mean is there a backfit rule
17 or is it just any respective site is the only ones it
18 applies to?

19 MR. POGUE: Prospective, I believe. I
20 don't think -- Chris?

21 MR. McKINNEY: It applies to everybody.
22 There is no grandfathering under it.

23 MR. POGUE: At least as of right now,
24 there's not a plan to go back and look through --

25 MR. McKINNEY: Not terminated sites, but

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1 any site that's actually going -- undergoing
2 decommissioning activities or planning to, whether
3 under the LTR or under the site decommissioning
4 management plan.

5 DR. LEVENSON: The context of my question
6 was there was an MOU between EPA and NRC, a very
7 formal one, published in the Federal Register several
8 years ago covering questions of things like how do you
9 sample and do you have to sample if a waste has both
10 RCRA material and radioactive material and it doesn't
11 function at all because EPA basically disavows it.

12 I've been involved a little bit and that
13 comes up in connection with WIP and it exists and it's
14 very formal and it's signed, but it doesn't mean
15 anything.

16 MR. BAHADUR: I was just reading the MOU,
17 Section D which is the EPA responsibilities and the
18 way staff has addressed that question is if the NRC
19 requests EPA consultation, then the EPA is supposed to
20 give the original notification of its views in 90
21 days.

22 The idea is at that time the EPA would
23 either say yeah, it's okay, or if it is not all right,
24 then I think given this 90-day period that definition
25 will be made by EPA, but was sent to the NRC.

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1 The final decision would still be in the
2 hands of the NRC.

3 MR. POGUE: As far as the NRC licensees,
4 that's correct.

5 MR. BAHADUR: Right, and it says very
6 clearly that the CERCLA would not be applied to NRC
7 licensees.

8 MR. POGUE: That's correct. And the last
9 sentence of Bullet 2, NRC responsibilities is that if
10 NRC does not adopt the recommendations provided by the
11 EPA, NRC will inform EPA of the basis for its decision
12 not to do so. Go it goes along with --

13 COURT REPORTER: Mr. Pogue, will you raise
14 your mic a little. Sometimes you fade off.

15 MR. POGUE: Sorry.

16 DR. GARRICK: Are you going to be able to
17 give us some examples of activities that are going on
18 and how many of them involve the EPA and how many of
19 them don't and what you expect in the future?

20 What are we talking about in terms of --

21 MR. POGUE: Unfortunately, we're a little
22 bit early for that right now because we just started
23 this in October and really there is multiple months of
24 meetings explaining it and that sort of things, so we
25 do not see the point where we have a formal list of

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1 sites that we communicate with.

2 DR. RYAN: You haven't applied it to a
3 case yet?

4 MR. POGUE: No. We're at a stage where
5 our project managers are looking at their sites and
6 trying to come up with a list to start the process.

7 DR. RYAN: Thanks.

8 MR. POGUE: So in the next few months, I
9 imagine, that will happen.

10 DR. RYAN: I'm going to ask a related
11 question and it's not right on the point of the MOU,
12 but follows up on Levenson's question.

13 How is the activity coming along where
14 people are addressing, I think it's NRC and EPA, very
15 dilute concentrations of perhaps RCRA constituents in
16 radioactive material or very small quantities of
17 radioactive material in RCRA waste and trying to
18 address that? Is that on the table with regard to
19 site clean-up or is that just simply a waste
20 management question?

21 MR. McKINNEY: Right now it's a waste
22 management question. There is discussions between the
23 two about possibly going with the rulemaking on mixed
24 waste to allow them to go both directions. Of course,
25 EPA has already put in one that allows small amounts

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1 of RCRA material to go to a low level waste site.
2 That one has already been put into place. The reverse
3 one had not.

4 DR. RYAN: It just struck me as a waste
5 disposition issue that's well one the table. I just
6 wondered if it was on the table with regard to
7 decommissioning and what's left behind.

8 MR. MCKINNEY: That hasn't been pursued.

9 DR. RYAN: Thanks.

10 MR. POGUE: Go on to the next slide.

11 (Slide change.)

12 MR. POGUE: This just summarizes, I guess,
13 the outreach activities that I discussed and this
14 really took up the first view months of MOU and
15 publication. The press release, a couple of Federal
16 Register notices. The MOU is available on line and
17 we've also mailed it out to stakeholders. There's a
18 public meeting here at NRC in November and a lot of
19 questions. Most of the meeting, the majority of the
20 meeting was just answering questions about how it
21 would be implemented.

22 And then also staff has participated in a
23 lot of state and organizational meetings to explain
24 how the MOU applied.

25 Implementation, once again --

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1 DR. GARRICK: I'm curious. Is the public
2 showing much interest in this method, the Memorandum
3 of Understanding?

4 MR. POGUE: I would say licensees are the
5 most interested because they're concerned that this is
6 an additional requirement or that it would actually
7 fully get in more than they were before. So I think
8 that's the biggest concern.

9 The states are also interested because the
10 MOU doesn't extend their agreement states, so there
11 are some initial interest with the agreement states.
12 Initially asking if they could have the MOU extended
13 to cover the agreement states and that's still not
14 resolved and on-going, but the organization of
15 agreement states is --

16 DR. GARRICK: Was there any movement
17 within the public for greater EPA participation in
18 this whole process?

19 MR. POGUE: I guess I would characterize
20 it as I know individuals in the public meeting
21 actually went so far to say that there was an
22 advantage to a regulation because you have a
23 connection of two agencies instead of just one. So I
24 guess, at least on an individual basis, some people
25 did actually say they'd like the involvement.

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1 DR. WYMER: It doesn't sound like that's
2 moving in the direction of getting rid of dual
3 regulation.

4 MR. POGUE: So the implementation, again
5 after the public meetings and that sort of thing,
6 working on guidance development. Right now we have --
7 it's really what we call the licensing letter, but
8 it's a letter from the NMSSS office director to the
9 different program offices to review their
10 decommissioning sites. This is what I was talking
11 about, to get a list of sites that triggered the MOU
12 so we can start the consultation.

13 That's the next step. And then also under
14 guidance development, under the MOU we have to
15 implement formal agency guidance on how we're going to
16 apply the MOU. So that's probably going to be
17 decommissioning and guidance in the next few months.
18 We're working on that.

19 And then the last step of implementation
20 is the site specific consultation which we haven't
21 done yet, so that's upcoming in the next few months,
22 I imagine.

23 (Slide change.)

24 MR. POGUE: And the last slide is just,
25 next steps, continued coordination under the MOU, move

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1 on to site specific consultation and then the last
2 thing is that NRC has stated over and over that we're
3 going to continue to request legislation to completely
4 eliminate the dual regulation because as Congress has
5 pointed out, the MOU doesn't go as far as we would
6 like because they're still -- have the EPA
7 involvement.

8 DR. WYMER: It looks to me like the real
9 heart of this whole thing is the MOU table. That's
10 what determines whether or not --

11 MR. POGUE: For soil concentration.

12 DR. WYMER: Yes, for soil concentration.
13 You don't have something comparable for water.

14 MR. POGUE: It's the MCL.

15 DR. WYMER: The MCL. Those are the --

16 CHAIRMAN HORNBERGER: So looking at those
17 tables, the soil concentrations, are they just from
18 tables that have existed for quite some time?

19 MR. MCKINNEY: This is Chris McKinney.
20 I'm with the Division of Waste Management. They're
21 based on EPA's calculations to meet their risk level
22 and it's based on their current methodology they have
23 through their website of the radiation, it's the
24 preliminary radiation guidelines calculator they have.
25 That does everything but groundwater for the different

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1 pathways and it's equivalent for them to a 10^{-4} risk
2 level. Is for most all of those values are equal to
3 it. Radium 226 and Thorium-230 are listed at 5
4 picocurie per gram for their weight and the total
5 uranium is based on chemical hazards.

6 DR. RYAN: Chris, what's the basic
7 exposure pathway in that calculator? I'm not sure --

8 MR. MCKINNEY: It's a very simplified all-
9 pathway calculator. It was everything from food
10 pathways, external, and inhalation, soil ingestion.

11 DR. RYAN: It's just noteworthy to me that
12 Plutonium-259 and Tritium-228, they're about the same.
13 That's kind of intuitive.

14 MR. MCKINNEY: Right. It's just different
15 pathways for different radionuclides, but also the
16 fact is that the ground water -- they don't have an
17 irrigation pathway for retardation of ground water, so
18 --

19 DR. RYAN: Is there a drinking water
20 pathway?

21 MR. MCKINNEY: No. The drinking water
22 pathway and everything else is covered by the MCL is
23 separate.

24 DR. RYAN: That's fine.

25 MR. MCKINNEY: It doesn't have long-term

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1 build up built into it at all. It is -- what is the
2 concentration hazard to date.

3 DR. RYAN: And I appreciate the fact that
4 it's simply.

5 MR. MCKINNEY: Right.

6 DR. RYAN: It has some merit.

7 DR. LEVENSON: How many states have now
8 been delegated authorization under RCRA? Do you know
9 off-hand?

10 MR. POGUE: I'm not sure.

11 DR. LEVENSON: Because this MOU has no
12 impact at all on all of those states where the
13 regulation has been delegated to the state. They're
14 not bound by this.

15 MR. MCKINNEY: The MOU is mostly in
16 regards between CERCLA and the NRC, not necessarily
17 the RCRA program and EPA has overview over most of the
18 CERCLA ones, states even.

19 DR. WYMER: Mike, did you have a comment?

20 MR. LEE: Yes, my recollection of the RCRA
21 requirements is that RCRA, within the legislation
22 itself, it empowers -- EPA empowers the states to
23 implement the regulations through the passing of the
24 regulations themselves. I don't believe there's any
25 specific or special authorizing provisions other than

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1 those.

2 MR. MCKINNEY: Right, but RCRA only
3 applies to one's license by it, meanwhile CERCLA can
4 go after any licensed or formerly licensed site and
5 that's what's the cause of dual regulation is.

6 DR. WYMER: So this really applies to the
7 little -- it's really effective, it accomplishes
8 something for the little sites of which there are
9 many. The big, more troublesome sites are still dual
10 regulated.

11 MR. POGUE: Yes, and I guess also a lot of
12 these have chemical problems anyway, so EPA would
13 still be involved because this just applies to them.

14 MR. MCKINNEY: Radiological.

15 MR. POGUE: Yes.

16 DR. WYMER: Okay, are there any other --

17 DR. GARRICK: I'm just curious. In these
18 tables, do you know if -- and maybe this question was
19 asked while I was having a side conversation, but do
20 you know if these are done on the basis of an
21 individual risk, that is to say, the differing history
22 and residential, in some cases, as many orders of
23 magnitude?

24 MR. MCKINNEY: It's done on individual
25 risk, but also the type of pathways that are available

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1 can make -- cause the orders of magnitude. If your
2 residential is completely the cause by the food
3 pathway, the growing of food, well, that pathway is
4 not in an industrial scenario. So --

5 DR. GARRICK: There isn't much in the
6 average resident either.

7 MR. MCKINNEY: No, they don't have a lot,
8 but it's still, for some of them are driven by that.

9 DR. GARRICK: Yes, okay. Because in the
10 industrial/commercial from an exposure standpoint you
11 would think that there would be much large
12 populations.

13 MR. MCKINNEY: Yes, but it's individual
14 risk of a 10^{-4} .

15 DR. GARRICK: All right, I'll have to ask
16 my friends about that.

17 I'm not convinced. It's very interested.
18 Okay.

19 DR. WYMER: Well, thanks, Eric.

20 MR. POGUE: Thank you.

21 DR. WYMER: George, it's yours.

22 CHAIRMAN HORNBERGER: Thank you, Raymond.
23 I don't think we need to be on the record from now on,
24 do we?

25 DR. WYMER: I don't think so.

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1 CHAIRMAN HORNBERGER: So we will -- this
2 will end the official recorded session.

3 (Whereupon, at 9:13 a.m., the meeting was
4 concluded.)

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CERTIFICATE

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

Name of Proceeding: Advisory Committee on
Reactor Safeguards
140th Meeting

Docket Number: n/a

Location: Rockville, MD

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



Rebecca Davis
Official Reporter
Neal R. Gross & Co., Inc.

**MEMORANDUM OF UNDERSTANDING BETWEEN
THE ENVIRONMENTAL PROTECTION AGENCY AND
THE NUCLEAR REGULATORY COMMISSION**

**CONSULTATION AND FINALITY ON DECOMMISSIONING AND DECONTAMINATION OF
CONTAMINATED SITES**

I. Introduction

The Environmental Protection Agency (EPA) and the Nuclear Regulatory Commission (NRC), in recognition of their mutual commitment to protect the public health and safety and the environment, are entering into this Memorandum of Understanding (MOU) in order to establish a basic framework for the relationship of the agencies in the radiological decommissioning and decontamination of NRC-licensed sites. Each Agency is entering into this MOU in order to facilitate decision-making. It does not establish any new requirements or rights on parties not subject to this agreement.

II. Purpose

The purpose of this MOU is to identify the interactions of the two agencies for the decommissioning and decontamination of NRC-licensed sites and to indicate the way in which those interactions will take place. Except for Section VI, addressing corrective action under the Resource Conservation and Recovery Act (RCRA), this MOU is limited to the coordination between EPA, when acting under its Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) authority, and NRC, when a facility licensed by the NRC is undergoing decommissioning, or when a facility has completed decommissioning, and the NRC has terminated its license. It continues a basic policy of EPA deferral to NRC decision-making in the decommissioning of NRC-licensed sites except in certain circumstances, and establishes the procedures to govern the relationship between the agencies in connection with the decommissioning of sites at which those circumstances arise.

III. Background

An August 3, 1999, report (106-286) from the House Committee on Appropriations to accompany the bill covering EPA's FY1999 Appropriations/FY 2000 budget request states:

Once again the Committee notes that the Nuclear Regulatory Commission (NRC) has and will continue to remediate sites under its jurisdiction to a level that fully protects public health and safety, and believes that any reversal of the long-standing policy of the Agency to defer to the NRC for cleanup of NRC's licensed sites is not a good use of public or private funds. The interaction of the EPA with the NRC, NRC licensees, and others, with regard to sites being remediated under NRC regulatory requirements—when not specifically requested by the NRC—has created stakeholder concerns regarding the authority and finality of NRC licensing decisions, the duration and costs of site cleanup, and the potential future liability of parties associated with affected sites. However, the Committee recognizes that there may be circumstances at specific NRC licensed sites where the Agency's expertise may be of critical use to the NRC. In

the interest of ensuring that sites do not face dual regulation, the Committee strongly encourages both agencies to enter into an MOU which clarifies the circumstances for EPA's involvement at NRC sites when requested by the NRC. The EPA and NRC are directed to report to the Committee on Appropriations no later than May 1, 2000, on the status of the development of such an MOU.

Since September 8, 1983, EPA has generally deferred listing on the CERCLA National Priorities List (NPL) those sites that are subject to NRC's licensing authority, in recognition that NRC's actions are believed to be consistent with the CERCLA requirement to protect human health and the environment. However, as EPA indicated in the Federal Register notice announcing the policy of CERCLA deferral to NRC, if EPA "determines that sites which it has not listed as a matter of policy are not being properly responded to, the Agency will consider listing those sites on the NPL" (see 48 FR 40658).

EPA reaffirms its previous 1983 deferral policy. EPA expects that any need for EPA CERCLA involvement in the decommissioning of NRC licensed sites should continue to occur very infrequently because EPA expects that the vast majority of facilities decommissioned under NRC authority will be decommissioned in a manner that is fully protective of human health and the environment. By this MOU, EPA agrees to a deferral policy regarding NRC decision-making without the need for consultation except in certain limited circumstances as specified in paragraphs V.C.2 and V.C.3.

One set of circumstances in which continued consultation should occur, pursuant to the procedures defined herein, relates to sites at which the NRC determines during the license termination process that there is radioactive ground-water contamination above certain limits. Pursuant to its License Termination rule, NRC applies a dose criterion that encompasses all pathways, including ground water. In its cleanup of sites pursuant to CERCLA, by contrast, EPA customarily establishes a separate ground-water cleanup standard in which it applies certain Maximum Contaminant Levels (MCLs, found at 40 CFR 141) promulgated for radionuclides and other substances pursuant to the Safe Drinking Water Act. NRC has agreed in this MOU to consult with EPA on the appropriate approach in responding to the circumstances at particular sites with ground-water contamination at the time of license termination in excess of EPA's MCLs or those sites for which NRC contemplates either restricted release or the use of alternate criteria for license termination, or radioactive contamination at the time of license termination exceeds the corresponding levels in Table 1 as provided in Section V.C.2.

IV. Principles

In carrying out their respective responsibilities, the EPA and the NRC will strive to:

1. Establish a stable and predictable regulatory environment with respect to EPA's CERCLA authority in and NRC's decommissioning of contaminated sites.
2. Ensure, to the extent practicable, that the responsibilities of the NRC under the AEA and the responsibilities of EPA under CERCLA are implemented in a coordinated and consistent manner.

V. Implementation

A. Scope

This MOU is intended to address issues related to the EPA involvement under CERCLA in the cleanup of radiologically contaminated sites under the jurisdiction of the NRC. EPA will continue its CERCLA policy of September 8, 1983, which explains how EPA implements deferral decisions regarding listing on the NPL of any sites that are subject to NRC's licensing authority. The NRC's review of sites under NRC jurisdiction indicates that few of these sites have radioactive ground-water contamination in excess of the EPA's MCLs. At those sites at which NRC determines during the license termination process that there is radioactive ground-water contamination above the relevant EPA MCLs, NRC will consult with EPA and, if necessary, discuss with EPA the use of flexibility under EPA's phased approach to addressing ground-water contamination. NRC has agreed in this MOU to consult with EPA on the appropriate approach in responding to the circumstances at particular sites where ground-water contamination will exceed EPA's MCLs, NRC contemplates either restricted release or the use of alternate criteria for license termination, or radioactive contamination at the time of license termination exceeds the corresponding levels in Table 1 as provided in Section V.C.2.

B. General

Each agency will keep the other agency generally informed of its relevant plans and schedules, will respond to the other agency's requests for information to the extent reasonable and practicable, and will strive to recognize and ameliorate to the extent practicable any problems arising from implementation of this MOU.

C. NRC Responsibilities

1. NRC will continue to ensure remediation of sites under its jurisdiction to a level that fully protects public health and safety.
2. For NRC-licensed sites at which NRC determines during the license termination process that there is radioactive ground-water contamination in excess of EPA's MCLs, or for which NRC contemplates either restricted release (10 CFR 20.1403) or the use of alternate criteria for license termination (10 CFR 20.1404), NRC will seek EPA's expertise to assist in NRC's review of a decommissioning or license termination plan. In addition, NRC will consult with EPA if either the planned level of residual radioactive soil concentrations in the proposed action or the actual residual level of radioactive soil concentrations found in the final site survey exceed the radioactive soil concentration in Table 1. With respect to all such sites, the NRC will consult with EPA on the application of the NRC decommissioning requirements and will take such action as the NRC determines to be appropriate based on its consultation with EPA. For example, if NRC determines during the license termination process that there will be radioactive ground-water contamination in excess of EPA's MCLs at the time of license termination, then NRC will discuss with EPA the use of flexibility under EPA's phased approach for addressing ground-water contamination. If NRC does not adopt recommendations provided by the EPA, NRC will inform EPA of the basis for its decision not to do so.

3. NRC will defer to EPA regarding matters involving hazardous materials not under NRC's jurisdiction.

D. EPA Responsibilities

1. If the NRC requests EPA's consultation on a decommissioning plan or license termination plan, EPA will provide, within 90 days of NRC's notice to EPA, written notification of its views on the matter.
2. Consistent with this MOU, EPA agrees to a policy of deferral to NRC decision making on decommissioning without the need for consultation on sites other than those presenting the circumstances described in Sections V.C.2 and V.C.3. The agencies will consult with each other pursuant to the provisions of this MOU with respect to those sites presenting the circumstances described in Sections V.C.2 and V.C.3. EPA does not expect to undertake CERCLA actions related to radioactive contamination at a site that has been decommissioned in compliance with the NRC's standards, including a site addressed under Section V.C.2, despite the agencies decision to engage in consultation on such sites. EPA's deferral policy, and its expectation of not taking CERCLA action, continues to apply to sites that are covered under Section V.C.2.
3. For NRC-licensed sites presenting the circumstances described in Section V.C.2 and for which NRC has not adopted the EPA recommendation, EPA will consult with NRC on any CERCLA actions EPA expects to take if EPA does not agree with the NRC's decision.
4. EPA will resolve any CERCLA concerns involving hazardous substances outside of NRC's jurisdiction at NRC licensed sites, including concerns involving hazardous constituents that are not under the authority of NRC. As provided in Section V.D.2, EPA under CERCLA will defer or consult with NRC as appropriate regarding matters involving AEA materials under NRC's jurisdiction.

E. Other Provisions

1. Nothing in this MOU shall be deemed to establish any right nor provide a basis for any action, either legal or equitable by any person, or class of persons challenging a government action or failure to act.
2. Each agency will appoint a designated contact for implementation of this MOU. The designated individuals will meet at least annually or at the request of either agency to review NRC-licensed sites that meet the criteria for consultation pursuant to Section V.C.2. The NRC designated contact is the Director, Office of Nuclear Materials Safety and Safeguards, and the EPA designated contact is the Director Office of Emergency and Remedial Response, or as each designee delegates.
3. This MOU will remain in effect until terminated by the written notice of either party submitted six months in advance of termination.
4. Within six months of the execution of this MOU, each party will revise its guidance to its Headquarters and Regional Offices to reflect the terms of this MOU.

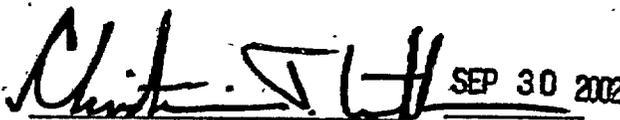
5. If differences arise that cannot be resolved by senior EPA and NRC management within 90 days, then either senior EPA or NRC management may raise the issue to their respective agency head.

Section VI. Corrective Action under RCRA

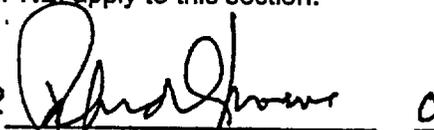
Some NRC sites undergoing decommissioning may be subject to cleanup under RCRA corrective action authority. This authority, administered either by EPA or authorized states, requires cleanup of releases of hazardous waste or constituents at hazardous waste treatment, storage or disposal facilities. NRC sites subject to RCRA corrective action will be expected to meet RCRA cleanup standards for chemical contamination within EPA's jurisdiction. EPA Office of Solid Waste's policy is to encourage regional and State program implementers to coordinate RCRA cleanups with decommissioning, as appropriate, at those NRC sites subject to EPA's corrective action authority.¹

EPA will continue to support coordination of cleanups under the RCRA corrective action program with decommissioning at NRC sites consistent with its March 5, 1997 policy. In addition, under RCRA the majority of States are authorized to implement the corrective action requirements. States are not signatories to this MOU; however, EPA will encourage States to act in accordance with this policy where they have responsibility for RCRA corrective action at NRC sites undergoing decommissioning.

Items 1 and 3 of the "Other Provisions" of Section V.E. apply to this section.


Christine T. Whitman
Administrator
US Environmental Protection Agency

SEP 30 2002
Date


Richard A. Meserve
Chairman
US Nuclear Regulatory Commission

October 9, 2002
Date

¹See letter from Elizabeth Cotsworth, Acting Director, Office of Solid Waste to James R. Roewer, USWAG, dated March 5, 1997.

MOU Table 1: Consultation Triggers for Residential and Commercial/Industrial Soil Contamination

Except for radium-226, thorium-232, or total uranium, concentrations should be aggregated using a sum of the fraction approach to determine site specific consultation trigger concentrations. This table is based on single contaminant concentrations for residential and commercial/industrial land use when using generally accepted exposure parameters. Table users should select the appropriate column based on the site's reasonably anticipated land use.

Radionuclide	Residential Soil Concentration	Industrial/Commercial Soil Concentration
H-3	228 pCi/g	423 pCi/g
C-14	46 pCi/g	123,000 pCi/g
Na-22	9 pCi/g	14 pCi/g
S-35	19,600 pCi/g	32,200,000 pCi/g
Cl-36	6 pCi/g	10,700 pCi/g
Ca-45	13,500 pCi/g	3,740,000 pCi/g
Sc-46	105 pCi/g	169 pCi/g
Mn-54	69 pCi/g	112 pCi/g
Fe-55	269,000 pCi/g	2,210,000 pCi/g
Co-57	873 pCi/g	1,420 pCi/g
Co-60	4 pCi/g	6 pCi/g
Ni-59	20,800 pCi/g	1,230,000 pCi/g
Ni-63	9,480 pCi/g	555,000 pCi/g
Sr-90+D	23 pCi/g	1,070 pCi/g
Nb-94	2 pCi/g	3 pCi/g
Tc-99	25 pCi/g	89,400 pCi/g
I-129	60 pCi/g	1,080 pCi/g
Cs-134	16 pCi/g	26 pCi/g
Cs-137+D	6 pCi/g	11 pCi/g
Eu-152	4 pCi/g	7 pCi/g
Eu-154	5 pCi/g	8 pCi/g

MOU Table 1: Consultation Triggers for Residential and Commercial/Industrial Soil Contamination

Except for radium-226, thorium-232, or total uranium, concentrations should be aggregated using a sum of the fraction approach to determine site specific consultation trigger concentrations. This table is based on single contaminant concentrations for residential and commercial/industrial land use when using generally accepted exposure parameters. Table users should select the appropriate column based on the site's reasonably anticipated land use.

Radionuclide	Residential Soil Concentration	Industrial/Commercial Soil Concentration
Ir-192	336 pCi/g	544 pCi/g
Pb-210+D	15 pCi/g	123 pCi/g
Ra-226	5 pCi/g	5 pCi/g
Ac-227+D	10 pCi/g	21 pCi/g
Th-228+D	15 pCi/g	25 pCi/g
Th-232	5 pCi/g	5 pCi/g
U-234	401 pCi/g	3,310 pCi/g
U-235+D	20 pCi/g	39 pCi/g
U-238+D	74 pCi/g	179 pCi/g
total uranium	47 mg/kg	1230 mg/kg
Pu-238	297 pCi/g	1,640 pCi/g
Pu-239	259 pCi/g	1,430 pCi/g
Pu-241	40,600 pCi/g	172,000 pCi/g
Am-241	187 pCi/g	568 pCi/g
Cm-242	32,200 pCi/g	344,000 pCi/g
Cm-243	35 pCi/g	67 pCi/g

Memorandum of Understanding Between EPA and NRC

ACNW Informational Briefing
March 27, 2003

Contact: Eric Pogue
301-415-6064
erp@nrc.gov

Background

- **1983 Deferral Policy**
- **1992 MOU**
- **1997 NRC License Termination Rule**
- **1997 EPA Guidance**
- **1999 Direction from Congress**
- **2000 GAO Report**

Dual Regulation

- **Leads to Conflicts**
- **Inefficient Use of Resources**
- **Lack of Finality**
- **Erodes Public Confidence**

3

2002 MOU

- **Finalized October 9, 2002**
- **Establishes Framework For Agency Coordination**
- **Eliminates Dual Regulation for Vast Majority of NRC Licensees**
 - But doesn't completely eliminate threat (HR 107-740)
- **Does Not Relieve NRC Licensees From 10 CFR Part 20 Subpart E**

4

Specific MOU Provisions

NRC agrees to consult with EPA when:

- **Site groundwater contamination will exceed EPA MCLs at time of license termination**
- **Site soil concentrations will exceed consultation levels defined in MOU at time of license termination**
- **NRC contemplates license termination under the restricted release or alternate use criteria**

5

Outreach Activities

- **Press Releases and FRNs**
- **MOU Available on NRC and EPA Web Sites:**
 - <http://www.nrc.gov/reading-rm/doc-collections/news/2002/mou2fin.pdf>
 - <http://www.epa.gov/superfund/resources/radiation/pdf/mou2fin.pdf>
- **Public Meeting—November 2002**
- **NRC Participation in State and Organizational Meetings**

6

Implementation

- **Guidance Development**
- **Identification of Sites that meet/exceed “trigger” criteria**
- **Site-Specific Consultation**

7

Next Steps

- **Continued Coordination per the MOU**
- **NRC Will Continue to Request Legislation to Completely Eliminate Dual Regulation**

8