

**OFFICIAL TRANSCRIPT OF PROCEEDINGS
UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION**

**Title: PUBLIC MEETING TO SOLICIT PUBLIC
INPUT ON DRAFT SUPPLEMENT TO
GENERIC ENVIRONMENTAL IMPACT
STATEMENT ON DECOMMISSIONING
OF NUCLEAR FACILITIES**

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2 NUCLEAR REGULATORY COMMISSION

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5 PUBLIC MEETING TO SOLICIT PUBLIC
6 INPUT ON DRAFT SUPPLEMENT TO GENERIC
7 ENVIRONMENTAL IMPACT STATEMENT ON
8 DECOMMISSIONING OF NUCLEAR FACILITIES

9
10 Symposium Room
11 Radisson Hotel
12 3030 Warrenville Road
13 Lisle, Illinois

14
15 Thursday, April 27, 2000

16 The above-entitled meeting commenced, pursuant to
17 notice, at 7:06 p.m.

18
19 PARTICIPANTS:

20 CHIP CAMERON, Special Counsel for Public Liaison,
21 NRC, Moderator
22 DINO SCALETTI, NRC Senior Project Manager,
23 Decommissioning Section, Project Directorate IV
24 Decommissioning
25 MICHAEL MASNIK, Chief, Decommissioning Section

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1 PARTICIPANTS: [Continued]

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3 Laboratory

4 EVA ECKERT HICKEY, Pacific Northwest National
5 Laboratory

6 JOHN HICKMAN, Project Manager, Headquarters
7 Decommissioning Section

8 STEWART BROWN, Project Manager, NMSS

9 ANN HODGDON, Senior Attorney, OGC

10 DAVE WRONA, Project Manager

11 JIM WILSON, Environment Specialist

12 PHILLIS SOBEL, Office of NMSS.

13 PAMELA ALLOWAY-MUELLER, Public Affairs Officer

14 BRUCE JORGENSEN, Chief, Region III Decommissioning
15 Branch

16 AUDIENCE PARTICIPANTS:

17 MICHAEL KLEBE, Illinois Department of Nuclear
18 Safety

19 LYNNE GOODMAN, Detroit Edison at Fermi 1

20 PAT SIMPSON, Commonwealth Edison

21 JACK BARNETTE, US EPA, Region V, Chicago

22 BRIAN LITTLETON, EPA

23 JOHN SUERMANN

24 ROCK AKER, Commonwealth Edison

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P R O C E E D I N G S

[7:06 p.m.]

1
2
3 MR. CAMERON: Good evening, everybody. My name is
4 Chip Cameron, I am the Special Counsel for Public Liaison at
5 the NRC, and I would like to welcome you to the NRC's public
6 meeting on the development of the Generic ~~Evaluation~~ ^{Environmental} Impact
7 Statement on Reactor Decommissioning, and it is my pleasure
8 to serve as the moderator for tonight's meeting.

9 And I would like to cover three things briefly
10 with you before we get into the substance of tonight's
11 program. One are the objectives of the meeting. A second
12 thing is the format and ground rules. And the third item is
13 I want to give you a brief overview of the agenda tonight,
14 so you will know what to expect.

15 In terms of objectives, the NRC is here tonight to
16 provide you with information on the Environmental Impact
17 Statement process, why we are preparing a Generic
18 Environmental Impact Statement on Reactor Decommissioning,
19 and also to give you some background information on reactor
20 decommissioning. But, most importantly, we are here tonight
21 to listen to your comments, your suggestions, your advice on
22 the issues that the NRC should evaluate in preparing the
23 Environmental Impact Statement.

24 And in this regard, this meeting at this stage of
25 the Environmental Impact Statement process is called

1 scoping, and the Environmental Impact Statement that the NRC
2 is preparing is designed to assist us in making decisions on
3 reactor decommissioning issues, and scoping helps the NRC to
4 identify information on the types of environmental impacts
5 and the alternatives that should be evaluated by the NRC in
6 preparing this Environmental Impact Statement.

7 We are also asking for written comments on the
8 scoping issues, but we are here with you tonight to talk to
9 you in person about these issues. I think the presentations
10 you hear tonight will give you an opportunity to hear what
11 other people in the audience have to say on these issues,
12 and may help you prepare any written comments that you want
13 to send in to us on these scoping issues, and we are going
14 to have more details on that.

15 But I just want to emphasize that even if you
16 don't file any written comments, any comments that you give
17 us tonight will be considered as comments on the scoping
18 issues.

19 In terms of ground rules for tonight's meeting,
20 they are pretty simple. We are going to have some brief
21 presentations, two brief presentations by the NRC staff and
22 our consultants on this particular effort. After each of
23 those presentations, we are going to go out to you for
24 questions and comments, so that that will make the meeting a
25 little bit more invigorating, a little bit more interactive.

1 After those presentations and discussion periods,
2 we will go out for open discussion on any issues that you
3 might want to address. And I will give people who want to
4 make a formal statement an opportunity to make a formal
5 statement. Again, I emphasize the fact that any comments
6 that you make during the discussion periods after the
7 presentation, those will be treated as comments in scoping,
8 just as the formal statements will be treated as comments in
9 scoping.

10 If you want to say something, just signal me and I
11 will bring the microphone over to you, and please state your
12 name and affiliation, if appropriate, for the transcript.
13 We are keeping a transcript so that we have a record of your
14 comments. And I would just ask you to try to be concise in
15 your comments. We are not setting any set time limit on
16 anybody, but we do make sure that everybody gets a chance to
17 talk tonight, so I may have to ask you to summarize so that
18 we can move on to someone else. But since we are not sort
19 of ~~barging~~ ^{bulldozing} out from the rafters here with people, I think we
20 will have plenty of time for all the discussion that you
21 want to get into tonight.

22 And I guess with that, that pretty much gives you
23 an overview of what we are going to be doing. And we are
24 going to go to Dino Scaletti from the NRC staff in a minute
25 to come up and do a presentation for us, and then we will go

1 out to you for questions and comments. And I would just
2 thank you for all coming out tonight and we look forward to
3 listening to you.

4 And, Dino, are you going to introduce, you know,
5 all of our contractors and everything?

6 MR. SCALETTI: Yes.

7 MR. CAMERON: Okay. All set?

8 MR. SCALETTI: Yes.

9 MR. CAMERON: All right. This is Dino Scaletti
10 from the Office of Nuclear Reactor Regulation.

11 MR. SCALETTI: Thank you, Chip. I guess it would
12 be appropriate right now to introduce the people from the
13 Nuclear Regulatory Commission here. And starting with Dr.
14 Mike Masnik, he is the Section Chief of the Decommissioning
15 Section.

16 Ms. Ann Hodgdon, who is a Senior Attorney is the
17 Office of General Counsel, who is doing decommissioning work
18 for us.

19 Mr. Dave Wrona, who is a Project Manager in the
20 Office of Nuclear Reactor Regulation in the Decommissioning
21 Section, who also works for -- I work for Mike Masnik, and
22 so does Dave.

23 John Hickman, who is, again, another Project
24 Manager in our section.

25 Stew Brown, who is a Project Manager in the Office

1 of NMSS.

2 Mr. Jim Wilson, who is a Project Manager and an
3 Environmental Reviewer, and he is not in the Decommissioning
4 Section, but he does a lot of work with us.

5 Ms. Phillis Sobel, I believe is here someplace,
6 from the Office of NMSS.

7 Ms. Pamela Alloway-Mueller is here from the Public
8 Affairs Office in Region III.

9 That is Bruce Jorgensen, who is here from Region
10 III, and the Decommissioning Section Chief for the
11 Decommissioning Section in Region III.

12 And have I missed any NRC people? Pardon? Well,
13 Eva is not -- I am going to get to her. And we have two
14 members with us tonight from Pacific Northwest Laboratories
15 who have contracted to us to help us with the Generic
16 Environmental Impact Statement, Ms. Eva Hickey and Mr.
17 Steven Short.

18 With that, again, I would like to -- you know my
19 name -- I would like to thank you for coming to this public
20 scoping meeting. I am going to take a few minutes to give
21 you an overview of why and how the NRC plans to develop a
22 Generic Environmental Impact Statement for Decommissioning
23 Reactors.

24 First, I would like to tell you about our agency.
25 The NRC was formed as a result of the Atomic Energy Act of

1 1994, the Energy Reorganization Act of 1974. The NRC's
2 mission is to regulate the nation's civil, civilian use of
3 nuclear materials to ensure adequate protection to the
4 health and safety of the public and workers, and to protect
5 the environment, and provide for the common defense and
6 security. Next slide.

7 The NRC mission is accomplished through the
8 regulation, licensing, inspection and enforcement of nuclear
9 reactors from the time of construction through the
10 termination of the license following decommissioning. The
11 NRC regulations are issued under Title 10 of the United
12 States Code of Federal Reactors.

13 For commercial power reactors, the Nuclear
14 Regulatory function includes of these facilities. The
15 nuclear power plant license is based on a set of established
16 regulatory requirements that ensures the design and proposed
17 operation are performed and based on radiological safety
18 standards.

19 The NRC conducts routine inspections to ensure
20 that the plant design and operation conforms to the license
21 requirements, and enforcement actions are taken in the event
22 that they find any of the license requirements have not been
23 satisfied.

24 NRC's responsibility for a nuclear power plant,
25 for a nuclear power reactor are for the entire life cycle of

1 the facility, construction through license termination. And
2 the NRC maintains the license and continues to regulate
3 through the decommissioning process until a license is
4 terminated. It is the decommissioning process that is the
5 focus of this meeting tonight. The NRC is concerned with
6 nuclear power plant safety and with the protection of the
7 environment.

8 With that brief background, I would like to
9 discuss why we are here tonight. The purpose of this
10 meeting is to discuss the Generic Environmental Impact
11 Statement on the decommissioning of permanently shutdown
12 nuclear power reactors that the NRC proposes to write. We
13 are going to describe the process set forth by the National
14 Environmental Policy Act or NEPA for developing this Generic
15 Environmental Impact Statement, as well as provide you with
16 some background information on nuclear reactor
17 decommissioning.

18 Today's meeting is not a formal hearing, but is an
19 opportunity for the NRC to gather information about the
20 public's potential concerns about the environment impact
21 from decommissioning. The NRC will develop the Generic
22 Environmental Impact Statement in accordance with the NRC's
23 responsibility under the National Environmental Policy Act.

24 Today's meeting also provides us with an
25 opportunity to describe to you the steps that occur during

1 the preparation of a Generic Environmental Impact Statement
2 and to tell you the schedule that will be used to develop
3 this document.

4 Next, I want to talk about the NEPA process. The
5 National Environmental Policy Act was enacted in 1969. NEPA
6 places the responsibility on federal agencies to consider
7 significant aspects of the environmental impact of a
8 proposed action. It requires that all federal agencies use
9 a systematic approach to consider environmental impacts
10 during the decision-making.

11 The NEPA process also is structured to ensure that
12 federal agencies will inform the public that it has indeed
13 considered environmental concerns in its decision-making
14 process, and invite the public participation to evaluate the
15 process. This meeting is part of the process. Also, this
16 meeting is required by 10 CFR Part 51 of our regulations.

17 NEPA requires that an Environmental Impact
18 Statement or assessment be prepared for all major federal
19 actions. Supplements to drafts of Final EISs are required
20 when there is significant circumstances or information
21 relevant to the environmental concerns. This is the
22 situation we are in with the new regulation and the
23 additional experience from decommissioning facilities and it
24 is an appropriate time to supplement and revise the original
25 Generic Environmental Impact Statement.

1 Generic Environmental Impact Statements are
2 allowed in cases where there is need to address generic
3 impacts that are common to a number of similar proposed
4 actions or similar facilities. The action we are looking
5 at, as I mentioned previously, is decommissioning of nuclear
6 power reactors.

7 What exactly is a Generic Environmental Impact
8 Statement for decommissioning? It identifies the
9 environmental impact that may be considered generic for all
10 nuclear reactor facilities. It also identifies the
11 environmental impacts that need to be considered in more
12 detail for a specific facility. Next slide.

13 The Generic Environmental Impact Statement will
14 examine a range of environmental impacts resulting from the
15 range of differences in nuclear facility designs,
16 decommissioning methods and facility locations. Next slide.

17 Why are we supplementing the Generic Environmental
18 Impact Statement for decommissioning? The original
19 statement for decommissioning was published in 1988,
20 therefore, it is over 12 years old. A lot of new
21 information has been gained since that time. In addition,
22 in 1988, there was an increase in the amount of
23 decommissioning experience. In the U.S., currently 21
24 nuclear facilities have permanently ceased operations. As a
25 result of this experience, there are over 300 years of

1 decommissioning experience before the NRC. There is a lot
2 of information available regarding the environmental impacts
3 of decommissioning commercial nuclear power plants.

4 As I said previously, the original Generic
5 Environmental Impact Statement was published in 1988 as
6 NUREG-0586. It looked at decommissioning of all sorts of
7 facilities that hold licenses with the NRC. The revised
8 Generic Environmental Impact Statement, however, will only
9 address permanently shutdown reactors and will not include
10 decommissioning of fuel fabrication plants or independent
11 spent fuel storage facilities, nor non-power reactors. It
12 will, however, be published as a supplement to the original
13 impact statement, NUREG-0586, so that the information
14 related to decommissioning other types of facilities will
15 still be contained in the original impact statement, but the
16 new information learned from decommissioning of commercial
17 power reactors since 1988 will be contained in the
18 supplement, draft supplement developed later this year.

19 The NEPA process follows certain steps the NRC is
20 required to follow -- follow this process, which provides
21 consistency for all EISs prepared for by all federal
22 agencies. The first step in this process is the Notice of
23 Intent which is published in the Federal Register. The
24 Notice of Intent informs the public that an EIS is going to
25 be published. The notice outlines what the process is going

1 to be, invites the public to come and participate, announces
2 the location and time of the public meetings, and designates
3 the contact at the NRC for more information.

4 The Notice of Intent for this action was published
5 -- the first Notice of Intent was published in the Federal
6 Register on March 14th, 2000. The second notice identifying
7 this location was published in early April, I believe April
8 11th of this year.

9 In addition to this meeting, other public meetings
10 will be held in Boston, Atlanta, and San Francisco. Scoping
11 meetings are used early in the NEPA process to help the
12 federal agencies decide what issues should be discussed in
13 the EIS. It helps us define the proposed action and
14 determine any peripheral issues that may be associated with
15 the proposed action.

16 Scoping identifies other related actions such as
17 other environmental assessments or other Environmental
18 Impact Statements that are being performed by other state
19 and federal agencies, so that may impact on the
20 decommissioning activities, which allows us to coordinate
21 with other state and federal agencies early in the process.
22 Public comments on the scope of the GEIS must be received by
23 July 15th, 2000.

24 Transcripts and meeting summaries will be issued
25 shortly following each of the scoping meetings. All

1 comments will be summarized and addressed in a scoping
2 summary report, and that report is scheduled to be issued
3 sometime in mid-July -- mid to late July, I should say.

4 Once scoping is accomplished, the NRC will perform
5 an evaluation of the environmental impacts associated with
6 the decommissioning process. After the NRC has conducted
7 the environmental evaluation, we will issue a Draft
8 Environmental Impact Statement for public comment. In this
9 case it will be a draft supplement to NUREG-0586. It is
10 scheduled to be published in early 2001.

11 After we gather comments and evaluate them, it may
12 change the position in the EIS based on those comments.
13 Those comments will be identified and evaluated, again, and
14 if significant changes are made in the draft, then this
15 would require additional public meetings.

16 We will issue the Final EIS, and that is scheduled
17 to be done in late 2001.

18 We have, to assist you, if people want to comment,
19 we have put together excerpted portions of NUREG-0586, which
20 you probably saw coming in. In that are portions of the
21 original Draft Environmental -- Generic Draft -- Final Draft
22 Environmental -- Final Generic Environmental Impact
23 Statement for power reactors. It is only the power reactor
24 section, the introduction of the power reactor section, so
25 this is mainly what we will be supplementing in the upcoming

1 Impact Statement.

2 That would conclude my presentation.

3 MR. CAMERON: Let's see if there is any questions
4 for you, Dino, on your presentation. Does anybody have a
5 question?

6 Michael, if you could just give your name and
7 affiliation for the transcript, please.

8 MR. KLEBE: Sure. My name is Michael Klebe. I am
9 with the Illinois Department of Nuclear Safety. A couple of
10 your overheads indicated that there was new information
11 since the report was originally produced in 1988. Could you
12 identify in some sort of terms what that new information is?

13 MR. SCALETTI: Certainly. There is -- we have new
14 regulations that were promulgated in 1996 regarding
15 decommissioning. There are also a large number of plants,
16 Trojan, Maine Yankee, Haddam Neck, who are all under active
17 decommissioning, and this information will be reviewed and
18 evaluated in the Environmental Impact Statement.

19 MR. CAMERON: Let's let Michael supplement.

20 DR. MASNIK: I am Mike Masnik. I think, you know,
21 when we say that a document was produced in 1988, it is
22 based on data that was probably five or six years earlier
23 than that, because we go through the EIS process, which is a
24 number of years, and the collection of data. So, we
25 generated the 1988 GEIS based on data that was collected in

1 the early '80s. We didn't have much experience in
2 decommissioning facilities back then. In fact, I don't
3 believe we had any as far as power reactors are concerned,
4 commercial reactors.

5 So, there is a lot of empirical data that has been
6 generated since '88, things like estimates of worker
7 exposure. A lot of those estimates were based on just -- I
8 wouldn't say a guess, but we figured it would take so many
9 hours to remove a piece of pipe. We think that it would be
10 in a field of approximately so many ^{MR} ~~MR~~ ^{with rem} per hour. And for
11 that particular task, it would take so many person-rem to
12 accomplish it.

13 Well, it turns out now we have good data where the
14 licensees have actually done that kind of work, and we are
15 hoping to get that information from the licensees and factor
16 that into the GEIS, so that the document that we are going
17 to produce will take advantage of a lot of the experience
18 that the industry has gained since '88.

19 Did that answer your question?

20 MR. KLEBE: Sort of, but no. I guess the worker
21 exposure, okay, that is the types of things that I am
22 looking for, is what specific issues have caused you to go
23 through this. I mean I realize that there have been a
24 number of plants that have gone through decommissioning, but
25 what about those decommissioning activities occurred, or did

1 you find that really sparked the need update the GEIS? I
2 mean was there something so dramatically different in terms
3 of worker exposure, volume produced, you know, volume of
4 either high level waste or low level radioactive waste
5 spent? I mean are you talking about differences in disposal
6 methodologies or decommissioning methodologies? Are you
7 looking at entombment? I mean what basically got the bug in
8 your bonnet to change this requirement?

9 DR. MASNIK: I can talk a little bit about waste
10 volumes, for example. There has been, because of the way
11 utilities are charged for the disposal of waste, there has
12 been a tremendous effort for volume reduction. So a lot of
13 the estimates for volume that were in the '88 were unusually
14 high. And when we looked at the what the actual volumes of
15 waste that are being shipped from plants that being
16 decommissioned, they are significantly lower, so there is a
17 big change there.

18 Cost is another factor that has changed to some
19 extent since the '88. So everything you mentioned were
20 factors in the decision to go ahead and probably update the
21 -- well, to go ahead and update the GEIS. I think we felt
22 that 12 or 13 years is a long time to go between relying on
23 a document like GEIS, and particularly since there has been
24 so much in the way of advancements in the field.

25 MR. CAMERON: It may be that after Eva Hickey's

1 presentation that some of this may become clearer to you.

2 Did you have a --

3 MR. SCALETTI: We have also had requests from the
4 Environment Protection Agency, from the industry and the
5 public at meetings to update this, so it is a combination of
6 all of those.

7 MR. CAMERON: Did you have any assumption in your
8 mind about why we might be -- why the NRC is doing this?

9 MR. KLEBE: No, I just wanted to know why. I mean
10 you just had this Generic -- we had this report out there,
11 we think it is time to update it. But from my perspective
12 as, you know, someone that is sort of involved in it, is the
13 lacking of the understanding of why, the actual specifics as
14 to why you took -- that is all, I am just trying to
15 understand.

16 MR. CAMERON: When we are done with Eva's
17 presentation, if you are still unclear about some of this,
18 we will go back to that.

19 Just -- excuse me. State your name.

20 MR. SHORT: Steve Short with Pacific Northwest
21 National Lab. We did the studies that supported that
22 earlier GEIS and some of the assumptions that we made about
23 how decommissioning would proceed are dramatically different
24 now. For instance, we assumed you had to segment the steam
25 generators and pressure vessels, reactor pressure vessels,

1 and that is not necessarily happening, and that is where a
2 lot of your dose segments is coming now, and some of your
3 waste volume reductions.

4 So, just how utilities are actually accomplishing
5 decommissioning are quite a bit different than some of the
6 assumptions that were made earlier.

7 MR. CAMERON: Okay. Thanks, Steve.

8 Do we have another question? And, again, if you
9 could just state your name and affiliation, if appropriate.
10 Thank you.

11 MS. GOODMAN: Hello, I am Lynne Goodman with
12 Detroit Edison at Fermi 1. I think you mentioned that this
13 is going to cover all power reactors. I wanted to check
14 that out.

15 MR. SCALETTI: Yes.

16 MS. GOODMAN: Because one of the weaknesses I
17 think that is in the current Environmental Impact Statement
18 is that there are some power reactors that are not on the
19 list of who is explicitly covered and also not on the list
20 of those that are explicitly not covered. I am looking
21 about the gas reactors, the sodium reactors, that we do have
22 some shutdown facilities that I hope are very clearly
23 covered by the revision and supplement.

24 MR. CAMERON: Okay, Dino, do you want to clarify
25 on that?

1 MR. SCALETTI: Thank you. We plan to --
2 obviously, the majority of the reactors out there are PWRs
3 and BWRs and, certainly, we are going to cover those in
4 detail. The gas, I mean Fort St. Vrain has been
5 decommissioned and no longer falls under this, under our
6 GEIS.

7 And can you identify what other reactors we are
8 referring to?

9 MS. GOODMAN: Peach Bottom and Fermi.

10 MR. SCALETTI: Fermi. Oh, Fermi, okay.

11 MS. GOODMAN: Fermi 1.

12 MR. SCALETTI: Okay.

13 MR. CAMERON: Peach Bottom and Fermi 1 if the
14 transcript didn't pick that up.

15 MR. SCALETTI: We plan to cover them.

16 MR. CAMERON: Okay. Any other questions before we
17 go on to the next presentation? Yes, sir.

18 MR. SIMPSON: I am Pat Simpson with Commonwealth
19 Edison, and I just was wondering what the NRC's intent is
20 once the final EIS is issued in terms of what impact that
21 would have on reactors that are already shut down, but not
22 having their licenses terminated yet at that point. What
23 would be the expectation for NRC and utilities to look at
24 the EIS again?

25 MR. SCALETTI: Well, for instance, Zion Station,

1 we have already reviewed the PSDAR against the existing
2 Generic Environmental Impact Statement and the existing
3 Operating Environmental Impact Statement that was issued
4 back in the -- whenever it was issued, 1970s. I see no
5 intent to backfit these decommissioning reactors to try to
6 force-fit them into meeting the requirements of the new
7 statement.

8 MR. CAMERON: You know, Michael, maybe besides
9 what you were going to say, you or Dino might expand a
10 little bit on that question and tell people what are the
11 potential ways that this GEIS may be used in NRC regulation.

12 DR. MASNIK: The GEIS is an important document
13 from our perspective, from the point of view of
14 decommissioning, because it sets an envelope in which the
15 licensee can decommission the plant. It sets more or less
16 the environmental limits. And if the licensee, for example,
17 proposes to make a change to the facility during
18 decommissioning that results in an environmental impact that
19 is outside the bounds of the Generic Environmental Impact,
20 then it has to get a review and approval approach, or has to
21 do an review and approval approach.

22 So, it is important, what we are doing is we are
23 updating the GEIS, okay. And what that will do will change
24 the boundaries slightly based on the more current
25 information. And we think that it will better define for

1 the public what the potential impacts are for the plant.

2 We don't see that it is going to change things
3 much as far as the industry is concerned. Most licensees in
4 their screening of changes to the facility actually have a
5 requirement to look at whether or not the action that they
6 are contemplating will exceed previously issued
7 Environmental Impact Statements, and that will continue, and
8 the envelope will change slightly, and, hopefully, will be a
9 lot more realistic than what we are operating under now,
10 which is an outdated document.

11 MR. CAMERON: Adam, did you have anything? Okay.
12 Thanks, Mike.

13 Any other questions before we go on? Some of
14 these questions may be further elaborated on after we are
15 done with Eva's presentation.

16 Thank you very much, Dino.

17 And Eva Hickey from Pacific Northwest National Lab
18 is now going to talk about the NRC's current reactor
19 decommissioning process.

20 MS. HICKEY: I am sorry, I don't think this
21 particular viewgraph is in your handout, but I wanted to
22 address the definition of decommissioning. But first I
23 would like to welcome you all. As Chip said, my name is Eva
24 Hickey, and I am from Pacific Northwest National Laboratory.
25 I am the Task Manager and the team lead for the

1 multidisciplinary team that will be conducting the
2 environmental evaluation and drafting the Generic
3 Environmental Impact Statement.

4 So, with that, next i would like to talk a little
5 bit about decommissioning in general. I would like to spend
6 a few minutes discussing the background, the process of
7 reactor decommissioning, the NRC requirements, methods of
8 decommissioning, activities that take place during
9 decommissioning and some of the experience that we have seen
10 with decommissioning.

11 The definition of decommissioning is simply the
12 safe removal of a facility from service and the reduction of
13 residual radioactivity to a level that will permit
14 termination of the license.

15 In 1988, when the Generic Environmental Impact
16 Statement was published, the NRC regulations at that time
17 required that a comprehensive decommissioning plan be
18 written when a nuclear power plant was at the end of their
19 life cycle. This plant ^{was} very comprehensive and required
20 that a comprehensive list of activities be defined. And in
21 the 1990s, NRC reassessed the value of this decommissioning
22 plan.

23 Experience showed that -- two things. First,
24 early in the process, the licensees weren't really sure
25 about the specific activities that would be conducted during

1 decommissioning. And the second thing observed was the
2 process early in decommissioning, those activities weren't
3 that different from what was taking place at an operating
4 facility. And, therefore with these two ideas in mind, NRC
5 decided that having the specific decommissioning plan was
6 not necessary.

7 So new requirements were promulgated. And I am
8 going to talk through those a little bit, relating them to
9 the decommissioning process. First, early on, once a plant
10 has decided that it is going to permanently cease operation,
11 there are two certifications that the licensee must make,
12 and the first is that operations have permanently ceased,
13 and the second certification is that fuel has been removed
14 from the reactor vessel. Once these two certifications have
15 been made, the licensee is no longer authorized to put fuel
16 into that reactor and run it.

17 Now, the next thing that happens, and it is
18 required within two years after the licensee has permanently
19 ceased operation is that a Post-Shutdown Activities Report
20 must be submitted to NRC. I am going to talk more about
21 that in a minute. But the PSDAR has several features to it.
22 It has a description of the planned decommissioning
23 activities, a schedule for these activities, a cost estimate
24 and it addresses environmental impacts.

25 To continue talking about the decommissioning

1 process, also, within two years of the decision to
2 permanently shut down, the utility must submit a
3 site-specific cost estimate. And this cost estimate will be
4 compared with the decommissioning funds that the licensee
5 has available, and if the cost estimate is higher than those
6 funds, then the licensee must obtain additional funding to
7 ensure that decommissioning can be completed.

8 As decommissioning progresses, and about two years
9 prior to when the license is to be terminated, the licensee
10 must submit a license termination plan. And in this plan
11 there will be a site characterization of the facility which
12 will discuss the residual amounts of contamination. It will
13 describe the remaining dismantlement activities, plans for
14 site remediation, and it will give the detailed plans for
15 the final radiological survey that is required.

16 Once decommissioning is completed, once the final
17 radiological survey has been performed, and once NRC finds
18 it acceptance, and that it meets the criteria for license
19 termination, the license will be terminated, and NRC will no
20 longer have oversight over that facility.

21 Okay. Let's go back to the Post-Shutdown
22 Decommissioning Activities Report, which I am going to call
23 the PSDAR. This document must be submitted within two years
24 of the decision to permanently cease operation. It has a
25 description, a general description of the planned

1 decommissioning activities. It has a schedule for the
2 milestones for when these activities will be completed, and
3 it has an estimate of the expected costs for
4 decommissioning.

5 It also has a discussion of the environmental
6 impacts, and this is with respect to the reasons for the
7 licensee concluding that the environmental impacts are
8 bounded by previously issued Environmental Impact
9 Statements.

10 Now, what is the purpose of the PSDAR? Well,
11 first, it provides a general overview of the decommissioning
12 that the facility is going to undertake. And with the
13 schedule of milestones, it allows the NRC to determine when
14 they need to make major -- when they need to have safety
15 inspections. And along with the schedule and decision of
16 when to have safety inspections, it allows the NRC to
17 allocate appropriate resources to follow the safety of the
18 decommissioning plan.

19 It requires the licensee to look at their
20 financial situation early on in the decommissioning process
21 to determine whether they need to secure additional funding.

22 And, finally, it ensures that decommissioning does
23 not result in any environmental impact that has not
24 previously been considered.

25 Next, I would like to discuss the methods of

1 decommissioning. And in our revised Generic Environmental
2 Impact Statement we will be discussing four methods. The
3 first two I will discuss in a little more detail, DECON and
4 SAFSTOR, but what I would like to mention first is ENTOMB.
5 In the 1988 Generic Environmental Impact Statement it was
6 concluded that ENTOMB probably was not a viable option for
7 decommissioning at that time, and the reason for this was
8 because NRC requires that decommissioning be completed
9 within 60 years of permanently ceasing operation of the
10 plant, and when you have an entombed plant, that would not
11 be viable. You would not have the radioactive material
12 removed within 60 years.

13 So the other two main methods are DECON and
14 SAFSTOR. DECON is when the licensee starts their active
15 decontamination and dismantlement shortly after they cease
16 operation. SAFSTOR is a method where the licensee puts the
17 plant in a safe and secure -- makes it safe and secure and
18 then stores it for some period of time, and then they will
19 complete the decontamination and dismantlement at a later
20 time.

21 And then there is really a fourth method which is
22 a combination of DECON and SAFSTOR. And what NRC is finding
23 is that many sites are actually going through this
24 combination of DECON and SAFSTOR.

25 The typical activities that take place during

1 DECON are removal of contamination from the systems and the
2 structures, and as part of decontamination, removal of large
3 radioactive components. The dismantlement aspect of DECON
4 is removal of piping and other smaller components, and in
5 some cases actual removal of buildings. And transportation
6 of waste to storage facilities is one of the important
7 activities in DECON.

8 In SAFSTOR, I will discuss two types of
9 activities. First, the preparation for SAFSTOR, and in this
10 the licensee will deactivate systems. They will drain and
11 flush plant systems. And they will perform a radiological
12 assessment, a historical assessment, so that when they go
13 back to complete the decontamination and dismantlement
14 portion of decommissioning, they will have a good historical
15 basis for where the radiological materials are.

16 Then, once the plant comes out of -- oh, no, I am
17 sorry, while the plant is actually in SAFSTOR, there will be
18 preventive and corrective maintenance on the buildings and
19 insurance that the structural integrity is being maintained.

20 But I want to reiterate that SAFSTOR will also, at
21 the end, go through a decontamination and dismantlement
22 activity.

23 Next, this was mentioned earlier, 21 reactors have
24 shut down since 1963, and we have gained a lot of
25 information, and will continue to obtain information from

1 these facilities as we develop the Generic Environmental
2 Impact Statement supplement.

3 Two of the facilities have completed
4 decontamination and dismantlement, and these facilities have
5 had their license terminated. There are six facilities that
6 are currently undergoing decontamination and dismantlement.
7 There are seven currently in long-term storage, and two that
8 are planning long-term storage, although, actually, as of
9 last night, Zion has indicated that they are going into
10 long-term storage. So there is actually nine plants that
11 are in long-term storage. And there are four plants that
12 are currently planning a combination of long-term storage
13 and decontamination and dismantlement.

14 And to answer the question that was asked earlier,
15 yes, we are looking at all of the facilities, all the
16 different types of reactors. There are eight boiling water
17 reactors, there are 10 pressurized water reactors. There
18 are three other types of reactors. And these were all
19 reactors that had NRC licenses at one time, and they had
20 between 23 megawatts, which was a very small reactor, up to
21 thirty-four-hundred-and-eleven megawatt thermal.

22 Okay. The last discussion on decommissioning is
23 the license termination process. And, as I described
24 earlier, a license termination plan is submitted by the
25 licensee two years prior to the license being terminated.

1 And during this termination process, soil remediation will
2 take place. There will be a final radiation survey. And
3 then, once NRC has decided that the final survey is adequate
4 and that the criteria is met for release, then NRC will
5 terminate the license.

6 Next, I would like to move on to the environmental
7 impacts that we will look at in the Generic Environmental
8 Impact Statement. We have discussed the methods of
9 decommissioning, the activities that take place during
10 decommissioning in very general terms. And what the PNL
11 team will do is look at all of the parameters that would
12 affect the environmental impacts and, based on the methods,
13 the type of plant, the location of the plant, how long the
14 plant was operated, how long it has ceased operation, and
15 then we will look at impacts like those that up are on the
16 board. I am not going to read them all. But radiological
17 impacts will obviously be an important issue that we will
18 look at. Cost is an area we will look at. We will look at
19 all of these, but some of these I just wanted to point out
20 were obvious, and we have seen changes between the 1988
21 Generic Environmental Impact Statement and the one that we
22 are going to, the supplement.

23 These impacts listed up here are the ones that are
24 commonly evaluated in Environmental Impact Statements for
25 the Nuclear Regulatory Commission when they follow the NEPA

1 process.

2 Okay. Finally, we would like to invite your
3 comment. The comment, the scoping period is open through
4 July 15th. Comments can be provided by mail, in person or
5 e-mail to Mr. Dino Scaletti. His phone number is on this
6 viewgraph, and outside the door is another information sheet
7 that gives his address and his e-mail address.

8 And, so, with that, I think that you have heard
9 enough from us on what we are going to do. Now, we welcome
10 your comment on the scoping. Thank you.

11 MR. CAMERON: Thank you very much, Eva.

12 Let's see if there is questions on Eva's
13 presentation that we might answer. And I would just also
14 remind you that the purpose of the scoping process is to get
15 suggestions and recommendations from the public on preparing
16 the Generic Environmental Impact Statement. So if any of
17 you have suggestions on the process that we are using, or on
18 the types of impacts, or on the alternatives that should be
19 considered. And, John, could you put that slide up that had
20 all of the typical categories of impacts that are going to
21 be looked at, just so that people can -- it might be useful
22 in terms of seeing if anybody does have any comments on
23 other categories of impacts, or specific types of impacts
24 under these particular categories.

25 How about questions for us? Let's go to this

1 gentleman right here. Or you don't have to have a question,
2 you can make a comment.

3 MR. BARNETTE: Oh, good. Jack Barnette, US EPA,
4 Region V, Chicago. On your Viewgraph Number 15, you talk
5 what is a PSDAR, and you mention activities and schedule and
6 estimates of costs. The last one says discussion of
7 environmental impacts. Can you get into that? That is
8 strictly radiological impacts, is that correct?

9 MS. HICKEY: Yes, because -- no? Okay.

10 MR. CAMERON: Mike Masnik.

11 DR. MASNIK: Yeah. The thought there in the
12 rulemaking process was that what the agency needed was a
13 schedule. What we needed was an idea of what the licensee
14 plans to do. And then we thought, well, gee, we ought to
15 make sure that the licensee thinks about how much it costs.
16 And then what we wanted to do was make sure in the decision
17 as to what exactly they planned to do during
18 decommissioning, they should consider the existing
19 environmental assessment. That is not just radiological.
20 It looks, for example, at waste burial, volumes, it will
21 look at the radiological, ^{but} it also includes
22 non-radiological issues, too.

23 MR. BARNETTE: I have a second question.

24 MR. CAMERON: All right. And, Mike, you might
25 want to elaborate at some point on non-radiological types of

1 issues to the extent that -- all right. Endangered species.
2 Things like -- I guess that might not be non-radiological.
3 Anyway, I am going to let you ask your question.

4 MR. BARNETTE: The second question is on Viewgraph
5 24, where you talked about what environmental impacts will
6 be assessed, and you mentioned a whole list of things, land
7 use and historical, et cetera. You had transportation.
8 What does mean exactly? Does that mean transportation to
9 environmental media, or does that mean literally
10 transportation of wastes off site? Can you give me some
11 details on that?

12 MS. HICKEY: What we are talking about there is
13 the transportation of the waste primarily. But we would be
14 looking at any impact from any transportation that would
15 take place in decommissioning the facility.

16 MR. BARNETTE: Okay. What I mean though is, okay,
17 you mean literally packing it on a truck or a railcar, that
18 type of transportation?

19 MS. HICKEY: Yes.

20 MR. BARNETTE: Okay.

21 MR. CAMERON: Okay. And let's try to use the
22 microphone here. Do we have another -- did you have a
23 question, sir?

24 MR. LITTLETON: Brian Littleton, I am with the
25 EPA. When you speak, I guess, taking into account ecology,

1 or the impact ecology into developing the supplemental
2 Environmental Impact Statement, do you have any idea
3 specifically either on how that, how you are going to
4 account for that?

5 MS. HICKEY: Well, I guess I don't want to say yes
6 at this point, because we are still doing that review. What
7 we will be looking at is the impact to the site as it goes
8 through the decommissioning process. One of the areas that
9 we specifically look at are threatened and endangered
10 species.

11 MR. LITTLETON: Will there be any type of
12 evaluation on some generic kind of site conditions such as
13 -- I mean potential, I guess, ground water pathways that
14 might be available and that type of information, or will
15 that have to be submitted, I guess, on a site-specific
16 basis?

17 MS. HICKEY: No, that is one of the issues that we
18 will look at. And what we are going to do is determine
19 whether it is a Generic Issue. We are not saying in all
20 cases that these are Generic Issues. We are going to
21 evaluate and determine which issues are generic, and then we
22 will state the ones -- also, we will state the ones that are
23 non-generic and will require site-specific evaluation.

24 DR. MASNIK: One of the things, Brian, -- Mike
25 Masnik again -- is that, for example, one of the things that

1 might occur decommissioning is you might need a laydown area
2 or a preparation area for large components, and that may
3 disturb some property around the plant. And that is the
4 kind of things, I think one of the things we are looking for
5 as far as ecology.

6 Obviously, many of the changes in the facility,
7 for example, ~~quad key packs~~ ^{aquatic impacts}, you no longer have large
8 quantities of water being removed from the water ~~course~~ ^s. We
9 will look at that. That is change, it is something to be
10 evaluated.

11 If we are looking at ground water pathways, I
12 think you are familiar enough with our process, you know
13 that there is a license termination plan that is submitted
14 later on in the actual decommissioning process. And there
15 is where those very site-specific issues should be addressed
16 and would be. But I mean we will look at it in a general
17 way at this time, too. But those kinds of very
18 site-specific issues, it was mentioned endangered species,
19 that is something we are not going to be able to -- we are
20 not going to be able to detail generically for all the
21 plants in the country. That is something clearly that has
22 to be a site-specific issue.

23 MR. LITTLETON: Where you find those things, you
24 will lay out --

25 MR. CAMERON: Let's get you on the transcript

1 there.

2 MR. LITTLETON: Where you find those things, you
3 will lay out specifically those things that maybe the
4 specific, I guess, site should provide information on that
5 is undergoing decommissioning?

6 DR. MASNIK: Yes, that is the plan.

7 MR. LITTLETON: All right.

8 MR. CAMERON: Good work if you can get it passing
9 this microphone back and forth. Adam.

10 MR. LEVIN: Adam Levin, Commonwealth Edison. My
11 question may be a little premature, but I was curious of is,
12 as you put together this Environmental Impact Statement, one
13 of the things that the licensees need to do along the way is
14 to compare their environmental situation going into
15 decommissioning with the results of this Environmental
16 Impact Statement. And what I was wondering was, how are you
17 going to -- have you determined how you are going to select
18 what would be various boundary conditions for each of these
19 environmental impacts?

20 As an example, the volume of waste that is
21 generated, how are you going to determine what boundary
22 condition will be? Have you given some thought to that?

23 MS. HICKEY: Well, what we are planning to do, and
24 that is why we are going and collecting as much information
25 as we can from the sites that are undergoing

1 decommissioning, so we can set some boundaries from that.
2 And in some cases, it may be -- the bounding may not be
3 different than the original GEIS, and in some cases we may
4 find that it is smaller or larger than what was in the
5 original GEIS. But what we are trying to do is take the
6 real information that we have now and provide those
7 boundaries.

8 Does that answer your question?

9 MR. CAMERON: Adam, do you have a recommendation
10 for us on them?

11 MR. LEVIN: Well, I was thinking in terms of, and,
12 really, it is from an analytical standpoint, but a couple of
13 things crossed my mind, and that is the example with the
14 waste volume, using that as a boundary condition. One might
15 either choose an average waste volume for all PWRs and
16 assign some sort of contingency on top of it, and say that
17 is your boundary condition for waste volume, or one might
18 look across the population of PWRs and the waste volume that
19 is generated and choose a risk-based number such as a 90
20 percent confidence level with a 90 percent probability that
21 you will be within that boundary.

22 So, I was, you know, a couple of things were going
23 through my mind in terms of how you might set boundary
24 conditions that end up being the parameters in your GEIS.

25 MS. HICKEY: Yeah, and I think that we have not --

1 we have thought about those, but we have not decided exactly
2 how we are going to handle that yet, because we haven't done
3 the full characterization of the environmental impacts. And
4 I think we need to do that and lay that out before we can
5 decide on an absolute approach on how to put that in the
6 document.

7 MR. CAMERON: And, again, if any of you have
8 thoughts on or suggestions on these issues that you might
9 want to send in, in writing to us, it would be very helpful.

10 Yes, sir.

11 MR. SUERMANN: Do you want me to spell the name
12 for the recorder?

13 MR. CAMERON: If it needs to be spelled.

14 MR. SUERMANN: My name is John Suermann, the last
15 name is S-u-e-r-m-a-n-n. I am just here as a private
16 citizen. I have two questions. Since you are working on
17 the decommissioning aspect of the supplement to the GEIS, is
18 there a presumption on what is happening in the background
19 that the spent fuel has been removed from the plant? In
20 other words, are you presuming it is stuck in an ISFSI at
21 the site, which means you are still going to be there after
22 the plant is decommissioned? How is that going to be
23 addressed in a GEIS?

24 And, secondly, will this supplemental GEIS that
25 you are working on come up with preferred alternatives along

1 the lines of other EISs that I have seen for DOE type
2 actions?

3 MS. HICKEY: Okay. To answer your first question
4 on the spent fuel, this document will not address the issues
5 of the fuel when it is in spent fuel storage, dry cask,
6 ISFSI. At least that is the current, our current
7 understanding of the scope. We are still talking about how
8 to handle the fuel as you take it out of the fuel pool and
9 put it into the ISFSI. Now, we may and probably will
10 address those environment impacts.

11 But, you know, we are still in the scoping process
12 and so we are still trying to figure out exactly the box
13 around this document.

14 MR. CAMERON: Do you have a recommendation on that
15 scoping issue, John?

16 MR. SUERMANN: Well, I haven't figured out my
17 doctoral thesis in answering that question. But something
18 you have to consider is, if the utility removes the fuel
19 from the plant and can certify to the NRC that they are not
20 going to reload any more, but they haven't opened Yucca
21 Mountain, and you are left with keeping it on-site, and you
22 go to proceed to terminate the license, what happens to the
23 control of the fuel in regard to that, when the plant has
24 already been decommissioned? That is one aspect of it.

25 MS. HICKEY: Well. Okay. The ISFSI is licensed

1 itself and so it will stay there and maintain its license
2 until the fuel is removed and taken to Yucca Mountain or
3 wherever it goes.

4 MR. CAMERON: Michael, do you want to add on to
5 that?

6 And we still have a second question, right?

7 MR. SUERMANN: Right.

8 MR. CAMERON: All right.

9 DR. MASNIK: I just want to amplify that typically
10 a licensee has two choices for dry storage. They can either
11 get a general license or a site-specific license. If they
12 get a general license, they have to maintain a license under
13 Part 50. There can't be a situation where you have fuel and
14 it is unlicensed somewhere, on the ground, somewhere in this
15 country. So, what will happen is if they did have a general
16 license, they would have to convert it to a site-specific
17 license, and, in fact, that three or four acre area would be
18 licensed under Part 72 of our regulations and would stay
19 there until there was a place to ship fuel, and it may be
20 for some time.

21 What we are looking at is the balance of the
22 plant, the actual reactor building, auxiliary building, fuel
23 building and main facility.

24 MR. CAMERON: Eva, do you recall the second
25 question?

1 MS. HICKEY: No.

2 MR. CAMERON: Okay. John, do you want to repeat
3 that for her?

4 MS. HICKEY: I know the answer.

5 MR. SUERMANN: The second question is, when you do
6 the supplement to the GEIS, is it going to produce preferred
7 alternatives along the lines of typical DOE related actions
8 that involve EISs, or is it just going to list a bunch of
9 activities that utilities can look at, and because of the
10 diversity between the type of reactors, it will not specify
11 what the preferred alternative with regard to
12 decommissioning in general is?

13 MS. HICKEY: Yeah, that is a good question. Now,
14 actually, in this case what we are talking about, the action
15 is decommissioning, and so the alternative would be not to
16 decommission. And that is, even though that is an
17 alternative, because of the regulations, that can't happen.
18 So that is why when I was -- instead of talking about the
19 alternatives for the types of decommissioning, DECON or
20 SAFSTOR, ENTOMB, I called them methods. And there will not
21 be a discussion of the preferred method of decommissioning.

22 We will have to address, because NEPA requires it,
23 alternatives, but the alternative would be not to
24 decommission.

25 MR. CAMERON: Okay.

1 MS. HICKEY: Because the action is decommissioning
2 and, therefore, --

3 MR. CAMERON: Is that -- do you want to follow up
4 on that, or does that --

5 MR. SUERMANN: That answers my question, but I
6 have a third different question. I will let somebody else
7 go ahead.

8 MR. CAMERON: Okay. We will come back to you,
9 John. Let's go over here.

10 MR. SIMPSON: Pat Simpson from Commonwealth Edison
11 again. The question I have is, with some of the
12 technologies and other things going on, the amount of waste
13 being generated from a decommissioning site is less than
14 what had been experienced earlier in things, and the
15 question I have is, those earlier numbers were found
16 acceptable in the 1988 Generic Environmental Impact
17 Statement. Now, if the supplement comes out and it says the
18 new numbers in these areas are lower, would that necessarily
19 supersede what was found acceptable earlier? I am kind of
20 gray there in terms of if it was found acceptable earlier to
21 have larger numbers, why you would come out and say now you
22 have got to use smaller numbers?

23 MS. HICKEY: I am going to let Mike answer that
24 one. That is a policy question.

25 MR. CAMERON: Okay, Mike.

1 DR. MASNIK: That is a good question. I would
2 think that what NEPA requires is an honest evaluation, and I
3 think that if we come up with some numbers that are lower
4 than the earlier numbers, that will redefine the boundary.
5 But I am not sure that we are going to find a significant
6 change, but, you know, it is too early to tell.

7 Now, remember, you know, the process is such that
8 we do the analysis and then we come out with a Draft
9 Environmental Impact Statement, and then everybody can
10 comment on it. But I think that we need to do an honest
11 evaluation. And it should be the agency's best guess as to
12 what the impact would be. And if we find out it is
13 acceptable, then I think that would define the envelope.

14 MR. CAMERON: All right. We are going to go up
15 here and then we are going to go to Dale, and we will come
16 back to John. Yes, sir.

17 MR. AKER: Rock Aker, A-k-e-r, with Commonwealth
18 Edison. This actually is a bit of a follow-up from the
19 question that the gentleman from EPA asked. The categories
20 that were evaluated in the '88 GEIS did cover some
21 non-radiological hazards, contaminants, whatnot, but
22 somewhat by definition, the NRC is the most interested in
23 the radiological implications of decommissioning. I mean
24 ultimately you have to presume, prove that a site is clean
25 before your site is released. And to some extent these are,

1 oh, by the way, other evaluations are explored and
2 evaluated.

3 Clearly, we are seeing in the industry that there
4 is another federal agency involved, or can be involved in
5 the final and ultimate release of the site, and that is the
6 EPA, obviously. And particularly, I would say in view of
7 the fact that there are some critical issues that the NRC
8 and EPA aren't shaking their heads the same way at the same
9 time about, I would strongly encourage that this revised
10 document try to incorporate as much as possible the kind of
11 non-radiological contaminants that, frankly, the EPA has
12 interest in, get their participation, and buy into at least
13 the categorization, and even, if you can, some of the
14 boundary conditions, because, as a licensee, that is
15 ultimately going to make it much easier for us, because,
16 otherwise, we may have the problem that we would be released
17 from site license by the NRC and then come under EPA
18 scrutiny, and perhaps appropriately so. So that is my
19 comment.

20 MS. HICKEY: Thank you. I appreciate the comment.

21 DR. MASNIK: Mike Masnik, again. I appreciate the
22 comment and I want you to know that I am happy to see that
23 we have three EPA folks here, one from headquarters, which I
24 know Brian now from about, what, about six or eight meetings
25 already. But we have been working with EPA and it is our

1 fondest hope that we get a document we are all comfortable
2 with.

3 MR. CAMERON: And I guess that, Mike, are there
4 other efforts that the agency is making outside of this
5 Generic Environmental Impact Statement to try to develop
6 some consistency with EPA on these particular issues, right?
7 Okay.

8 Let's go to Dale.

9 MR. RANDALL: Hi, I am Dale Randall with the State
10 of Maine. My question follows on to a response that Mike
11 Masnik made earlier when he said that site-specific issues
12 will be addressed in the LTP. I guess my question is, are
13 non-radiological impacts, per NEPA, intended to be
14 addressed? Is that what was meant by that comment?

15 DR. MASNIK: I wanted to say that many
16 site-specific issues would be addressed in the license
17 termination plan, but not all. For example, endangered
18 species issues. I mean whenever a licensee finds an
19 endangered species that might be impacted, they are
20 required, and we are required to take some action as well.
21 So, I didn't want to give you the impression that it was
22 just at the license termination plan.

23 The license termination plan stage requires the
24 licensee to update their site-specific environmental report,
25 and when they do that, that report requires them to look at

1 the whole suite of impacts. It is not just related to
2 exposure, you know, radiological issues and radiological
3 exposure. So, the answer to your question is, yes, it does
4 require it.

5 MR. CAMERON: Okay. Michael, you had questions
6 before about why the NRC was doing this, and we alluded to
7 the fact that possibly some of the information that was
8 developed during the course of the meeting might provide a
9 better answer to that. Do you still have any questions on
10 why we are undertaking this particular effort?

11 MR. KLEBE: No, I have a better understanding of
12 why.

13 MR. CAMERON: Okay. John, third question.

14 MR. SUERMANN: If you don't already plan, when you
15 do the supplement to the GEIS, perhaps you should consider
16 what type of document you are going to apply to the
17 licensees when they have to do the decontamination surveys.
18 For example, if you are going to use the MARSSIM process
19 that is used for other facilities right now, instead of
20 having to come up with a specific thing for power reactors
21 relative to this supplemental document, can you build on
22 something that the NRC already has that maybe has been
23 fleshed out in its use by that time, as opposed to
24 reinventing the wheel?

25 MR. CAMERON: Are we going to you on this one,

1 Mike?

2 DR. MASNIK: The agency was part of the -- well,
3 it was intimately involved in the development of MARSSIM,
4 and that is what we use now for reviewing license
5 termination plans. So we are not going to -- we are not
6 even going to address that to any great extent, because that
7 is the standard by which we develop a site -- a final site
8 survey to determine whether or not the site can be released.

9 MR. CAMERON: Okay. While people are thinking
10 about other comments or recommendations for us, or
11 questions, we did have one person sign up to make a formal
12 statement. And, Lynne, would you like to do that now? Do
13 you want to come up to the mike, or do you want to use this
14 one? It is up to you.

15 MS. GOODMAN: Well, I just have one more question.

16 MR. CAMERON: All right.

17 MS. GOODMAN: Lynne Goodman from Detroit Edison
18 again. I have one more question on whether or not this will
19 be considered in the supplement, and that is the existing
20 Environmental Impact Statement briefly discussed release of
21 a portion of the facility before the final termination of
22 the license. I was wondering whether or not the supplement
23 will further discuss that, whether it would be release of a
24 building, or release of a portion of the facility.

25 DR. MASNIK: Partial site release is an

1 interesting problem that the agency has been kind of thrust
2 in because of a potential sale of a portion of the Oyster
3 Creek site. Just within the last two months the staff put
4 together a Commission paper, which is before the Commission
5 right now, on a method of releasing a portion of the site.
6 That Commission paper will generate a staff requirements
7 memo probably in the next couple of weeks that will be
8 direction from the Commission towards the staff based on
9 this paper.

10 The paper is a proposed rulemaking plan, and what
11 the staff had proposed to the Commission was a method of
12 release of property, and that that method would be developed
13 in a rule that would go out for public comment. And my
14 understanding is that we should hear something in the next
15 couple of weeks on that. Partial site release is an issue
16 that will be touched upon in the GEIS. But I think that,
17 hopefully, if things go the way we hope it will, we will be
18 a lot further along on partial site release this time next
19 year.

20 MR. CAMERON: How about other questions, other
21 recommendations to the NRC in preparing this? Let's go to
22 EPA.

23 MR. LITTLETON: This is a question, I have my, I
24 guess, own interpretation of this, understanding of this,
25 but I wanted to request a clarification. If the NRC, in

1 doing this supplemental Environmental Impact Statement does
2 define, let's say, a smaller envelope, does that hold all, I
3 guess, all utilities to, I guess, not having levels, let's
4 say, waste levels, if we are talking about waste levels,
5 waste levels that exceed the envelope that is defined?
6 Maybe a little bit of explanation on that process from your
7 point of view could help out some of the facilities.

8 DR. MASNIK: I think what you are asking is the
9 issue of grandfathering. In other words, if the new Generic
10 Environmental Impact Statement comes up with a tighter
11 envelope, would it necessarily apply to those facilities
12 that are undergoing decommissioning at the present time? Is
13 that the question?

14 MR. LITTLETON: That is one way to --

15 DR. MASNIK: Okay. It is a good question. I am
16 not sure that the Commission has made a decision on that
17 issue. And I think that is something that, you know, we
18 have talked about it some, but we really have made a
19 decision.

20 Now, I want you to know that I think that what we
21 have seen, and let's take waste volumes, is that we were off
22 by quite a bit in the original estimate, and that the
23 utilities that are actively shipping waste now are
24 significantly below that number. So, I am not sure that
25 even if the Commission made the decision not to grandfather

1 licensees that would necessarily be a problem for any
2 licensee at the current rate of shipment, but I can't be
3 sure until we do the assessment and look at the numbers.

4 MR. CAMERON: Okay. Thank you, Mike.

5 Dino, did you want to add anything on that?

6 MR. SCALETTI: I believe that he is stating that
7 if someone falls outside the envelope that we develop for
8 the Generic Environmental Impact Statement, how would it be
9 handled? Now, if it fell outside the envelope, then it
10 would require, more than likely, a site-specific analysis
11 for that particular site.

12 MR. CAMERON: Okay. Thanks for that
13 clarification, Dino.

14 Does anybody else have a question or a comment? I
15 would note that, again, the written comment period is open,
16 and, also, after we formally adjourn the meeting, the NRC
17 staff and contractors are going to be here. So, if you want
18 to talk informally, please take advantage of that.

19 Yes, Lynne.

20 MS. GOODMAN: Lynne Goodman, again. I have got
21 one follow-up question from the last question. If, other
22 than the boundaries changing, if the methodologies you are
23 evaluating are different than what was originally assumed,
24 let's just say you see that all plants currently
25 decommissioning are pulling out their steam generators

1 whole, would that be what you would set up as being the
2 methodology for the Environmental Impact Statement
3 supplement, or would you evaluate both that some people may
4 cut them up in the future, even those currently
5 decommissioning are pulling them out whole?

6 MS. HICKEY: What we will do is look at a variety
7 of the ways the activities may be conducted. And I don't
8 think that we would hold that -- I guess we would look at
9 the boundary impact. So, if removing the steam generator
10 whole was the bounding impact, but if you sectioned it as
11 you took it out, it was less impact, then the more bounding
12 impact would be the one we would address.

13 DR. MASNIK: You know, it is an interesting
14 question, but at many meetings years ago I used to say that,
15 gee, people would ask me, what would be an example of
16 something that wasn't covered by the GEIS? And I would say,
17 well, what if someone decided to explosively drop the
18 reactor building? And I thought that was something that was
19 so far outside the bounds of reason that it would be -- it
20 would illustrate a good example. I am not so sure that that
21 hasn't been considered by some folks lately.

22 So what we will try to do is provide an envelope.
23 And if it is clearly outside the bounds of that envelope,
24 then we would have to do a site-specific assessment. That
25 is the best way I can answer the question.

1 MR. CAMERON: And Mike and Eva, we are looking for
2 any suggestions on alternatives that we should -- that we
3 might generically consider. So, does anybody have any
4 suggestions in terms of alternatives that you haven't heard
5 about tonight that the NRC should look at?

6 [No response.]

7 MR. CAMERON: All right. Is it Paul? No. You
8 can still go ahead.

9 MR. SIMPSON: Pat Simpson again with Commonwealth
10 Edison. I don't really have any earth-shattering ideas of
11 how to decommission a plant, but I guess I have a comment in
12 terms of methodology for this supplemental study in that
13 there appears to be some amount of concern about changing
14 the envelope and what impact that would have on people that
15 are undergoing decommissioning. I guess my comment would
16 be, if the scope of the study is supposed to be evaluating
17 lessons learned and experience gained from the reactors that
18 have undergone decommissioning, then use your existing study
19 as a baseline and then provide supplements to it in the
20 areas that have been changed or are being done differently,
21 and provide additional information, versus just scrapping
22 the baseline study and then coming up with a new envelope.
23 That way, people that are currently undergoing
24 decommissioning remain enveloped and people that may be
25 evaluating how to do decommissioning in the future will have

1 more up-to-date information.

2 But it gets back to the issue of you found
3 acceptable several years ago. If there is no basis for
4 saying it is unacceptable now, you shouldn't be changing
5 what is or isn't unacceptable just because licensees are
6 able to utilize better technology to do different things,
7 and that sort of is a negative incentive for certain people
8 to do things better. And, so, I guess that would be my only
9 comment, is if we found the envelope acceptable before,
10 let's leave it there and modify it is in different areas if
11 something like separation or segmentation of the steam
12 generators or vessels is different, maybe add additional
13 information in terms of what could be expected, but not to
14 force people to do that in the future, or not do that just
15 because you have revised the envelope.

16 MS. HICKEY: I think that is a good point. And I
17 think what we would have to do is defend why an
18 environmental impact that was considered acceptable before
19 is no longer acceptable.

20 MR. CAMERON: It seems like there is -- not only
21 you, Pat, but others have raised this concern, and I guess I
22 would ask the NRC staff whether the Generic Environmental
23 Impact Statement will explicitly address this issue about
24 how it will affect the status quo. And, Mike, I don't know
25 if you want to say anything on that now, or perhaps you

1 already have said enough.

2 DR. MASNIK: I think what you said is a good idea.
3 We need to look into it. I think that, as I mentioned
4 earlier, I think as time goes on and the technology gets
5 better, we should realistically evaluate what the impacts
6 are. But at the same time, I understand the point that we
7 can't constantly tighten the envelope which may have the
8 detrimental effect of putting us in a situation where we
9 might be changing the waste volume only to result in a
10 larger impact on worker exposure, let's say. And that is
11 something we need to look at.

12 MR. CAMERON: Okay. Let's go back to -- it is
13 Rock?

14 MR. AKER: Rock Aker with Commonwealth Edison. A
15 question regarding your evaluation of costs going forward.
16 Will any part of that deal with the changes virtually state
17 by state in deregulation of the electric industry?

18 MS. HICKEY: I will let Steve handle that question
19 since he is our cost --

20 MR. CAMERON: Okay. We are going to go over to
21 Steve. Implications of deregulation.

22 MR. SHORT: In our cost analysis, we will look at
23 a reasonable way of -- we are going to look at reasonable
24 ways of decommissioning plants and develop reasonable
25 estimates of what we think it would take to decommission

1 using those methodologies. That might include using vendors
2 for waste processing, that will reduce the cost of waste
3 processing and generation and that kind of stuff.

4 Specifically, with deregulation of the nuclear
5 power industry, I don't foresee at this point impacting the
6 cost analysis based on how deregulation might proceed, since
7 I don't know how to -- I don't know how I would address
8 that. Okay.

9 MR. CAMERON: Rock, did you want to make a
10 recommendation on how the NRC might address that particular
11 issue?

12 MR. AKER: I would love to, but that would be my
13 Ph.D. thesis. All I would say, it is certainly premature
14 until we get a better idea of what this document is going to
15 look like. My only point is it certainly is going to have
16 substantial economic impact across the country, so you ought
17 to at least factor that in.

18 MR. CAMERON: We are going to go to the other
19 doctoral student.

20 Now, John, did you have another question, comment?
21 Let's stop on the way at Dale.

22 MR. RANDALL: Dale Randall with the State of
23 Maine. I am looking at Slide 23, which is up on the
24 viewgraph, and bearing in mind that it is a scoping meeting,
25 is this the proposed scope of the current document?

1 MS. HICKEY: These are the impacts that we are
2 proposing to look at, and part of the scoping is to decide
3 whether there is additional impacts that we should look at.

4 MR. RANDALL: So you might change those then in
5 response to a comment?

6 MS. HICKEY: Right. Exactly.

7 MR. RANDALL: Okay. Thank you.

8 MR. CAMERON: Okay. John.

9 MR. SUERMANN: My question will build on the one
10 that Mr. Aker just asked. When you look at the item or the
11 bullet labeled "Costs" on the current slide on the
12 viewgraph, is the GEIS process going to look at the impact
13 of when a licensee submits its decommissioning plan, that if
14 it doesn't have enough money in its current funding profile,
15 I believe Eva said earlier that the NRC could require the
16 licensee to have to go and get additional funding. If you
17 stop and think about that for a minute, how is the utility
18 going to go out and get capital funding in the marketplace
19 for an asset which is now non-performing, to pay for the
20 cost of decommissioning something?

21 If that is not considered in the GEIS, then
22 somebody needs to look at it, because you are going to
23 handicap the utilities saying they have to have more funds
24 to decommission, and what kind of quid pro quo are they
25 going to bring to financial markets to get the money to do

1 this when they going to have a non-performing asset?

2 MR. CAMERON: I guess there is two issues there.
3 One is should that be, and how should it be addressed in the
4 GEIS? And there is also the separate question, I don't know
5 if we have the information on that, is outside of the GEIS,
6 how would that situation be handled?

7 MR. SHORT: First off, I guess, you know, Zion is
8 a good example of this. Zion is a reactor power plant that
9 didn't have sufficient funds to do the decommissioning, and
10 so they chose to go to SAFSTOR partly for that reason.

11 The GEIS will not tell a utility which of those
12 methodologies to use. So while we probably need to address
13 it somehow and in some way, in the end I don't think the NRC
14 will be telling, in the GEIS, that a utility that needs to
15 go out and procure the funds to do immediate dismantlement.

16 MR. CAMERON: Okay. Anybody want to add anything
17 on the issue generally, even outside the GEIS, as to what
18 happens in a situation like that?

19 DR. MASNIK: I think the question is kind of
20 taking a turn here. But you are aware, of course, that
21 licensees have a fund and they continually add to it. And
22 the concern very often is for prematurely shutdown plants.
23 The plan is that at the time that the facility ceases
24 operation, there should be enough money in the fund.

25 Now, what we have dealt with, except in possibly

1 one case, is facilities that prematurely shut down. I think
2 we have spent a lot of time and effort on being concerned
3 about costs at nuclear power plants for decommissioning and
4 assuring that the money is there. This is a personal
5 opinion, so far it hasn't been a problem. Now, there are
6 licensees that may choose to go into SAFSTOR to build up the
7 fund, but even in those situations where licensees hadn't
8 completely funded the fund, and chose to begin active
9 dismantlement, and a good example for that is Trojan, they
10 have been able to come up with Letters of Credit and money
11 to finish the job.

12 So I am not sure that it is as big a concern as we
13 once thought. But it is a concern still, and it is a
14 concern that we will address. So, if that helps at all.

15 MR. CAMERON: Great. Thanks, Mike.

16 Lynne.

17 MS. GOODMAN: Will the cost -- Lynne Goodman.
18 Will the cost work that is being done for this GEIS feed
19 back also to the other regulations about adequate funding?
20 Is the cost study going to be totally redone and then
21 revisited there?

22 MR. CAMERON: Mike, you might want to also address
23 the generic issue of how -- what implications does the GEIS
24 have for changes in regulations?

25 DR. MASNIK: It is not our intent to use the GEIS

1 as a basis for changing 50.72 -- 75 -- 50.75, which
2 establishes the generic amount of money that a licensee
3 needs to put aside to assure that there is adequate funds
4 for decommissioning. So the answer is no.

5 MR. CAMERON: Anybody else before we adjourn for
6 tonight?

7 [No response.]

8 MR. CAMERON: I would just thank Eva for her
9 presentation and thank all of you. And I would ask Mike, as
10 the senior NRC official, I believe, if he has anything that
11 he wants to add to close the meeting.

12 DR. MASNIK: This is the first one of these that
13 we have held, and we weren't sure what we were going to get
14 out of the meeting. And I think all of us from the NRC will
15 go home tonight and say, gee, we got a lot of good questions
16 and we got a lot of good comments. And I am now looking
17 forward to the next three meetings, because I think we will
18 continue to get good questions and comments. And I think we
19 will end up with a document that is a lot better than we
20 would have ever been able to generate on our own.

21 So, I guess thank all of you for coming and I am
22 glad that we have had this time to question how we are going
23 to go about doing this. It is a pretty big task. I think
24 it is turning out to be a lot bigger than we had expected.
25 So, thank you very much for coming tonight.

1 MR. CAMERON: Thank you. We are adjourned.

2 [Whereupon, at 8:40 p.m., the meeting was
3 concluded.]

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REPORTER'S CERTIFICATE

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

NAME OF PROCEEDING: PUBLIC MEETING TO SOLICIT
PUBLIC INPUT ON DRAFT
SUPPLEMENT TO GENERIC
ENVIRONMENTAL IMPACT STATEMENT
ON DECOMMISSIONING OF NUCLEAR
FACILITIES

CASE NO:

PLACE OF PROCEEDING: Lisle, IL

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.



Tom Gustafson

Official Reporter

Ann Riley & Associates, Ltd.

AGENDA - NRC SCOPING MEETINGS ON THE GENERIC ENVIRONMENTAL IMPACT STATEMENT (GEIS) ON REACTOR DECOMMISSIONING

7:00 P.M. Welcome, Objectives, Groundrules, Agenda Overview

F.X. Cameron, facilitator

7:10 P.M. Overview of why and how the NRC plans to develop an GEIS on reactor decommissioning

Dino Scaletti, NRC Office of Nuclear Reactor Regulation

Audience questions

7:30 P.M. Background on the current NRC reactor decommissioning process

Eva Eckert Hickey, Pacific Northwest National Laboratory

Audience questions

8:15 P.M. Discussion of audience GEIS scoping issues

10:00 P.M. Adjourn

INFORMATION SHEET



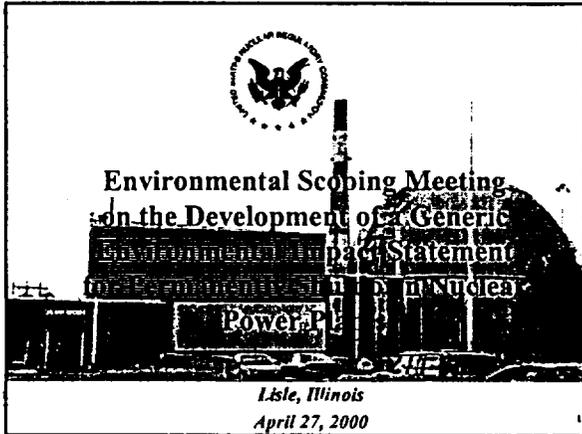
The U.S. Nuclear Regulatory Commission's Public Scoping Process on Environmental Issues Pertaining to Decommissioning Nuclear Power Plants

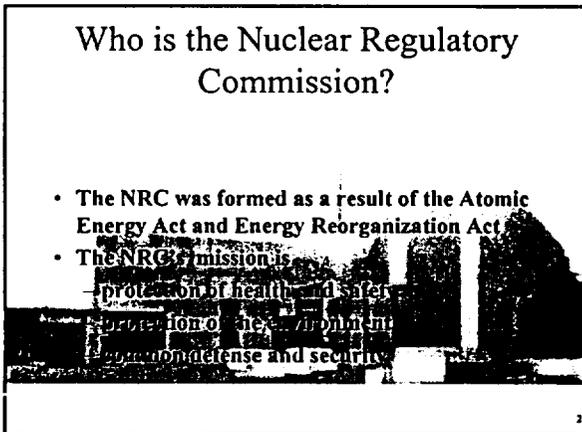
The U.S. Nuclear Regulatory Commission (NRC) is gathering information necessary to prepare a supplement to the *Final Generic Environmental Impact Statement of Nuclear Facilities*, NUREG-0586, for power reactors only. The NRC is interested in public comments on environmental issues and the proposed scope of the staff's environmental review.

Written comments can be submitted by e-mail to DGEIS@NRC.GOV or to the following address postmarked no later than July 15, 2000:

Chief, Rules and Directives Branch
Division of Administrative Services, MS T-6D 59
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

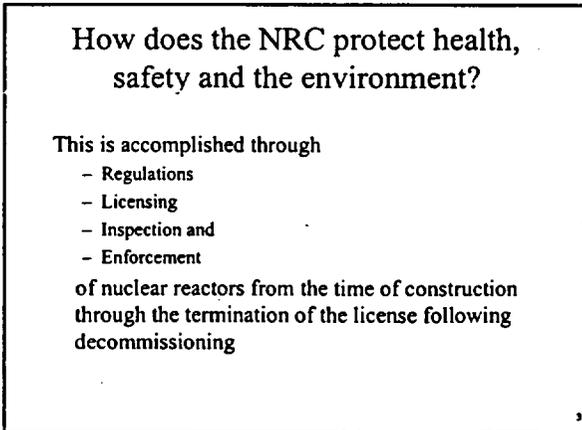
For additional information, contact Dino C. Scaletti, NRC Senior Project Manager, Decommissioning Section, Project Directorate IV & Decommissioning, Division of Licensing Project Management, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, MS 0-11D19 Washington, DC 20555-0001, or at 1-800-368-5642, ext. 1104.





Who is the Nuclear Regulatory Commission?

- The NRC was formed as a result of the Atomic Energy Act and Energy Reorganization Act
- The NRC's mission is
 - protection of health and safety
 - protection of the environment
 - common defense and security



How does the NRC protect health, safety and the environment?

- This is accomplished through
- Regulations
 - Licensing
 - Inspection and
 - Enforcement
- of nuclear reactors from the time of construction through the termination of the license following decommissioning

Purpose of this Scoping Meeting

- discuss the proposed update of the GEIS for decommissioning
- discuss the NEPA process
- provide background information on decommissioning
- discuss review of environmental impacts from decommissioning
- INVITE PUBLIC COMMENT on this activity

What is NEPA?

The National Environmental Policy Act (NEPA) has two aims

- places responsibility upon Federal agencies to *CONSIDER* every significant aspect of the environmental impact of a proposed action
- ensures that the Federal agency will *INFORM* the public that it has indeed considered environmental concerns in its decision-making process

What is NEPA?

- Environmental Impact Statements (EISs) are required for major Federal actions.
- Supplements to draft or final EISs are required when there is significant new circumstances or information relevant to the environmental concerns
- Generic EISs are allowed if the impacts are similar and for a number of similar facilities

What is a Generic Environmental Impact Statement for decommissioning?

A GEIS for decommissioning identifies environmental impacts

- that may be considered generic for all nuclear reactor facilities
- that need to be considered in more detail for a specific facility

7

What is a Generic Environmental Impact Statement for decommissioning?

A GEIS for decommissioning examines the range of environmental impacts from different

- nuclear facility designs
- decommissioning methods
- facility location

8

Why is the NRC updating the GEIS?

- Original GEIS was published in 1988
- New regulations for decommissioning were published in 1996
- Increased U.S. decommissioning experience
 - 21 shutdown facilities in various stages of decommissioning
- New information is available

9

What will be in the revised GEIS?

- will only address permanently shutdown reactors
- will be published as a supplement to original GEIS
- will incorporate new information learned from recent decommissionings

10

The NEPA Process for Decommissioning

- Notice of Intent - March 14, 2000
- Scoping Process - March 14 - July 15, 2000
- Evaluation of environmental impacts, alternatives, mitigation measures
- Draft EIS issued for public comment - early 2001
- Public comment period - 60 days after publication
- Final EIS issued - late 2001

11

Background on Decommissioning

- 1988 Decommissioning rules required submittal of a Decommissioning Plan
- Mid 1990's - the NRC reassessed the value of the detailed Decommissioning Plan and revised NRC regulations

12

Decommissioning Process

- Licensee certifies
 - Operations permanently ceased
 - Fuel removed from the reactor vessel
 - Certifications are irreversible
- License no longer authorizes fuel loading
- Post-shutdown activities report

13

Decommissioning Process

- Site-specific cost estimate
- Long-term storage followed by dismantlement or immediate dismantlement or a combination of both
- License Termination Plan
- License terminated

14

What is a Post-shutdown Decommissioning Activities Report (PSDAR)?

The PSDAR is a document submitted early in the decommissioning process that provides a

- description of the planned decommissioning activities
- schedule for the accomplishment of the planned activities
- estimate of expected costs
- discussion of environmental impacts

15

What is the purpose of the PSDAR?

- Provides a general overview of the facility decommissioning to the public and the NRC
- Allows for any safety inspections prior to major decommissioning activities
- Allows NRC to allocate resources for future inspection oversight
- Requires the licensee to examine their financial resources prior to starting any major decommissioning activities and
- Ensures that decommissioning plans do not result in environmental impacts not previously considered

16

What are the Methods of Decommissioning?

- DECON
- SAFSTOR
- ENTOMB
 - 1988 GEIS concluded that ENTOMB probably was not a viable option for decommissioning at that time.
- Combination of above methods

17

Typical activities performed during DECON

- Decontamination
 - removal of contamination from systems and structures
 - removal of large radioactive components
- Dismantlement
 - removal of piping and other components
 - removal of buildings (possible)
 - transportation of waste to a storage facility

18

Typical activities performed during the storage phase of SAFSTOR

- Preparations for SAFSTOR
 - deactivate systems
 - drain and flush plant systems
 - perform radiological assessment
- Activities during SAFSTOR
 - preventative and corrective maintenance
 - maintain structural integrity

19

A look at the permanently shutdown reactor facilities

21 reactors shutdown between 1963 and 1998

- 2 completed decon and dismantlement
- 6 undergoing decon and dismantlement
- 7 currently in long-term storage
- 2 planning long-term storage
- 4 planning a combination of long-term storage and decon and dismantlement

20

A look at the permanently shutdown reactor facilities

Different types and sizes of reactors

- 8 Boiling Water Reactors
- 10 Pressurized Water Reactors
- 3 other
- Between 23 MW and 3411 MW thermal

21

License Termination process

- soil remediation
- final radiation survey
- termination of license

21

What Environmental Impacts will be assessed in the revised GEIS?

- | | |
|------------------------|---------------------------------|
| • Land use | • Costs |
| • Water use/quality | • Socioeconomic impacts |
| • Air quality | • Environmental Justice |
| • Ecology | • Historical and archaeological |
| • Radiological impacts | • Noise |
| • Postulated accidents | |
| • Transportation | |

22

Schedule and Address for Written Comments

- Written comments will be accepted until July 15, 2000
- Comments can be provided by mail, in person, or e-mail
- NRC point of contact is: Dino Scaletti
1-800-368-5642 ext. 1104

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