

April 17, 2001

ACTION: DEVELOPMENT OF A DRAFT SUPPLEMENT TO NUREG-0586, "FINAL  
GENERIC ENVIRONMENTAL IMPACT STATEMENT ON DECOMMISSIONING  
OF NUCLEAR FACILITIES"

SUBJECT: ISSUANCE OF A SCOPING SUMMARY REPORT OF COMMENTS RECEIVED  
RELATED TO THE INTENT TO DEVELOP A SUPPLEMENT TO NUREG-0586  
(65 FR 13797)

The NRC held four public scoping meetings to inform the public regarding its intent to prepare a supplement to NUREG-0586, "Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities," and to accept public comment on its proposal. The meetings were held in Lisle, Illinois, on April 27, 2000, in Boston, Massachusetts, on May 17, 2000, in Atlanta, Georgia, on June 13, 2000, and in San Francisco, California, on June 21, 2000. All of the meetings were transcribed and the four transcripts can be found on the NRC Web site at <http://www.nrc.gov/NRC/REACTOR/DECOMMISSIONING/GEIS/index.html>.

In addition to receiving comments at the public meetings, the staff accepted written public comments through July 15, 2000, and beyond. The staff received 397 comments which are identified in the attached Scoping Summary Report. The report groups the comments and then characterizes them as "within scope," those comments that will be covered by the supplement to NUREG-0586, or "not within scope," those comments that will not be covered by the supplement. Comments were sought only on the intent to prepare a supplement to NUREG-0586. The NRC staff currently projects issuance of the draft supplement in mid 2001. Comments on the draft supplement will be solicited at that time.

Dino C. Scaletti, Project Manager **/RA/Signed By: DCScaletti**  
Environmental, Financial Section  
Generic Issues, Environmental, Financial,  
and Rulemaking Branch  
Division of Regulatory Improvement Programs  
Office of Nuclear Reactor Regulation

Attachment: Scoping Summary Report

cc w/att: See next page

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ISSUANCE OF A SCOPING SUMMARY REPORT OF COMMENTS RECEIVED RELATED TO THE  
INTENT TO DEVELOP A SUPPLEMENT TO NUREG-0586 (65FR 13797)

cc:

Eric Goldin  
Southern California Edison  
P. O. Box 128  
San Clemente, CA 92674-0128

Kathleen Yhip  
Southern California Edison  
P. O. Box 128  
San Clemente, CA 92674-0128

Robert Bledsoe  
Southern California Edison  
P. O. Box 128  
San Clemente, CA 92674-0128

Edward B. Rippy  
491-23rd St. #43  
Oakland, CA 94612

Robert Kosseff  
Western States Legal Foundation  
2357 Bryant  
San Francisco, CA 94110

Ward Young  
Bay Area Nuclear Waste Coalition  
P. O. Box 894  
Bollinas, CA 94924

Barbara George  
Women's Energy Matters  
P. O. Box 12487  
Berkeley, CA 94712

Irmi Meindl  
1323 Hopkins St.  
Berkeley, CA 94702

Jay Vance  
46 West Broadway - Suite 116  
Salt Lake City, UT 84101

Jackie Cabasso  
Western States Legal Foundation  
1440 Broadway - Suite 500  
Oakland, CA 94612

Catherine Mitchell  
Blue Ridge Environmental Defense League  
5101 Markay Street  
Matthews, NC 28105

Paul Wagner  
US EPA Region 4  
61 Forsyth Street  
Atlanta, Georgia 30303

Jonathan M. Block, Esq.  
AP. O. Box 566  
Putney, VT 05346-0566

David Rothstein  
US EPA - New England  
1 Congress Street - Suite 1100 - RCA  
Boston, MA 02114-2023

John M. Oddo  
Duke Engineering and Services  
Solomon Pond Park  
Yas Donald Lynch Blvd  
Marlborough, MA 01752

Merrill Atkins  
Yankee Atomic Electric Co.  
19 Midstate Drive - Suite 200  
Auburn, MA 01501

Mary Lampert  
Mass Citizens for Safe Energy  
148 Washington Street  
Duxbury, MA 02332

Deb Katz  
Box 83  
Shelburne, MA 01370

Sandra Streeter  
91 W. Mt. Road  
Bernardstan, MA 01337

Tim Judson  
162 Cambridge St.  
Syracuse, NY 13210

Pat Dostie  
State of Maine, Dept of H.S., Div of H.E.  
State House Station  
Augusta, ME 04333

Ken Pallag  
10269 US 31 North  
Charlevoix, MI 49720

Tracy Goble  
10265 US 31 North  
Charlevoix, MI 49720

Paul Genoa  
Nuclear Energy Institute  
1776 I Street, NW  
Washington, DC 20006

Raymond Shadis  
New England Coalition of Nuclear Pollution  
P. O. Box 98  
Edgecomb, ME 04556

Federico Perdomo  
89 Woodfield Crossing  
Rocky Hill, CT 06067

Rosemary Bassilakic  
54 Old Turnpike Road  
Haddam, CT 06438

George Zinke  
Maine Yankee  
321 Old Ferry Road  
Wiscasset, ME 04578

Thomas LaGuardia  
TLG Services, Inc.  
148 New Milford Road East  
Bridgewater, CT 06752

Joe Carignam  
622 Montgomery Road  
Chattanooga, TN 37343

Pat Simpson  
1441 Lark Lane  
Naperville, IL 60565

Lynne Goodman  
727 Scarlet Oak  
Monroe, MI 48162

Dale Randall  
10 State House Station  
Augusta, ME 04330

Jack Barnette  
US EPA  
77 West Jackson  
Chicago, IL 60604

Brian Littleton  
US EPA  
1200 Pa Ave, NW  
Washington, DC 20460

Rock Aker  
661 Oakhurst Court  
Naperville, IL 60540

**Draft  
Generic Environmental Impact  
Statement  
Scoping Process**

**Summary Report**

**Decommission Nuclear Power  
Reactors**

**Lisle, IL April 26, 2000  
Boston, MA May 17, 2000  
Atlanta, GA June 13, 2000  
San Francisco, CA June 21, 2000**

## Draft Generic Environmental Impact Statement Scoping Summary Report

This report is a summary of the public comments during the scoping process for the update of the Generic Environmental Impact Statement (GEIS) for decommissioning nuclear facilities. The enclosed report contains comments from the following public meetings and written comment letters:

MEETINGS	
Location	Date
Lisle, IL	April 27, 2000
Boston, MA	May 17, 2000
Atlanta, GA	June 13, 2000
San Francisco, CA	June 21, 2000

WRITTEN COMMENT LETTERS	
Name/Organization	Date
Nuclear Information and Resource Service	July 11, 2000
Pamela Blockey-O'Brien	July 12, 2000
Nuclear Information and Resource Service (submitted a supplement to the letter they originally sent)	July 13, 2000
Lynnette Hendricks (Nuclear Energy Institute)	July 14, 2000
Massachusetts Citizens for Safe Energy	July 14, 2000
Campaign for a Prosperous Georgia	July 14, 2000
Paul Gunter (Nuclear Information and Resource Service)	July 14, 2000
George Crocker (Executive Director of the North American Water Office)	July 14, 2000
Citizens Awareness Network	July 15, 2000
Glenn Carroll (Georgians Against Nuclear Power)	July 15, 2000
George A. Zinke (Director, Nuclear Safety & Regulatory Affairs)	July 17, 2000
EPA	

There are a total of 397 comments and they are grouped by subject. There is also a brief response to each group of comments that states whether the comment is considered to be within or outside the scope of the Decommissioning GEIS.

## ACRONYM LIST

ALARA - As Low As Reasonably Achievable

BWR - Boiling Water Reactor

CFR - Code of Federal Regulation

EA - Environmental Assessment

EIS - Environmental Impact Statement

EPA - Environmental Protection Agency

FERC - Federal Energy Regulatory Commission

GEIS - Generic Environmental Impact Statement

GTCC - Greater Than Class C (waste)

ISFSI - Independent Spent Fuel Storage Installation

LTP - License Termination Plan

MARSSIM - Multi-Agency Radiation Survey and Site Investigation Manual

NEPA - National Environmental Policy Act

NCRP - National Council on Radiation Protection and Measurement

NRC - U.S. Nuclear Regulatory Commission

PCB - Polychlorinated biphenyl

PSDAR - Post-shutdown Decommissioning Activities Report

PWR - Pressurized Water Reactor

QA - Quality Assurance

QC - Quality Control

RCRA - Resource Conservation and Recovery Act

SEIS - Supplemental Environmental Impact Statement

TEDE - Total effective dose equivalent

## Generic Environmental Impact Statement - Public Scoping Meeting Comments and Draft Responses

### 1. Why is the GEIS being updated?

Three commenters (five comments) inquired about the reason that the NRC decided to update the GEIS. The question was raised whether the update was based on new information such as worker exposure, volume of high or low level radioactive waste, differences in disposal methodologies or decommissioning methodologies such as in addition to entombment and rubbleization. One commenter asked if the NRC had already found new information that would make the GEIS more conservative.

*Response: The basis for the update of the GEIS will be discussed in the introductory chapter of the GEIS. This comment is within the scope of the GEIS.*

One commenter (in two different comments) questioned the creation of the GEIS if decommissioning is not a major Federal action and also indicated that the GEIS and the decommissioning process are the "deregulation of decommissioning."

*Response: The update of the GEIS as related to the National Environmental Policy Act (NEPA) of 1969 will be discussed in the introductory chapter to the GEIS. This comment is within the scope of the GEIS.*

Four commenters expressed concern that the revisions to the GEIS would be used in negative ways such as to serve private corporate nuclear industry interests, to allow a release of unnecessary radioactive material on and off site or to reduce liability for the nuclear industry and increase environmental damage and public health. One commenter indicated that the GEIS should regulate all forms of radioactive releases.

*Response: The appropriate uses of the GEIS will be discussed in the introductory chapter of the GEIS. This comment is within the scope of the GEIS.*

Three commenters (four comments) agreed with the NRC's efforts to update the 1988 GEIS on decommissioning. One commenter indicated that the supplement should be updated to incorporate and evaluate new decommissioning technologies developed over the past decade. A second commenter specified that rubbleization should be considered.

*Response: One of the purposes of revising the GEIS is to incorporate and evaluate new decommissioning technologies and methods such as rubbleization. This comment is within the scope of the GEIS.*

One commenter stated that they did not believe the current GEIS decommissioning process should be expanded to further minimize and eliminate the plant specific supplemental EIS.

*Response: This comment addresses the decommissioning process as set forth by NRC regulations and is not within the scope of the GEIS. In 1996, the NRC published the final rule on the current decommissioning regulations. The Commission determined that under the National Environmental Policy Act (NEPA)*



of 1969, as amended, and under the Commission's own regulations, major decommissioning (dismantlement) activities could proceed without an environmental assessment (EA). The impacts of these major decommissioning activities were determined to be within the bounds of those that were assessed in the NRC's Generic Environmental Impact Statement (GEIS) on Decommissioning (NUREG-0586), issued in 1988. However, because the GEIS did not address site-specific situations, the final rule prohibits major decommissioning activities that could result in significant environmental impacts not previously reviewed. The review process also includes a requirement that the licensee provide the reasons for concluding that the planned activities are bounded by the GEIS and previous site-specific environmental impact statements. At the license-termination stage, the Commission does require an environmental assessment at the time that the license is amended.

## **2. How will the GEIS be used?**

One commenter inquired as to how the GEIS would be used.

*Response: The appropriate uses of the GEIS will be discussed in the introductory chapter of the GEIS. This comment is within the scope of the GEIS.*

Two commenters suggested that the NRC produce a generic environmental regulatory guide or other substantive guidance to give the licensees a comprehensive list of criteria that will be analyzed by the NRC such as required submissions in their Post-Shutdown Decommissioning Activities Report (PSDAR) and License Termination Plan (LTP).

*Response: The development of environmental regulatory guides is not within the scope of the GEIS. A regulatory guide providing guidelines on the standard format and content of PSDARs was published in August 2000 as Regulatory Guide 1.185, "Standard Format and Content for Post-shutdown Decommissioning Activities Reports." Regulatory guidance on the standard format and content of license termination plans was published in January 1999 as Regulatory Guide 1.179, "Standard Format and Content of License Termination Plans for Nuclear Power Reactors."*

One commenter encouraged the NRC to make the Supplemental Environmental Impact Statement (SEIS) user friendly with plain English and straightforward explanations for the public.

*Response: The NRC has specific criteria that must be met in publications that are related to the usage of plain English. This comment is within the scope of the GEIS.*

## **3. Will the GEIS satisfy the NEPA process?**

One commenter asked about the actions and reviews involved in determining if the environmental impact concerns considered by the NRC sufficiently satisfy the NEPA requirements.

*Response: The relationship between the GEIS and the NEPA requirements will be discussed in the introductory chapter. This comment is within the scope of the GEIS.*

One commenter asked if the NRC was planning on communicating the results of the scoping meetings and the final scope of the GEIS to the public.

*Response: The NEPA process provides for publishing and presentation of a draft report for comment before the final GEIS is issued. The comments noted in this summary report as being within the scope of the GEIS will be addressed in the draft GEIS. Comments on the draft GEIS will be solicited and considered before the report is finalized. This comment is within the scope of the GEIS.*

One commenter asserted that the NRC made false assumptions in the GEIS and indicated that these assumptions must be addressed and the true risk discovered before any further generic considerations are implemented.

*Response: The assumptions in the 1988 GEIS will be reconsidered in the development of the supplement to the GEIS. This comment is within the scope of the GEIS.*

One commenter indicated that decommissioning was a Federal major action and required NEPA compliance and site specific EISs.

*Response: Chapter 1, the introduction to the GEIS, will describe the NEPA requirements for site specific EISs and the basis for the agency's determination that decommissioning is not a Federal major action. This comment is within the scope of the GEIS.*

One commenter stated that the 1988 GEIS is a robust analysis that has stood the test of time. They supported a supplement at this time.

*Response: A discussion of the use of the previous GEIS will be provided in the Introductory chapter (Chapter 1) of the GEIS. This comment is within the scope of the GEIS.*

#### **4. Reactors that will be included in the GEIS**

One commenter thought the GEIS should be explicit regarding which reactors were covered. The commenter was specifically concerned about Peach Bottom and Fermi.

*Response: The applicability of the GEIS to specific reactor facilities will be discussed in the introduction (Chapter 1) of the GEIS. This comment is within the scope of the GEIS.*

One commenter indicated that it was prudent at this time to incorporate issues that were identified through actual experience and to include issues relevant to the limited number of commercial non-light water reactors

*Response: The use of data from previous reactor decommissioning experience will be discussed in the GEIS. This comment is within the scope of the GEIS.*

## **5. Decommissioning Activities**

### **A. General Decommissioning Activities**

One commenter inquired how the GEIS would handle two different methodologies for the same activity (such as removing steam generators as a whole or in pieces).

*Response: The GEIS will consider different methods for an activity to determine an acceptable envelope for that activity. If an activity results in impacts that are outside of the envelope then a site specific assessment may be required. This comment is within the scope of the GEIS.*

One commenter indicated that the GEIS should provide more detail about specific decommissioning activities and technologies in order to accurately assess the associated environmental impacts. Another commenter indicated that they did not agree with the statement that decommissioning activities are not significantly different from operating the plant.

*Response: The GEIS will consider specific decommissioning activities. This comment is within the scope of the GEIS.*

### **B. Decommissioning Methods**

One commenter encouraged the NRC to adequately address alternatives. A second commenter inquired whether a preferred alternative would be specified in the GEIS.

*Response: The GEIS will address alternatives to the proposed action as required by the NEPA process. This comment is within the scope of the GEIS.*

#### **1. DECON - No comments**

#### **2. SAFSTOR**

One commenter encouraged the use of the SAFSTOR option because of the advantages in terms of exposure to workers and the public. Another reason for the commenters support of SAFSTOR as an option was their opposition to shallow land burial of radioactive waste.

*Response: The GEIS will address the options for decommissioning activities including SAFSTOR and variations to*

*SAFSTOR (such as the duration of the storage period or the use of incremental DECON, which includes occasional decontamination and dismantlement activities during the SAFSTOR period). This comment is within the scope of the GEIS.*

### **3. Entombment**

One commenter asked what factors had changed since the 1988 GEIS that would suggest that ENTOMB was a possible option. A second commenter suggested that the lack of dumps for contaminated material made entombment a viable solution. A third commenter asked why entombment was considered to not be viable. And a fourth commenter inquired why the NRC would even be considering entombment if they already knew that the residual levels of radioactivity would be unacceptable.

*Response: The GEIS will address varying options for decommissioning activities including ENTOMB. These comments are within the scope of the GEIS.*

One commenter encouraged the NRC to address entombment and to consider a name change to SAFSTOR II or Assured Isolation.

*Response: The GEIS will address varying options for decommissioning activities including ENTOMB. This comment is within the scope of the GEIS.*

One commenter indicated that a supplemental EIS must be required for the entombment option to assess the impact of what they perceive to be near surface dumping of greater-than Class C (GTCC) waste.

*Response: The GEIS will address varying options for decommissioning activities including ENTOMB. This comment is within the scope of the GEIS.*

### **4. Rubblization**

Five commenters indicated that rubblization was an area that needed to be addressed in the revised GEIS. One commenter also added in a second comment that this included the environmental impact of residual radioactive material deeper than six-inches below the surface, activated concrete, activated re-bar, internal contamination in cracks, and sub-slab contamination. One of the commenters recommended that an additional intruder scenario be addressed.

*Response: The GEIS will consider various decommissioning activities including rubblization. These comments are within the scope of the GEIS.*

Two commenters indicated that rubblization turns the reactor site into a low-level or perhaps high-level radioactive waste site and that deep

monitoring wells, liners, etc., should be required and evaluated on a site-specific basis. One commenter also mentioned that salt water corrosion should be evaluated because of the potential for some leakage from the facility if the waste is left on site, such as occurs in rubblization.

*Response: The GEIS will consider various decommissioning activities including rubblization. These comments are within the scope of the GEIS.*

## **5. Partial Site Release**

Three commenters stated that partial site release should be addressed in the GEIS. One commenter inquired whether partial site release would be addressed in the GEIS supplement. Another commenter stated that they opposed partial site release.

*Response: The GEIS will consider partial site release and whether it can be included as a generic issue. These comments are within the scope of the GEIS.*

## **C. Specific Activities to be included in the GEIS**

### **1. Decommissioning Process**

One commenter suggested that following the decommissioning process, the NRC should inspect the plant to find out what material has degraded, how well the material was physically managed and whether or not maintenance activities were adequate. These lessons could be applied to other power plants.

*Response: During operation and decommissioning, there is a formal inspection program that is followed, depending on the status of the plant. This comment is not within the scope of the GEIS.*

Two commenters thought that a hard look at the environmental issues needs to be taken before starting decommissioning activities. One of the commenters added that a three year planning period is needed and wondered why the NRC does not require a period of SAFSTOR while planning for the decommissioning.

*Response: The development of regulations related to the requirements for a storage period are not within the scope of the GEIS. The 1988 GEIS concluded that DECON was one of several reasonable options for decommissioning nuclear power reactors and as a result it would be inappropriate for the NRC to impose requirements related to a mandatory SAFSTOR period. In cases where the permanent cessation of operation is planned three to five years in advance of final shutdown, the majority of the decommissioning planning may have been completed by the time that the facility permanently ceases operations.*

One commenter expressed enthusiasm for the shutdown of nuclear power plants.

*Response: The decisions related to permanent cessation of operations are not within the scope of the GEIS. The GEIS on decommissioning encompasses that period of time that starts following the decision to permanently cease operations or following the permanent cessation of operations for those facilities where the decision is made while the facility is still operating.*

One commenter recommended that radioactive materials be transferred only from one licensee to another.

*Response: The development of regulations related to the requirements for the transfer of radioactive materials is not within the scope of the GEIS. Regulations for the transfer of radioactive materials are given in various parts of Title 10 of the Code of Federal Regulations. For example*

- Part 74 contains regulations related to the transfer of special nuclear materials (containing plutonium or various isotopes of uranium such as would be found in spent nuclear fuel).*
- Part 71 discusses the requirements for packaging, transport or delivery to a carrier for transport of radioactive material.*
- Part 61 discusses the requirements for a land disposal facility that would allow them to accept low-level radioactive wastes.*

Two commenters recommended that contractors be qualified to work with nuclear materials and not be allowed to subcontract to companies that do not have a proven record of working with nuclear materials.

*Response: The development of regulations related to the contracting of decommissioning work is not within the scope of the GEIS. A number of existing regulations speak to the requirements that must be met before individuals work with nuclear materials. For example 10 CFR 20.2102 specify training requirements.*

One commenter specified the method to use for decontaminating the reactor.

*Response: The development of regulations related to the method that must be used to decommission the facility is not within the scope of the GEIS. The 1988 GEIS concluded that DECON and a 30-year SAFSTOR are both reasonable options for decommissioning pressurized water reactors (PWRs) and boiling water reactors (BWRs).*

## **2. PSDAR**

One commenter inquired whether the PSDAR considers both radiological and non-radiological impacts.

*Response: The requirements for the contents of the PSDARs are provided in the regulations and are not within the scope of the GEIS. Regulatory Guide 1.185 states that the potential impacts that should be considered should include both radiological and nonradiological impacts. Examples of nonradiological impacts include transportation impacts, impacts from dust, noise, water use, and hazardous waste.*

Four commenters in seven comments thought the PSDAR was vague, inadequate, and lacked information. One commenter indicated the PSDAR should contain clear methodologies and sufficient detail.

*Response: The requirements for the contents of the PSDARs are provided in the 10 CFR 50.82(a)(4) regulations and in Regulatory Guide 1.185. Further discussion is not within the scope of the GEIS.*

One commenter did not agree with the definition of major decommissioning activities or with the idea that other "not major" activities could occur before the PSDAR is submitted.

*Response: The definition of major decommissioning activities is specified in 10 CFR 50.2 and the requirements for the submittal of the PSDAR are provided in 10 CFR 50.82(a)(4) of the regulations and in Regulatory Guide 1.184, "Decommissioning of Nuclear Power Reactors." This comment is not within the scope of the GEIS.*

One commenter was concerned that the only time a site-specific analysis would be conducted for a decommissioning plant would be if the facility failed the PSDAR.

*Response: The GEIS will discuss the circumstances that will result in a site-specific analysis. This comment is within the scope of the GEIS.*

One commenter thought the limited amount of detail in the PSDAR curtailed the public's knowledge related to the method of radiological doses and the environmental impacts.

*Response: The requirements for the contents of the PSDARs are provided in the regulations and are not within the scope of the GEIS. The amount of detail in the PSDAR is comparable to the amount of detail that the staff feels is necessary to show whether the radiological doses and environmental impacts are adequately enveloped by the facility's EIS and the GEIS.*

### **3. Public Meetings**

Four commenters (8 comments) indicated frustration with the public participation process. One commenter indicated the NRC was responsible for informing the community and soliciting community involvement when a licensee plans decommissioning. This commenter also indicated that all communications should be available to the public. One commenter thought the public participation process was inadequate. Another believed that thorough and early public outreach was essential. One commenter expressed her belief that public opinion does not actually change the outcome of any of the NRC's decisions and generally disagreed with NRC's method of public involvement.

*Response: The requirements for the public participation process during decommissioning is provided in the regulations. The public meeting following the receipt of the PSDAR is discussed in 10 CFR 50.82(a)(4). The public input at the time of the license termination plan submittal is addressed in 10 CFR 50.82(a)(9)(iii). Further information is provided in Regulatory Guide 1.184. These comments are not within the scope of the GEIS.*

One commenter expressed that public hearings should be held at every reactor decommissioning site, rather than having two public meetings during the process of decommissioning.

*Response: The requirements for the public participation process during decommissioning is provided in the regulations. The public meeting following the receipt of the PSDAR is discussed in 10 CFR 50.82(a)(4). The public input at the time of the license termination plan submittal is addressed in 10 CFR 50.82(a)(9)(iii). Further information is provided in Regulatory Guide 1.184. This comment is not within the scope of the GEIS.*

#### **4. Citizen Advisory Panels**

Three commenters discussed community advisory panels and expressed a concern that they needed to be funded. One commenter also added that the panels need to be independent, convened by a state, county or nearby university, not the utility, and have control over the budget.

*Response: The establishment of the community advisory panel is not required by NRC regulations and, therefore, is not within the scope of the GEIS. A community advisory panel is a voluntary activity that can be initiated and implemented by the licensee, the State or the local citizens.*

#### **5. Opportunity for Public hearings**

One commenter inquired as to whether there was a method for public intervention at the time of license termination.



*Response: After receiving the license-termination plan, the NRC places a notice of the receipt of the plan in the Federal Register and makes the plan available to the public for comment. The NRC also schedules a public meeting near the facility to discuss the plan's contents with the public. Because this is an action that involves a license amendment, there is also an opportunity for members of the public to request a hearing. This action is regulated by 10 CFR 50.82(a)(9)(iii). This comment is not within the scope of the GEIS.*

One commenter made four different comments related to public participation in a formal adjudicatory hearing related to reactor decommissioning. One comment related to the essential democratic right of a community that may be affected by the effluent discharge pathway to have meaningful participation in the process. The second comment indicated that this process adds to protective oversight and potential litigation. The third and fourth comments were similar in stating that the NRC is curtailing the public's right to participate by trying to streamline its regulations and not allowing intervention or legal recourse by the public.

*Response: The public is notified of the PSDAR and the contents of the PSDAR after it is received by the NRC. A public meeting is also held in the vicinity of the plant to explain the contents of the PSDAR and to obtain public input. Comments and questions may also be submitted at any time in writing to the NRC project manager for the facility. If the licensee has requested an action requiring a license amendment, then there is a process for intervening on that specific action. Even if the action of concern does not involve a license amendment, any member of the public may at any time during the facility decommissioning raise potential health and safety issues in a petition to the NRC to take specific enforcement action against a licensed facility. Since these comments deal with administrative issues, they are not considered to be within the scope of the GEIS.*

## **6. Inspections**

One commenter asked if the decommissioning process could still continue even if inspections showed an increased risk of a hazard.

*Response: NRC Inspection Manual Chapter IMC-2561 is used by the NRC Regional Inspectors to guide the inspection program for decommissioning power reactor facilities. The inspection manual chapters are available from the NRC website (<http://www.nrc.gov/NRC/IM/index.html>). The inspection reports are also located on the NRC website. If the inspections show an increased risk of a hazard, the inspectors will evaluate the risk and the hazard and determine if changes are required to the decommissioning process. The inspection process during decommissioning is not within the scope of the GEIS.*

## **7. Removal of Resident Inspectors**

Two commenters thought that the removal of onsite inspectors from the decommissioning facility constituted a degraded level of regulatory oversight and the potential for the spread of contamination.

*Response: The inspection effort at a plant undergoing decommissioning is less than that at an operating reactor site. However, this does not imply a degraded level of regulatory oversight or an increased potential for the spread of contamination. Because of the reduced risk during the decommissioning process, NRC inspectors do not maintain a continual on site presence. Rather than stationing a resident inspector at the site during the entire decommissioning process, the NRC will provide subject-matter experts to cover specific activities occurring at the site. For example, if the licensee is planning to remove a large component, the NRC may determine that it is appropriate to station an expert in radiation protection, an expert in heavy lifting and polar cranes, and an expert in packaging radioactive waste at the facility. Inspections are performed by the NRC headquarters staff and NRC regional personnel. This requires attention to scheduling so that NRC personnel are available to review the licensee's procedures and to inspect before and during specific activities. The extent of onsite presence at the facility will depend on the planned activities. During active decommissioning, NRC personnel may be at the facility 2 or 3 weeks of the month. During storage operations, they would be present several times a year. The inspection process during decommissioning is not within the scope of the GEIS.*

## **8. Intact Vessel removal**

Two commenters indicated that intact removal of the reactor vessel should be considered in the GEIS supplement. One of the commenters actively advocated this alternative because of reduced worker dose, costs, and excellent isolation of the waste packages.

*Response: The GEIS will consider specific decommissioning activities including intact removal of the reactor vessel. This comment is within the scope of the GEIS.*

## **9. Spent Fuel**

Three commenters (in four comments) inquired or recommended that spent fuel storage be considered in the GEIS, including comparisons of various options and activities, environmental impacts, and consideration of dose to the workers and the public.

*Response: The storage of spent fuel in the pool during the decommissioning process is addressed by the Commission in 10 CFR 51.23. Section 51.23 states that "The Commission has made*

*a generic determination that, if necessary, spent fuel generated in any reactor can be stored safely and without significant environmental impacts for at least 30 years beyond the licensed life for operation (which may include the term of a revised or renewed license) of that reactor at its spent fuel storage basin or at either onsite or offsite independent spent fuel storage installations. Further, the Commission believes there is reasonable assurance that at least one mined geologic repository will be available within the first quarter of the twenty-first century, and sufficient repository capacity will be available within 30 years beyond the licensed life for operation of any reactor to dispose of the commercial high-level waste and spent fuel originating in such reactor and generated up to that time.”*

*Title 10 CFR Part 60 contains rules governing the licensing to receive and possess source, special nuclear, and by-product material at a geological repository operations area that is sited, constructed, or operated in accordance with the Nuclear Waste Policy Act. These comments are not within the scope of the GEIS.*

Two commenters recommended that additional shielding be added around the ISFSIs and spent fuel pools. In a second comment the same commenter recommended that ISFSIs be covered with a concrete dome with necessary internal filtration and cooling systems.

*Response: The spent fuel pool was designed and the design fully evaluated before the plant received its operating license. The evaluation was used to determine that the design of the spent fuel pool would provide adequate protection to assure public health and safety. In addition, the license provides criteria limiting the amount of fuel that can be stored in the pool. The license requirements including the regulations relating to the design of the ISFSI are separate from those for decommissioning as discussed previously. These comments are not within the scope of the GEIS.*

One commenter recommended a cooling system to be used for the spent fuel pool and/or the casks.

*Response: The spent fuel pool was designed and the design was fully evaluated before the plant received its operating license. The evaluation was used to determine that the design of the spent fuel pool would provide adequate protection to assure public health and safety. The license requirements including the regulations relating to the design of the ISFSI are separate from those for decommissioning as discussed previously. This comment is not within the scope of the GEIS.*

One commenter recommended the storage of a million gallons of water to cool the fuel in case of water shortages.

*Response: The spent fuel pool is designed with “defense in depth” so that at every facility there are several options for the addition of water to the spent fuel pool or for maintaining the temperature of the fuel at levels low enough to not cause the pool to boil dry. The design of alternative cooling methods for the fuel is not within the scope of the GEIS.*

One commenter recommended the on-site, aboveground entombment of the spent fuel with the potential for monitoring and replacement.

*Response: The on-site, above ground entombment of spent fuel with the potential for monitoring and replacement is essentially the same concept as placing the fuel in concrete storage casks in an ISFSI. The storage of the fuel in an ISFSI is not within the scope of the GEIS.*

One commenter at two different times expressed concern about the process used to license an ISFSI. Another commenter stated that the on-site storage system continues to suffer problems related to Quality Control (QC) and Quality Assurance (QA).

*Response: The licensing process for an ISFSI is separate from that of an operating or decommissioning reactor. Regulations for the licensing and operation of an ISFSI including quality assurance and quality control requirements can be found in 10 CFR Part 72 of the Code of Federal Regulations. The process used to license an ISFSI is not within the scope of the GEIS.*

One commenter insisted that the NRC not license the use of plutonium fuel.

*Response: Plutonium fuel is not used in decommissioning facilities. This is an issue for operating facilities. The licensing or use of plutonium fuel in an operating reactor is not within the scope of the GEIS.*

One commenter indicated that the delay in the schedule for removal of spent fuel should be reflected in the GEIS as far as the decommissioning schedule, costs and doses.

*Response: The GEIS will address the impacts resulting from the variation in the timing of activities such as the removal of the spent fuel from the pool. This comment is within the scope of the GEIS.*

## **10. Waste Disposal**

Five commenters (in eight comments) thought that the impacts occurring during waste management and storage activities (such as recycling etc.) should be considered in the GEIS.

*Response: Impacts related to the management of waste onsite and the volume of waste that will require offsite disposal will be considered in the GEIS as specified in 10 CFR Part 51. The environmental impacts from low-level waste sites are specified in the environmental report that must be prepared for the licensing of the specific low-level waste site as required by 10 CFR 61.10. The environmental report is reviewed by the NRC and results in either an environmental assessment or an environmental impact statement as appropriate. A Final GEIS for 10 CFR Part 61 was published in 1982 as NUREG-0945. There is currently no rule related to recycling of material.*

*The current standard for release of material for recycling or re-use of waste from nuclear power plants is that detectable levels of radioactivity may not be present using the appropriate radiation detection equipment. The staff has determined that the impacts of waste management offsite or from recycling are not within the scope of the GEIS.*

One commenter inquired as to whether states with low-level waste sites have authority over the sites, or if NRC and DOE have most of the authority.

*Response: There are currently three active, licensed disposal facilities. All three sites (Barnwell in South Carolina, Hanford in Washington State, and Clive in Utah) are located in Agreement States and are regulated by the States. The concept of Agreement States was set up by the Atomic Energy Act, and it permits NRC to delegate to states (on a state-by-state basis), certain authority to regulate specific areas, such as the disposal of low-level radioactive waste. As discussed in the previous response, the regulation of low-level waste sites is not within the scope of the GEIS.*

One commenter did not want any waste transported to burial sites until environmental and health issues were adequately considered.

*Response: Environmental impacts from low-level waste sites are specified in the environmental report that must be prepared for the licensing of the low-level waste site as required by 10 CFR 61.10. A Final GEIS for 10 CFR Part 61 was published in 1982 as NUREG-0945. The environmental report is reviewed by the NRC and results in either an environmental assessment or an environmental impact statement, as appropriate. Environmental and health issues related to the burial of the waste are addressed in either the environmental assessment or the environmental impact statement. The regulation of low-level waste sites is not within the scope of the GEIS.*

One commenter was concerned about the safety issues related to the storage of radioactive waste.

*Response: 10 CFR Part 61 contains the regulations related to the storage of low-level radioactive wastes. Specific information that must accompany the license application includes a description of the radiation safety program for control and monitoring of radioactive effluents to ensure compliance with the performance objectives and to control occupational radiation exposure and contamination. Both routine operations and accidents must be addressed. This site-specific analysis is reviewed by the NRC before a license is granted. The regulation of low-level waste sites is not within the scope of the GEIS.*

One commenter was concerned that military waste was going to Envirocare and Barnwell and being buried in a shallow land burial form.

*Response: The GEIS applies to commercial power reactors. It does not apply to military applications. The regulation and disposal of military waste are not within the scope of the GEIS.*

Two commenters (in three comments) recommended that low-level waste not be allowed into either shallow landfill burial sites, or commercial burial sites or any offsite dump. One commenter suggested that it be kept onsite and above ground.

*Response: The license that is granted to the utilities for siting, construction and operation of commercial nuclear power reactors does not include a license for long term storage of low-level radioactive waste. As a result, NRC regulations preclude the licensee from using the reactor site as a low-level waste storage facility. The regulation of low-level waste sites is not within the scope of the GEIS.*

## **11. Waste Transport**

One commenter asked what kind of transportation activities will be covered in the GEIS.

*Response: The GEIS will consider impacts associated with the transportation of waste from the facility and transportation of equipment into the facility. This comment is within the scope of the GEIS.*

## **12. Offsite cleanup**

Three commenters indicated that offsite cleanup should be addressed in the GEIS supplement. A fourth commenter thought there should be a method established to locate and collect contaminated items that may have been taken offsite by workers.

*Response: Radioactive contamination resulting from inadvertent releases from a licensed facility is handled on a site-specific basis. Offsite cleanup is not considered within the scope of the GEIS.*

**13. Site Characterization and Final Site Surveys**

One commenter indicated the GEIS should include the final site survey process.

*Response: The activity of implementing the final site survey is one of the activities that will be considered within the scope of the GEIS. However, the radiological impact following license termination (the “results” of the final site survey) was addressed in the GEIS for license termination (NUREG-1496) and will not be included in the scope of this GEIS.*

One commenter stressed that the NRC needs to confirm that the sites are not really contaminated before they are released for public use.

*Response: The confirmation process used for license termination was the subject of a previous GEIS (NUREG-1496) and is not within the scope of the GEIS.*

**14. License Termination Plan - timing of submittal**

One commenter expressed concern that the license termination plans could be submitted ahead of time because it would make it difficult to know the answers to some of the questions and make sure that everything is in the proper perspective.

*Response: Regulations in 10 CFR 50.82(a)((9)(i) state that the license termination plan must be submitted at least 2 years before termination of the license. If there are changes to the process the licensee will need to revise the license termination plan accordingly. The timing of the submittal of the license termination plan is not within the scope of the GEIS.*

**15 License Termination Plan - Contents**

One commenter questioned whether the license termination plan really includes a complete site characterization.

*Response: Regulatory Guide 1.179, “Standard Format and Content of the License Termination Plans for Nuclear Power Reactors” provides guidance on the information necessary to support site characterization. It states that the site characterization can be submitted separately at any time prior to submittal of the LTP and be referenced by the LTP. It can also be submitted as an integral part of the LTP. The site characterization should be sufficiently detailed to “allow NRC to determine the extent and range of radiological contamination of structures, systems, rubble, paved parking lots, ground water and surface water, components, residues and the environment, including the maximum and average contamination levels and ambient exposure*

*rate measurements of all relevant areas of the site.” The contents of the license termination plan are not within the scope of the GEIS.*

One commenter suggested the NRC discuss in the GEIS the process or type of document to be used during the decontamination surveys.

*Response: Regulatory Guide 1.179 specifies that NUREG-1575, “Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM), provides guidance on developing a site characterization program. The details of the surveys for license termination are not within the scope of the GEIS.*

## **16. License Termination Criteria**

Two commenters expressed concern over unrestricted release and allowing doses up as high as 500 millirem a year.

*Response: A discussion of the radiological criteria for license termination and the resulting environmental impacts are specified in 10 CFR Part 20, Subpart E and NUREG-1496, “Generic Environmental Impact Statement in Support of Rulemaking on Radiological Criteria for License Termination of NRC-Licensed Facilities.” Published in July 1997. This issue is not within the scope of the GEIS.*

One commenter did not like the concept of ALARA (as low as reasonably achievable) in the license termination criteria because of the perception that it allowed the licensees to pollute.

*Response: A discussion of the radiological criteria for license termination and the resulting environmental impacts are specified in 10 CFR Part 20, Subpart E and NUREG-1496, “Generic Environmental Impact Statement in Support of Rulemaking on Radiological Criteria for License Termination of NRC-Licensed Facilities.” Published in July 1997. This issue is not within scope of the GEIS.*

Two commenters expressed concern that environmental factors would disturb the location where materials had been buried (such as from rubblelization).

*Response: The GEIS (NUREG-1496), that was written in support of rulemaking on radiological criteria for license termination, considered a range of soil contamination levels, volumes, and depth profiles. The radiological criteria specified in 10 CFR Part 20, Subpart E are based on the analysis in the GEIS for license termination (NUREG-1496). This issue is not within the scope of the GEIS.*



Five commenters (in six comments) requested that the NRC and EPA resolve their conflict over the license termination criteria. A fourth commenter simply stated that there is a contention that exists. One commenter recommended that the GEIS update be discontinued until an agreement was made. Another commenter stated their agreement with the EPA standard, but preferred that no contamination be left behind.

*Response: The criteria for license termination are specified in 10 CFR Part 20, Subpart E. The differences between agencies related to these criteria are not within the scope of the GEIS.*

Three commenters questioned the description of the average member of the critical population that was used by the models for license termination criteria. One additional commenter recommended using the dose that would be allowed by a physician for a child under 6 years of age.

*Response: The regulations in 10 CFR 20.1402 specify that the site will be considered acceptable for unrestricted use if the residual radioactivity that is distinguishable from background radiation results in a total effective dose equivalent (TEDE) to an average member of the critical group that does not exceed 25 mrem per year. The radiological criteria specified in 10 CFR Part 20, Subpart E are based on the analysis in the GEIS for license termination (NUREG-1496). A re-evaluation of this regulation is not within the scope of the GEIS.*

One commenter thought that MARSSIM was not appropriate for contamination below 6 inches.

*Response: MARSSIM (Multi-Agency Radiation Survey and Site Investigation Manual), NUREG-1575, provides information on planning, conducting, evaluating and documenting decontaminating building surface and soil final status radiological surveys for demonstrating compliance with dose or risk-based regulations or standards. MARSSIM is a multiagency compliance document (Department of Defense, Department of Energy, Environmental Protection Agency, and NRC). Re-evaluation of MARSSIM is not within the scope of the GEIS.*

One commenter thought the standards for license termination should be adjusted to account for cumulative exposures of radiation and exposure to chemical toxins that act synergistically with radiation.

*Response: The radiological criterion for license termination was determined in NUREG-1496 (GEIS in support of rulemaking on radiological criteria for license termination) and is not within the scope of this GEIS.*

One commenter indicated that it is not possible to decommission and that the radiation will always be there.

*Response: The commenter is correct. Radiation occurs naturally in the environment and it is impossible to remove every atom of radiation during the decommissioning process. For this reason, criteria was developed to provide a basis for determining at what point the license could be terminated on a site that is being decommissioned. The criteria are discussed in the GEIS in support of rulemaking on radiological criteria for license termination (NUREG-1496) and are outside the scope of this GEIS.*

## **17. Life after license termination**

One commenter asked about who would oversee the site after the termination of the license is completed.

*Response: Once the license is terminated the NRC has no more jurisdiction over the site or the activities that occur on the site. For this reason the activities following license termination are not within the scope of the GEIS.*

One commenter asked if the states would be able to demand further cleanup after the site has been decommissioned.

*Response: It is possible that a State could demand further cleanup of the site after the site has been decommissioned. Once the license is terminated the NRC has no more jurisdiction over the site or the activities that occur on the site. For this reason the activities following license termination are not within the scope of the GEIS.*

Two commenters inquired about the possibility of maintaining insurance during the period following license termination to handle glitches or health problems.

*Response: Once the license is terminated the NRC has no more jurisdiction over the site or the activities that occur on the site. For this reason the activities following license termination, including the maintenance of liability insurance are not within the scope of the GEIS.*

One commenter asked if the NRC would be willing to build their buildings on top of decommissioned sites.

*Response: NUREG-1496 evaluated the impact to people working in site buildings after decommissioning and license termination and therefore subject to radiation exposure principally caused by residual radioactivity on building surfaces. If the license is terminated for unrestricted release, then there is a possibility of locating office buildings at the site. Once the license is terminated the NRC has no more jurisdiction over the site or the activities that occur on the site. For this reason the activities following license termination are not within the scope of the GEIS.*

One commenter (in four different comments) inquired about the selection, recertification and regulation of an independent third party for custodial care. The commenter also asked for examples of candidates for custodial oversight and incentives for such third parties.

*Response: The discussion related to an independent third party was part of the License Termination Criteria rulemaking effort and is outside the scope of the GEIS on Decommissioning.*

One commenter inquired regarding the impediments to a third party from abandoning the restricted release site.

*Response: The provisions that must be made before restricted release is allowed include provisions for legally enforceable institutional controls. This means that there are option(s) for legal enforcement of the arrangement. Once the license is terminated the NRC has no more jurisdiction over the site or the activities that occur on the site. For this reason the activities following license termination are not within the scope of the GEIS.*

One commenter inquired if the EPA had signed a Memorandum of Understanding (MOU) with the NRC thus accepting the oversight and regulation of facilities with restricted release.

*Response: A Memorandum of Understanding between the EPA and the NRC regarding oversight and regulation of facilities with restricted release has not been signed. A MOU regarding restricted site release is not within the scope of this GEIS.*

One commenter stated that provisions for environmental staff and maintenance staff should be established in perpetuity and all costs should be handled by the parent company of the licensee. A second commenter specified that licensees should provide \$100 million in advance to guarantee perpetual oversight by the NRC and to cover environmental monitoring, repairs, cleanups and onsite staff.

*Response: One of the criteria for restricted release conditions is that the licensee has provided sufficient financial assurance to enable an independent third party, including a governmental custodian of the site, to assume and carry out responsibilities for any necessary control and maintenance of the site. Once the license is terminated the NRC has no more jurisdiction over the site or the activities that occur on the site. For this reason the activities following license termination are not within the scope of the GEIS.*

Two commenters (in five different comments) recommended that the land never be allowed to revert to public or private use after license termination. Another commenter recommended that the NRC retain oversight of the land "in perpetuity," and another recommended the creation of exclusion zones past the site boundary that would be fenced.

*Response: The purpose of decommissioning is to remove the radiological hazard so that the property can be reused. If the license is terminated for unrestricted release there are no restrictions related to the use of the site. Therefore, the property could be used for public or private use. Once the license is terminated the NRC has no more jurisdiction over the site or the activities that occur on the site. For this reason the activities following license termination are not within the scope of the GEIS.*

One commenter recommended a detailed descriptive history of the facility be written for use following decommissioning. A second commenter recommended that this document be read before planning any remedial action, site assessment etc.

*Response: The licensee is required to maintain records of information that are important to the safe and effective decommissioning of a facility under 10 CFR 50.75(g) in an identified location until the license is terminated. These records represent a descriptive radiological history of the facility. This history includes records of spills or other unusual occurrences involving the spread of contamination in and around the facility, equipment or site. It also includes drawings and modifications of structures and equipment in restricted areas where radioactive materials are used and/or stored. This comment is outside the scope of the GEIS.*

One commenter provided a description of a "perpetual staff" to continue oversight of the decommissioned facility.

*Response: Regulations in 10 CFR Part 20, Subpart E describe an appropriate independent third party for control and maintenance of the site after the termination of the license for restricted release. A discussion of the independent third party is included as part of the rulemaking for this regulation. No control or maintenance function is required for unrestricted release. Once the license is terminated (for either restricted or unrestricted release) the NRC has no more jurisdiction over the site or the activities that occur on the site. For this reason the activities following license termination are not within the scope of the GEIS.*

## **18. Reuse of Material**

Three commenters were concerned about the reuse of material, specifically the metal from the reactor vessel. Two commenters stated there should be no recycling or re-use of radioactive materials. One of the commenters included dumping in landfills to the list of prohibitions.

*Response: The current standard for release of material for recycling or re-use of waste from nuclear power plants is that detectable levels of radioactivity may not be present using the*

*appropriate radiation detection equipment. However, 10 CFR 20.2002, allows licensees to... “apply to the Commission for approval of proposed procedures, not otherwise authorized in the regulations in this chapter, to dispose of licensed material generated in the licensee’s activities.” This includes a public landfill. The impacts of waste management offsite or from recycling are site specific and are not within the scope of the GEIS.*

## **19. Transfer of Ownership**

One commenter was concerned about the transfer of ownership of the decommissioning nuclear power plants between companies and whether the companies are buying the plants in order to collect the decommissioning funds by undercutting the proper decommissioning process.

*Response: The transfer of ownership of licenses for commercial nuclear power plants is codified in 10 CFR 50.80 and is not considered to be within the scope of the GEIS.*

Two commenters recommended that site-specific history should be included in the transfer of information between owners.

*Response: The transfer of ownership of licenses for commercial nuclear power plants is codified in 10 CFR 50.80 and is not considered to be within the scope of the GEIS.*

## **20. Financial Assurance**

Two commenters inquired how financial assurance is defined and evaluated. One of the commenters was especially concerned about plants that are sold to other companies for decommissioning, and another recommended that the more conservative (more expensive) level of financial assurance be used.

*Response: The requirements for indicating to NRC how a licensee will provide reasonable assurance that funds will be available for the decommissioning process are provided in 10 CFR 50.75. Funding for the decommissioning of power reactors may also be subject to Federal or State Government agencies that have jurisdiction over rate regulations. Financial assurance is not within the scope of the GEIS.*

## **21. License Extensions**

One commenter recommended that the NRC not extend the license of commercial nuclear power plants.

*Response: Regulations related to license renewals are provided in 10 CFR Part 54. The environmental aspects of license renewal were considered in the GEIS for License Renewal of Nuclear*

*Plants, NUREG-1437. License extension or renewal of operating nuclear power plant licences is not within the scope of the GEIS.*

## **22. Safety of Decommissioning**

Two commenters disagreed with the assumption that technology for decommissioning nuclear facilities is well understood and that decommissioning can be performed safely and at reasonable cost.

*Response: The industry has considerable experience in decommissioning nuclear facilities and has demonstrated that it can be performed April 11, 2001 safely and at reasonable costs. The current regulations adequately address the issue of radiological safety and the staff assumes that the licensee will comply with the regulations. The licensee is required by the regulations to conduct separate safety reviews for decommissioning. Therefore, the issue of whether decommissioning can be performed safely is outside the scope of the GEIS.*

One commenter requested information on the successes and failures in the decommissionings that have occurred to date.

*Response: The environmental impacts in the GEIS will be based on past decommissioning experience. However, development of a report providing the successes and failures of safety significant issues during decommissioning activities is not within the scope of the GEIS.*

Five commenters stressed the importance of safety during decommissioning. One commenter asked the NRC to uphold its mission to protect safety. The other stated that the goal should be to eliminate risk in activities to the extent possible. Two commenters were concerned that the provisions in the GEIS would not be adequate to protect workers and public health and safety. One commenter thought that in order to have appropriately fulfilled their mission the NRC should have shutdown every licensee that same day the agency was created.

*Response: NRC regulations require licensees to perform safety reviews for decommissioning activities. The GEIS will address the environmental impacts from these decommissioning activities. These comments are not within the scope of the GEIS.*

Two commenters recommended that emergency planning be continued as long as fuel was onsite because of the risk to the public.

*Response: In a separate effort, the staff is currently reviewing the risk associated with spent fuel storage on site. The results of that study will determine the level of emergency planning necessary for maintaining public health and safety. Analyses of the regulations*

*in 10 CFR 50.54 related to emergency planning are not within the scope of the GEIS.*

One commenter recommended reviewing all docketed information related to the operation of the facility prior to decommissioning in order to ensure that concerns and problems have been accounted for during the planning process.

*Response: The background information pertinent to decommissioning is being reviewed in preparation of the update of the GEIS. Although the specific history of a given plant is considered by the licensee and the NRC during decommissioning planning and review, there is no requirement to systematically review all docketed information. The licensee, however, is required to review all relevant plant records during the site characterization phase of decommissioning. A requirement to review all docketed information is not within the scope of the GEIS.*

## **6. Impacts that should be included or considered in the GEIS supplement**

### **A. Ecological Impacts**

Three commenters (in four different comments) indicated that decommissioning has environmental impacts and that the GEIS should include an analysis of the environment and not just an analysis of impacts on humans.

*Response: The environmental impacts of decommissioning will be addressed in the GEIS. These comments are within the scope of the GEIS.*

One commenter recommended that the GEIS assess the degree to which the environmental parameters of the site may have changed during the operation of the facility.

*Response: The GEIS may include a consideration of the degree to which environmental parameters of the site may have changed during operation. This comment is within the scope of the GEIS.*

One commenter recommended that the GEIS take into account the relevant environmental characteristics of the site and the impacts from the use of the decommissioning techniques.

*Response: Relevant characteristics of the commercial nuclear power facility sites will be considered in the development of the GEIS. The impacts from the use of decommissioning techniques will also be considered. This comment is within the scope of the GEIS.*

One commenter recommended that land use, water use, air quality and animal and human life be included in the GEIS as environmental impacts.

*Response: Ecological impacts such as land use, water use, air quality and the impact on animals and humans will be considered in the GEIS. This comment is within the scope of the GEIS.*

Two commenters recommended a mesh screen to prevent birds from landing and nesting on the site. Another recommended sterilizing the wildlife and containing them to allow them to die naturally in order to keep them from passing on genetic material.

*Response: The impacts of the decommissioning process on the terrestrial environment will be considered in the GEIS. Mitigative actions will be considered if necessary. This comment is within the scope of the GEIS.*

## **B. Groundwater**

Three commenters expressed concern about contamination in ground or surface water. Commenters indicated that studies should be conducted related to leaking pipes or plumes of contamination in the groundwater. One of the commenter specified that protocols should be in place that would be adhered to, particularly for underwater drilling. A third commenter thought that appropriate methodologies should be included to determine groundwater contamination before decommissioning occurs.

*Response: The impact of potentially contaminated groundwater will be considered in the GEIS. These comments are within the scope of the GEIS.*

One commenter cautioned that impacts to groundwater specifically from rubblization should not be underestimated.

*Response: The radiological impacts of rubblization for the period beyond the license termination must meet the requirements in 10 CFR Part 20, Subpart E, before the license will be terminated. Impacts to groundwater during the decommissioning period and nonradiological impacts following the termination of the license will be generically addressed in the GEIS.*

Two commenters recommended that wells be monitored within five miles of the facility and that specific actions be taken if contamination is found.

*Response: Monitoring of effluents during decommissioning will be addressed in the GEIS. This comment is within the scope of the GEIS.*

One commenter recommended that safe, alternative water supplies should be provided to affected residents and businesses if their water is contaminated.

*Response: Licensees are required by regulation to limit gaseous and liquid effluents released as well as monitoring to ensure regulations are being met. Groundwater monitoring is performed to ensure that radioactive materials are not released in quantities that would exceed EPA limits for safe drinking water. These regulations are in effect until the license is terminated. This comment is not within the scope of the GEIS.*



One commenter indicated that all plumes must be traced, blocked, pumped and filtered. Another commenter recommended pumping groundwater through resin beds, sand filters and charcoal filters.

*Response: An evaluation of the impact of potentially contaminated water will be considered in the GEIS. Mitigative measures will be discussed, as appropriate. This comment is within the scope of the GEIS.*

#### **C. Surface water**

Two commenters indicated that sediment up to a mile downstream from the discharge “valves” should be removed and treated as hazardous waste.

*Response: The staff is uncertain as to the meaning of “discharge valve” but is responding to this question assuming the commenters meant the discharge structure. An evaluation of the impact of potentially contaminated sediment and its removal during the decommissioning process will be considered within the GEIS. Mitigative measures will be discussed as appropriate. This comment is within the scope of the GEIS.*

One commenter recommended routing site runoff to covered detention ponds equipped with filters etc.

*Response: An evaluation of the impacts to surface water will be considered in the GEIS. Mitigative measures will be discussed as appropriate. This comment is within the scope of the GEIS.*

#### **D. Radiological Concerns**

One commenter recommended that radiological issues be given particular attention and that specific analyses should be made related to topics such as the environmental impact of residual subsurface radioactivity (which is not otherwise covered in regulatory guidance).

*Response: Radiological issues during the decommissioning period will be addressed in the GEIS. Radiological issues following the license termination process are codified in 10 CFR Part 20, Subpart E and were evaluated in the GEIS in support of the rulemaking on radiological criteria for license termination (NUREG-1496) and, as a result, are outside the scope of the GEIS.*

One commenter requested that NRC include a definition of background radiation in the SEIS. It should be clear whether the background was measured before or after 1945.

*Response: The GEIS will use the NRC's definition of background radiation as given in 10 CFR 20.1003 as the basis for any discussion of radiological impacts. The background for a particular site would correspond to the background radiation levels determined at the time that the Final Environmental Impact Statement for the facility was issued. This comment is within the scope of the GEIS.*

One commenter thought the GEIS should look beyond the reactor site boundary for areas of radiological remediation.

*Response: Routine airborne and liquid releases that were released within the guidelines of the offsite release regulations are not considered to require radiological remediation. Radioactive waste that has been disposed of at an offsite location is handled under the license for a different facility (such as a low-level waste site). Unplanned or inadvertent releases are the result of an accident, which is handled on a site-specific basis. The GEIS will not address radiological remediation beyond the reactor site boundary. This comment is outside the scope of the GEIS.*

## **E. Occupational Dose Impacts**

One commenter indicated that the dose estimates for decommissioning activities should be revised and that an envelope should be used to account for attempts to use certain techniques that may not be the best way to solve the problem.

*Response: The GEIS will address the occupational dose estimates for decommissioning. This comment is within the scope of the GEIS.*

One commenter recommended that a good look be taken at the radiation exposure projections and that the projected exposure should be a good challenge for the industry.

*Response: The GEIS will address the occupational dose estimates for decommissioning. This comment is within the scope of the GEIS.*

Three commenters indicated that the dose from shipping material to another location to be processed needs to be included by the licensee as dose accumulated during decommissioning activities. Another commenter indicated that the dose from activities such as smelting and recycling also should be considered.

*Response: The dose to the driver and to the public from transportation of waste will be considered in the GEIS. The occupational radiation dose received at NRC-licensed facilities other than the decommissioning facility will be addressed in facility specific EA or EIS or generic environmental assessments and is not within the scope of the GEIS. Material that is located on the site can only be released using a no- detectable standard using the appropriate radiation detection instrumentation. As a result, the impacts of waste management offsite or from recycling or reuse are not within the scope of the GEIS.*

One commenter recommended that a comparison be made of the dose estimates if the facility is decommissioned initially or if decommissioning does not start for two years.

*Response: The timing of activities and its impact on the anticipated radiological dose for a decommissioning facility will be considered in the GEIS. This comment is within the scope of the GEIS.*

One commenter indicated that an analysis should be made of the exposure received by people during decommissioning versus the hypothetical risk to someone 10,000 years from now for specific activities, such as cutting components within the reactor.

*Response: The risk from activities occurring during the decommissioning period is analyzed for the period of time during which the activity is conducted. By regulation decommissioning is required to be completed within 60 years. At least two years before decommissioning is completed, the license termination process is initiated. The radiological criteria for license termination are given in 10 CFR Part 20, Subpart E. These criteria were based on the GEIS in Support of Rulemaking on Radiological Criteria for License Termination of NRC-Licensed Nuclear Facilities (NUREG-1496). 20 CFR 20.1401(d) specifies that the calculation of the total effective dose equivalent to the average member of the critical group should consider the peak annual dose expected within the first 1000 years after decommissioning. This calculation is performed based on the residual radioactivity that remains at the time that decommissioning has been completed. The radiological criteria for license termination and the corresponding calculations are outside of the scope of the GEIS.*

One commenter encouraged caution in making comparative risks between processes. The commenter recommended that all the aspects of different processes be considered and that the comparisons would be compatible.

*Response: The comment is noted. This comment is within the scope of the GEIS.*

One commenter thought the dose to workers in the metal recycling industry should also be considered under decommissioning.

*Response: The impacts of waste management offsite or from recycling or reuse are not within the scope of the GEIS.*

One commenter thought the scientific studies that have been performed since 1988 that show that radiation is more harmful to human health should also be included.

*Response: The GEIS will include a determination of the impacts on human health from the potential radiological dose. The discussion will be based on current scientific guidelines. This comment is within the scope of the GEIS.*

One commenter indicated that the total dose should be a very high priority.

*Response: The GEIS will include an analysis of the dose impacts of decommissioning. This comment is within the scope of the GEIS.*

One commenter suggested that exposure levels for workers are monitored every day and tallied every week or so and tracked against the limits given in the GEIS. A second commenter indicated that worker doses during decommissioning have

been repeatedly underestimated because decommissioning is an experiment and there is a lack of experience and enforcement by the NRC. A third commenter specifically identified Connecticut Yankee and underestimated worker dose assessments and predictions.

*Response: The GEIS will include an analysis of the radiation dose to worker impacts due to decommissioning. This comment is within the scope of the GEIS.*

One commenter stated that “Hanford studies” indicate that a dose of 5 millirem is producing significant increases in cancers. The commenter stated that considering this and the synergistic effects of other toxins in the area a site specific analysis is most appropriate.

*Response: The GEIS will include a determination of the impacts on human health from the potential radiological dose associated with decommissioning. The basis for the analysis will be guidelines and data published from the National Council on Radiation Protection and Measurements (NCRP). However, the synergistic effects of other toxins will not be considered. This comment is not within the scope of the GEIS.*

One commenter recommended that the GEIS include estimates for worker inhalation of materials of high specific activity that have been vaporized and particulated by a particular decommissioning operation.

*Response: The GEIS will include an analysis of the impact of radiation dose to workers during decommissioning. This comment is within the scope of the GEIS.*

## **F. Public Dose Impacts**

One commenter thought the NRC did not deal with incidental contamination that affected a community, but rather focused on contamination from processes. The implication was that an analysis of incident contamination and its effect on the community should be included in the GEIS. Three other commenters specified the inadvertent release of hot particles and the routine decommissioning releases as jeopardizing health and safety of the public. One other commenter (in two comments) thought the health and safety problems needed to be taken more seriously.

*Response: The incidental contamination and inadvertent release of hot particles are unplanned releases and are handled on a site-specific basis and are not within the scope of the GEIS. An analysis of the routine decommissioning releases on the health and safety of the public will be considered in the GEIS and are within the scope of the GEIS.*

One commenter thought the dose to the public from shipment of material to other locations should be included in the consideration of dose from decommissioning a facility.

*Response: The dose to the public during transportation of radioactive material to disposal facilities will be considered in the GEIS. This comment is within the scope of the GEIS.*

One commenter requested that the GEIS contain information about what would trigger offsite cleanup either during decommissioning or in the future.

*Response: Radioactive contamination that is located offsite is either regulated under the license for a different facility (such as a low-level waste site), is material that was released by the facility during normal operation or is offsite as a result of an inadvertent or accidental release, which is handled on a site-specific basis. Offsite cleanup is not considered within the scope of the GEIS.*

One commenter indicated that the priority of the whole process was not the decommissioning of the sites, but rather the protection of public health and the environment.

*Response: The NRC's mission includes the protection of public health, and safety, the common defense and security and the protection of the environment. The NRC's mission influences the entire decommissioning process. This comment is within the scope of the GEIS.*

One commenter expressed concern over the issue of hot particles and their impact on the community.

*Response: The inadvertent or accidental release of hot particles is handled on a site-specific basis. Analysis of contamination that is removed from the site into the public realm is considered to be an accident and would be treated as such in the GEIS. This comment is within the scope of the GEIS.*

One commenter insisted that decommissioning not add exposure to the public. Therefore decommissioning must return the plant site to the original background radiation level or must be monitored.

*Response: The radiological dose limits for the facility at the time of license termination are governed by the License Termination Rule as codified in 10 CFR Part 20, Subpart E and are not within the scope of the GEIS.*

One commenter stated that NRC should not recalibrate and redefine background radiation levels so that it includes regular plant operations, accidents and weapons testing.

*Response: The GEIS will use the NRC's definition of background radiation as given in 10 CFR 20.1003 as a basis for any discussion of radiological impacts. This comment is within the scope of the GEIS.*

One commenter indicated that exclusion zones were needed around the site to prevent the public from entering the site. This zone should be maintained in perpetuity.

*Response: Public access during decommissioning or during the period following the termination of the license are not within the scope of the GEIS. Public access during decommissioning is restricted as during operation. Public access following license termination would be dependent on whether the license was terminated for unrestricted release or restricted release (defined below). Unrestricted use means that there are no restrictions on how the site may be used. The licensee is free to continue to dismantle any remaining buildings or structures and to use the land or sell the land for any type of application. Restricted use means that the licensee has demonstrated that further reductions in residual radioactivity would result in net public or environmental harm, or residual levels are as low as is reasonably achievable. The licensee makes provisions for legally enforceable institutional controls (for example, restrictions placed in the deed for the property describing what the land can and cannot be used for), which provide reasonable assurance that the radiological criteria, set by the NRC, will not be exceeded. In addition, the licensee must have provided sufficient financial assurance to an amenable independent third party to assume and carry out decommissioning by restricted use.*

#### **G. Transportation Dose Impacts**

One commenter indicated that transportation doses should be considered and any site-specific issues. One commenter indicated that the changes in the transportation dose since 1988 (in the programs and methodologies that are used) warrant a revision in this area in the GEIS.

*Response: The transportation dose to the public and workers from the transport of wastes are within the scope of the GEIS.*

#### **H. Non-Radiological Impacts**

One commenter encouraged the incorporation of non-radiological contaminants into the GEIS. Four commenters expressed concern over nonradiological impacts of decommissioning. Two of the commenters specifically mentioned nonradiological impacts such as PCBs, heavy metals, and concrete. Another commenter inquired where the information would be obtained that related to nonradiological issues. A second commenter asked if nonradiological issues would be addressed in the license termination plan. (It was uncertain if the commenter thought this would also apply to the GEIS)

*Response: Non-radiological chemical hazards are regulated by the provisions of the Resource Conservation and Recovery Act (RCRA). Most states have received authority from the Environmental Protection Agency (EPA) to regulate and enforce RCRA. EPA controls hazardous waste storage, treatment and disposal in those states that do not have this authority. Mixed waste (hazardous waste that contains radioactive*

*material) is subject to regulation by the NRC under the Atomic Energy Act, as amended, and by EPA under RCRA, as amended. Nonradiological chemical hazards will be addressed in the GEIS as they relate to the radiological decommissioning of the facility. Mixed waste (radiological contamination that is mixed with chemical contamination) are within the scope of the GEIS.*

#### **I. Public Health impacts (nonradiological)**

Two commenters indicated that psychological impacts to the public from decommissioning should be addressed in the GEIS as public health issues.

*Response: The psychological impacts to the public from decommissioning are outside the scope of the GEIS.*

Two commenters discussed the spread of contamination into the community. One of the commenters recommended that the GEIS address health problems in the community as a result of contamination in the community.

*Response: The GEIS will consider health impacts to the community as a result of radiation dose, noise and transportation accidents. This comment is within the scope of the GEIS.*

One commenter recommended that there be a consideration of how to empower the community to live with the legacy of decommissioning. The commenter recommended that additional funding be provided.

*Response: Empowerment of the community is outside the scope of the GEIS. However, the NRC does encourage participation of the public in decommissioning, providing several opportunities for the public to participate in public meetings during the decommissioning process. In addition, many communities have formed citizen's advisory groups composed of members of the public and often chaired by local elected officials.*

#### **J. Socioeconomic impacts**

Two commenters indicated that community impacts are not adequately addressed in the GEIS and need to be looked at more carefully.

*Response: The GEIS will consider socioeconomic impacts. This comment is within the scope of the GEIS.*

#### **K. Cultural Resource Impacts**

One commenter inquired if the facilities are required to adhere to the National Park Service's requirement for Historic American Engineering Records and the Historic Architectural Building requirements.

*Response: Cultural resources will be included in the GEIS. This comment is within the scope of the GEIS*

## **L. Cost Impacts**

One commenter recommended that the GEIS address the economic impacts from deregulation of power.

*Response: Economic impacts from future deregulation of power are not within the scope of the GEIS. Deregulation would not impact the process of decommissioning, although it could impact the timing of the decision to permanently cease power operations. This comment is not within the scope of the GEIS. Additional information on the deregulation of the power industry can be found on the NRC website.*

Two commenters recommended that the NRC take a look at the decommissioning projects or sites in detail to see if cost estimates do or do not match the final results. One of the commenters specifically addressed the variation in cost with time.

*Response: The cost of decommissioning will be included in the GEIS. The variation in the cost estimates based on different start and end times of decommissioning will also be considered. This comment is within the scope of the GEIS.*

Two commenters thought that the storage of spent fuel should be considered as part of the decommissioning costs. One commenter also recommended that the removal of nonradioactive structures should be considered as part of the decommissioning costs.

*Response: The dismantlement of nonradioactive structures is not considered as part of the radiological decommissioning of the site unless it is necessary to remove a structure in order to complete the radiological decommissioning of the facility. However, the removal of structures that were necessary for the production of power are included in this GEIS for the sake of completeness even if the structures are not part of the radiological decommissioning of the site. As a result these activities are within the scope of the GEIS. The management and funding for the storage of spent fuel is required by 10 CFR 50.54 and is regulated separately from the decommissioning costs. This comment is not within the scope of the GEIS.*

One commenter recommended that the GEIS address the funds that are needed for future community issues.

*Response: Funding for community issues is not within the scope of the GEIS.*



One commenter expressed concern over the costs of decommissioning and recommended that the GEIS consider how the utility would raise funds for decommissioning when they are a non-performing asset.

*Response: The regulations for the accrual of funds for decommissioning are given in 10 CFR 50.75. This comment is outside the scope of the GEIS.*

One commenter recommended placing the facility in SAFSTOR as a means to allow more time to gather money for decommissioning and to look at the availability of low-level waste sites.

*Response: The regulations for the accrual of funds for decommissioning are given in 10 CFR 50.75 and are not within the scope of the GEIS. However, the benefits of various decommissioning options will be considered. This comment is within the scope of the GEIS.*

Three commenters had concerns related to what happens with the financial assurance after license termination or expiration. One commenter suggested that the GEIS contain a clause that would prohibit companies from accessing unused decommissioning funds.

*Response: The activities following license termination (including the disposition of funds) are not under the jurisdiction of the NRC and are not within the scope of the GEIS.*

One commenter asked if the cost study would be completely redone and whether the regulations related to adequate funding levels would be revisited. Another commenter indicated that the money required to decommission sites had been underestimated.

*Response: An analysis of the cost of decommissioning will be included in the GEIS. However, the regulations related to adequate funding levels may be revisited by the Commission, but not as a part of the GEIS. This comment is not within the scope of the GEIS.*

Two commenters indicated that the costs of decommissioning should be borne by the licensee in perpetuity and not recouped from the ratepayers or Federal government. These commenters also, in additional comments, specifically indicated that the costs of monitoring, containment and cleanup should not be handled by private or public land owners.

*Response: The source of funding for the decommissioning cost fund is subject to the regulation of Federal or State Government agencies (e.g., Federal Energy Regulatory Commission (FERC) and State Public Utility Commissions) that have jurisdiction over rate regulation. This issue is not within the scope of the GEIS.*

One commenter indicated that the parent company should pay for the NRC inspections, remediation and cleanup costs using a guaranteed bond - including half cash.

*Response: Regulations are provided in 10 CFR 50.75 that establish the requirements for indicating to NRC how a licensee will provide reasonable assurance that funds will be available for the decommissioning process. Financial assurance and the source of funding for decommissioning are not considered to be within the scope of the GEIS.*

One commenter indicated that costs for water treatment should be handled by the licensee.

*Response: Licensees are required by regulation to limit gaseous and liquid effluents released as well as monitoring to ensure regulations are being met. Ground water monitoring is performed to ensure that radioactive materials are not released in quantities that would exceed EPA limits for safe drinking water. These regulations are in effect until the license is terminated. The treatment of the supply of water to residents is not within the scope of the GEIS and the source of funding for such treatment is also not considered to be within the scope of the GEIS.*

One commenter recommended placing funds in escrow to handle the cleanup that would result from a minor cask accident involving a spent fuel assembly.

*Response: Regulations are provided in 10 CFR 50.75 that establish the requirements for indicating to NRC how a licensee will provide reasonable assurance that funds will be available for the decommissioning process. Financial assurance and the source of funding for decommissioning are not within the scope of the GEIS.*

One commenter recommended that half of the interest that is accrued annually by the decommissioning funding account(s) be paid to the State where the facility is located for the purpose of upgrading the State's emergency management of nuclear accidents.

*Response: Regulations are provided in 10 CFR 50.75 that establish the requirements for indicating to NRC how a licensee will provide reasonable assurance that funds will be available for the decommissioning process. These regulations do not specify the payment of interest to the State. The decommissioning funding process is not within the scope of the GEIS.*

One commenter recommended that \$110 million be allocated for the cleanup of a borated water storage tank rupture. Specifications were given on the investment of the funds.

*Response: Regulations are provided in 10 CFR 50.75 that establish the requirements for indicating to NRC how a licensee will provide reasonable assurance that funds will be available for decommissioning. The allocation of this money is not specifically identified but is left to the*

*licensee. The development of regulations for the allocation of the funds is not within the scope of the GEIS.*

One commenter inquired as to the differences between states on issues related to the deregulation of the electric industry.

*Response: The deregulation of the electric industry is not within the scope of the GEIS.*

#### **M. Environmental Justice**

Three commenters suggested that an analysis of decommissioning on environmental justice be considered in the GEIS.

*Response: An analysis of environmental justice will be included in the GEIS. This comment is within the scope of the GEIS.*

#### **N. Impacts of Fuel Storage**

One commenter requested additional meetings for discussing fuel storage (with either NRC or DOE).

*Response: Fuel storage issues are not within the scope of the GEIS. Meetings that NRC holds that are open to the public can be found on the NRC website, at <http://www.nrc.gov/NRC/PUBLIC/meet.html>*

One commenter (in 3 comments) stated that it was unlikely that a spent fuel repository would soon be available and the NRC should take steps such as looking at other disposal options or allowing extended spent fuel storage.

*Response: The development of a spent fuel repository or other options for extended fuel storage are not within the scope of the GEIS. The NRC has stated in its regulations that "The Commission has made a generic determination that, if necessary, spent fuel generated in any reactor can be stored safely and without significant environmental impact for at least 30 years beyond the licensed life for operation (which may include the term of renewed license) of that reactor at its spent fuel storage basin or at either onsite or offsite independent fuel-storage installations." Further, the Commission believes there is reasonable assurance that at least one mined geological repository will be available in the first quarter of the 21st century, and sufficient repository capacity will be available within 30 years beyond the licensed life for operation of any reactor to dispose of the commercial high-level waste and spent fuel originating in such reactor and generated up to that time.*

One commenter inquired as to the status of the fuel stored on the site at the time of license termination.

*Response: The reactor license will not be terminated if fuel remains in the spent fuel pool. However, if the fuel has been transferred to an ISFSI, the 10 CFR Part 50 license for the reactor can be terminated. However, if the*

*Part 50 license is terminated the licensee must secure a Part 72 license for the storage of the spent fuel in the ISFSI. The storage and maintenance of the fuel after it has been transferred to an ISFSI is outside the scope of the GEIS.*

## **O. Cumulative Impacts**

One commenter recommended that the whole picture be looked at with regards to the overall purpose and the environmental effects of the combined decommissioning alternatives.

*Response: Cumulative impacts will be considered and are within the scope of the GEIS.*

One commenter recommended that the GEIS include a description and analysis of cumulative impacts for each waste stream in the community, including transportation routes, NRC and DOE facilities and proposed sites for waste management, storage and disposition.

*Response: Cumulative impacts related to the decommissioning of the site will be considered in the GEIS. Impacts related to transportation of the waste and to irretrievable commitment of land for waste storage are considered in the GEIS. Cumulative impacts from waste management, storage and disposition facilities are not within the scope of the GEIS.*

## **7. Site Specific Information versus Generic Information**

Two commenters asked how impacts or site conditions will be addressed - if they would be handled generically in the GEIS or on a site-specific basis.

*Response: Ecological and environmental issues will be considered to determine if they are generic issues that should be included in the GEIS. Those issues determined not to be generic and that require a site specific assessment will be identified in the GEIS. This comment is within the scope of the GEIS*

Two commenters asked how site-specific conditions such as groundwater pathways would be considered in the GEIS. If they would be considered generically or on a site-specific basis.

*Response: Ecological and environmental issues will be considered to determine if they are a generic issue that should be included in the GEIS. Those issues determined not to be generic and that require a site specific assessment will be identified in the GEIS. This comment is within the scope of the GEIS*

Eight commenters (in 16 different comments) asked about the situations and rules for triggering a site-specific environmental impact assessment. Specific examples of items that might trigger a site-specific analysis include contamination in pools and under reactor sites, coastal and flood plain issues, seismology, background radiation, pollution, reactor types, geology, operating experiences, land use, economy, synergistic effects of other toxins or industries in the area, decommissioning techniques, uniqueness of the site soil contamination, and river sediments.

*Response: The GEIS will discuss the issue of site-specific versus generic environmental impacts. These comments are within the scope of the GEIS.*

Six commenters (9 comments) indicated that, in general, a site-specific impact statement or a set of guidelines that the utilities need to consider during decommissioning might be more appropriate than a GEIS because of the site-specific nature of decommissioning. One of the commenters thought that the question of what does and does not legitimately constitute site-specific factors in need of an EIS are economically driven instead of safety driven.

*Response: The GEIS will discuss the issue of site-specific versus generic environmental impacts. These comments are within the scope of the GEIS.*

## **8. Incorporation of information from previously developed EISs**

One commenter recommended that the GEIS address whether and how to incorporate findings from the EISs for plant construction and operation, analyses that have accrued during plant operations and reports on referenced facilities.

*Response: The introductory chapter to the GEIS will discuss the interface between the GEIS for decommissioning and the EISs for plant construction, operation, and license renewal. This comment is within the scope of the GEIS.*

One commenter indicated that they did not agree with writing a GEIS based on decommissioning of Yankee Rowe and Sequoia Fuels - since these decommissioning processes were poorly handled.

*Response: The comment is noted.*

## **9. Methodology**

### **A. Methodology - Process**

Two commenters thought the environmental reports for the plants should be updated before the GEIS is revised. The update would need to include plumes of contamination that are onsite and could potentially be released offsite.

*Response: The regulations in 10 CFR 50.82 do not require an environmental assessment until submission of the license termination plan which should be no later than two years before the anticipated termination of the license. Requiring an update of the environmental report is not within the scope of the GEIS.*

One commenter thought the NRC should take charge of the radioactive materials, rather than playing a role in regulating these materials and helping licensees to decommission.

*Response: Rewriting the regulations for decommissioning is not within the scope of the GEIS.*

One commenter recommended that decommissioning be treated as an activity separate from operations.

*Response: Environmental impacts from decommissioning activities will be specifically addressed (and separately from impacts of operation) in the GEIS. This comment is within the scope of the GEIS.*

## **B. Determination of Boundary Conditions**

One commenter asked how the boundary conditions for the GEIS would be determined. The commenter then proceeded to recommend several methods for determining boundary conditions for waste volumes.

*Response: The GEIS will be developed by collecting a reasonable range of information from the sites that are undergoing decommissioning and using that information to set boundaries for environmental impacts. This comment is within the scope of the GEIS.*

## **C. Changing the parameters from the initial study**

One commenter recommended that the existing GEIS be used as a baseline and that it should be supplemented in those areas where additional information is available. This would allow those licensees that are currently undergoing decommissioning to remain enveloped and those that are using the GEIS to evaluate a future decommissioning would have more up to date information.

*Response: The current GEIS is being supplemented based on additional information and decommissioning experience and history. This comment is within the scope of the GEIS.*

## **10. Mitigation**

One commenter recommended that the NRC adequately address mitigation in the GEIS or a site-specific analysis.

*Response: Mitigation will be addressed within the scope of the GEIS.*

## **11. Grandfathering**

Three commenters asked about the impact of the new GEIS on facilities that have shut down and are in compliance with the 1988 GEIS.

*Response: The use of the GEIS by facilities that have previously shut down will be addressed in the GEIS. This comment is within the scope of the GEIS.*

## 12. Regulations

### A. 1996 Decommissioning Rule

Six commenters (nine different comments) thought that a full decommissioning plan was a necessity before the start of decommissioning. One commenter believed that the decision not to ask for a full decommissioning plan is a violation of NEPA. One commenter thought there should be third party verification of the decommissioning plans. One commenter specifically addressed the need for a mandatory site-specific EIS.

*Response: The regulations that are related to the submittal of a PSDAR rather than a full decommissioning plan are given in 10 CFR 50.82. Potential changes to regulations to require a full decommissioning plan are not within the scope of the GEIS.*

One commenter disagreed with the decommissioning process in general.

*Response: The comment is noted.*

Three commenters thought that either the PSDAR was inadequate or that a decommissioning plan should be required to provide involvement of the public in the process. One commenter thought these remarks should be included in the GEIS as alternative approaches.

*Response: The regulations related to the development of a PSDAR are given in 10 CFR 50.82. Potential changes to regulations to require a decommissioning plan are not within the scope of the GEIS.*

One commenter recommended that regulations be introduced related to what will happen to the site after 60 years.

*Response: The activities following license termination are not under the jurisdiction of the NRC and are not within the scope of the GEIS.*

One commenter characterized the new 1996 rule as “an absurd rule change designed to accommodate the industry's economic bottom line.”

*Response: The 1996 rule was promulgated following procedural requirements that included the public participation process. The decommissioning regulations are outside the scope of the GEIS.*

One commenter did not think that the facility descriptions, decommissioning activities, radiological surveys, worker protection programs, accident analysis, decommissioning cost estimates and decommissioning technical specifications and QA/QC plan are adequate or detailed enough.

*Response: The requirements for the contents of the PSDARs are provided in the regulations 10 CFR 50.82(a)(4) and specified in Regulatory Guide 1.185. The issue is not within the scope of the GEIS*

## **B. Relationship to other regulations**

One commenter thought the GEIS should address the relationship with other NRC regulations such as site release criteria.

*Response: The relationship between the GEIS and other NRC regulations or EISs will be discussed in the introductory chapter. This comment is within the scope of the GEIS.*

Two commenters asked for the relationship between this scoping process and the development of computer codes for release and recycling of radioactive sites and materials, and rulemaking on clearance. They also asked if sections of the NRC Federal code would be altered as a result of this process.

*Response: A discussion of the relationship between various decommissioning regulations and the various parts of the decommissioning process will be included in the first chapter of the GEIS. Any decision to revise regulations would be made as a result or following completion of the supplemental GEIS. This decision is not within the scope of information or analyses to be included in the GEIS.*

One commenter recommended that NRC treat all problems and areas of concern as "site specific problems" rather than as generic industry problems.

*Response: The GEIS will identify issues that require a site-specific analysis. This comment was within the scope of the GEIS.*

## **13. Scoping Meetings - schedule / substance etc.**

Four commenters were not satisfied with the availability of information to the public. The specific complaints were that the public notice for the meeting was inadequate, that the information on the website is not sufficient (rather that access should be easy for all members of the public) and that NRC did not provide adequate information or reference documents on its intended scope of the decommissioning issues for public comment.

*Response: The comment is noted.*

One commenter requested a meeting to provide information on what should not be included in the GEIS.

*Response: The comment is noted.*

Two commenters stated their support for the NRC's scoping process.

*Response: The comment is noted.*

One commenter recommended that the NRC develop some frequently asked questions and answers to be handed out during the scoping meetings.

*Response: The comment is noted.*



**14. Comments related to specific nuclear power plants**

Three commenters addressed the use of rubbleization as an activity for decommissioning at Maine Yankee. One commenter agreed that the NRC needed to fulfill their responsibilities related to NEPA. A second commenter believed that a full environmental assessment should be made to determine if a site-specific EIS is necessary. A third commenter strongly opposed any delay in a specific plant initiative based on the supplement to the GEIS.

*Response: Rubblization will be addressed within the GEIS. Specific areas or activities requiring site-specific analyses will be addressed. This comment is within the scope of the GEIS.*

**15. Requests for clarification**

There were 14 requests for clarification during the scoping meetings, which were answered during the meeting and were not included in this scoping document.

**16. Request for additional comment period time**

Three commenters requested an additional 6 month extension on the comment period on scoping in addition to transcripts of all scoping meetings.

*Response: The comment is noted.*

**17. Support of NEI comments**

One commenter supported the comments made by the Nuclear Energy Institute.

*Response: The comment is noted.*

**18. Comments related to the role of the NRC**

One commenter suggested the NRC redefine their mission statement to overtly declare that it is formed to protect the economic interests of the nuclear industry even to the detriment of public safety, environmental quality, and the democratic process.

*Response: The comment is noted.*

## REFERENCES

National Environmental Policy Act of 1969, as amended 42 USC 4321, et. seq.

U.S. Atomic Energy Commission. 1974. Termination of Operating Licenses for Nuclear Reactors. Regulatory Guide 1.86.

U.S. Nuclear Regulatory Commission. 1982. Final Generic Environmental Impact Statement for 10 CFR Part 61. NUREG-0945.

U.S. Nuclear Regulatory Commission. 1988. Final Generic Environmental Impact Statement on Decommissioning of Nuclear Facilities. NUREG-0586

U.S. Nuclear Regulatory Commission. 1997. Generic Environmental Impact Statement in Support of Rulemaking on Radiological Criteria for License Termination of NRC-Licensed Nuclear Facilities. NUREG-1496.

U.S. Nuclear Regulatory Commission. 1996. Generic Environmental Impact Statement for License Renewal of Nuclear Plants. NUREG-1437.

U.S. Nuclear Regulatory Commission. 1997. Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM). NUREG-1575.

U.S. Nuclear Regulatory Commission. 1999. Standard Format and Content of License Termination Plans for Nuclear Power Reactors. Regulatory Guide 1.179

U.S. Nuclear Regulatory Commission. 2000. Standard Review Plan for Evaluating Nuclear Power Reactor License Termination Plans. NUREG-1700

U.S. Nuclear Regulatory Commission. 2000. Standard Format and Content for Post-shutdown Decommissioning Activities Reports. Regulatory Guide 1.185

U.S. Nuclear Regulatory Commission. 2000. Decommissioning of Nuclear Power Reactors. Regulatory Guide 1.184. Decommissioning of Nuclear Power Reactors

Code of Federal Regulations. 2000.

- 10 CFR Part 20 - Standards for Protection Against Radiation
- 10 CFR Part 26 - Fitness for Duty Programs
- 10 CFR Part 50 - Domestic Licensing of Production and Utilization Facilities
- 10 CFR Part 51 - Environmental Protection Regulations for Domestic Licensing and Related Regulatory Functions
- 10 CFR Part 54 - Requirements for Renewal of Operating Licenses for Nuclear Power Plants
- 10 CFR Part 60 - Disposal of High-Level Radioactive Wastes in Geologic Repositories
- 10 CFR Part 61 - Licensing Requirements for Land Disposal of Radioactive Waste
- 10 CFR Part 72 - Licensing Requirements for the Independent Storage of Spent Nuclear Fuel and High-Level Radioactive Waste