

## Appendix O

**Comment:** The historic undocumented burial of nuclear waste onsite at nuclear power stations must be investigated, surveyed and mitigated by station owners under the decommissioning plan. As the U.S. General Accounting Office (GAO) May 1989 "NRC's Decommissioning Procedures and Criteria Need to Be Strengthened" (GAO/RCED-89-119) reports in its Executive Summary: "For almost 25 years, NRC allowed licensees to bury radioactive waste onsite without prior NRC approval. NRC required the licensees to retain records on the amounts and substance buried rather than provide them to NRC. In five of the eight cases GAO reviewed, licensees buried waste onsite, but four licensees either did not keep disposal data or the data are incomplete. In one case, NRC terminated a license and 10 years later learned that radioactive material had been buried on the site. Also, NRC generally does not require licensees to monitor for groundwater or soil contamination from buried waste. All five licensees have found ground water contaminated with radioactive substances. At four sites, some of the contamination appears to have resulted from the buried waste—the contamination at one site was 400 times higher than EPA's drinking water standards allow. At another site, the contamination was 730 times higher, but the source was not known." (CL-48/15)

**Response:** *The NRC has addressed the issues in the GAO report in a letter to U.S. Senator Joseph I. Lieberman from Richard A. Meserve, Chairman U.S. NRC dated, March 2002 (ML020250068); however, the comment does not relate to commercial nuclear reactors. 10 CFR 50.75(g) requires power reactor licensees to maintain records of activities or events that could influence decommissioning. Additionally, licensees are required to conduct a site characterization study to support remediation efforts outlined in their LTP. During the review of the LTP, the NRC staff focuses attention on the possibility of groundwater contamination and soil contamination. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** An inventory of all the radioactivity, radioactive wastes and materials from reactor operation and decommissioning, and independently verified reporting of its disposition (whether onsite or offsite, whether in licensed or unlicensed facilities and specifics of its storage condition) should be a required part of the environmental review and reports. This information must be part of the site-specific Environmental Impact Statement process and fully disclosed at each reactor as site-specific issues, with the opportunity for formal local hearings and legally-binding input. The corporations responsible for the radioactive wastes from nuclear power reactor operations should be required, by NRC, to keep balance sheets of the radioactivity generated by their reactors and the decommissioning process, and track the disposition of that radioactivity whether it is kept onsite, allowed to leak out into the air and water, or shipped to licensed or unlicensed facilities for disposal or processing, and for possible release into household items. (CL-48/16)

**Response:** *The purpose of the Supplement provides an environmental analysis of the impacts associated with the decommissioning process. The Supplement does not (1) establish or revise regulations, (2) impose requirements, (3) provide relief from requirements, or (4) provide guidance on the decommissioning process. 10 CFR 50.75(g) requires power reactor licensees to maintain records of activities or events that could influence decommissioning. Additionally licensees are required to conduct a site characterization study to support remediation efforts outlined in their LTP. During the review of the LTP, the NRC staff focuses attention on the possibility of groundwater contamination and soil contamination. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** New environmental assessment documents must be required, as old assessments are outdated and have been found to be inaccurate both on and offsite. (CL-50/11)

**Response:** *This Supplement is an update to an existing environmental impact statement. In addition, NRC decommissioning regulations at 10 CFR 50.82 require (1) that environmental issues be addressed in the post-shutdown decommissioning activities report and (2) that the licensee include a supplement to its environmental report part of the License Termination Plan. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** Many questions regarding decommissioning require site-specific and reactor-specific analyses. The Callaway plant, for example, here in Missouri, is located about 5.5 miles away from the Missouri River, the source of the plant's cooling water and the depository for its liquid effluent. It would seem that testing would be needed of the unusually long effluent-discharge pipe in order to determine where leakage may have occurred during the plant's operation and where soil excavation may therefore be required as a part of the

decommissioning. Sediment samples would be needed where the discharge pipe releases the plant's effluent into the Missouri River. Without such site-specific analyses, a determination of the extent of the riverbed's contamination would not be possible. (CL-51/2)

**Response:** *This Supplement deals with the impacts of decommissioning. Identification of onsite, contaminated areas is an integral part of the decommissioning process. Licensees are required to conduct a site characterization study to radiologically characterize the site and to support remediation efforts outlined in the LTP. One of the stated purposes of this document is to identify and assess the impact of decommissioning activities generically so that a site-specific assessment is not needed. The cooling water system, from intake structure through the discharge structure, is an integral part of the plant and is on owner-controlled land. It is, therefore, considered to be onsite. NRC will not terminate an operating license until the radiation survey and associated documentation demonstrate that the facility and site are*

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*suitable for release in accordance with the criteria for decommissioning in 10 CFR Part 20, Subpart E. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** This Draft 1 references MARSSIM. In its introduction, Draft "Marssim" did not address all sorts of things from contamination on vicinity properties through contaminated subsurface soil, water, construction materials and on and on. All of which must be cleaned up/have the contamination removed. They showed a lack of understanding of the groundwater cycle, and groundwater issues JUST LIKE THIS DRAFT DOES. (CL-20/17)

**Comment:** Methodology must be established to determine the extent of underground rad waste contamination and burial. The Multi-Agency Radiological Site Survey and Investigation Manual (MARSSIM) establishes measurement criteria for only 6 inches below the surface of soil. MARSSIM does not address the serious problem of locating and remediating underground contamination. Before 1980, the NRC in fact allowed the burial of rad waste onsite. A General Accounting Office (GAO) investigation found that the routine burial of rad waste 4 feet deep at reactor sites before 1980 occurred without adequate documentation. (CL-50/26)

**Response:** *The MARSSIM provides detailed guidance for planning, implementing, and evaluating environmental and facility radiological surveys conducted to demonstrate compliance with a dose- or risk-based regulation. It was prepared by the Department of Defense, The Department of Energy, the Nuclear Regulatory Commission, and the Environmental Protection Agency and discusses contamination of surface soil and building surfaces in detail. The MARSSIM specifically states that since other media (e.g., groundwater, surface water, subsurface soil, equipment, and vicinity properties) are potentially contaminated at the time of the final status survey, modifications to the MARSSIM survey design guidance and examples may be required. Identification of onsite contaminated areas is an integral part of the decommissioning process. NRC will not terminate an operating license until the radiation survey and associated documentation demonstrate that the facility and site are suitable for release in accordance with the criteria for decommissioning in 10 CFR Part 20, Subpart E. The comments did not provide new information relevant to this Supplement and will not be evaluated further. The comments did not result in a change to the Supplement.*

**Comment:** Nuclear reactors, through planned and unplanned radioactive releases, can create plumes of contamination, which migrate offsite. Yankee Rowe currently has a plume, which reached springs, feeding into the Deerfield River where residents recreate. Connecticut Yankee has plumes of tritium and other radionuclides which have migrated into the aquifer and the Connecticut River for decades. Accountability (i.e. remediation and/or long-term monitoring) for plumes of contamination that have offsite consequences must be established. (CL-50/13)

**Response:** *The purpose of this Supplement is to provide an environmental assessment of the impacts associated with the decommissioning process. It is not the place to establish or revise NRC regulations. Procedures for revising NRC regulations are found in 10 CFR, Part 2. NRC will not terminate an operating license until the radiation survey and associated documentation demonstrate that the facility and site are suitable for release in accordance with the criteria for decommissioning in 10 CFR Part 20, Subpart E. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** Furthermore, accountability must be established for routine NRC-regulated releases, which have accumulated in the discharge pathways. Big Rock Point, Millstone Unit 3 and other reactors have identified contaminated sediment caused by such releases. Remediation must capture such plumes both onsite and off. (CL-50/14)

**Comment:** Reactor contaminants in the sediments in the EPA studies included cesium-134 and -137, cobalt-58 and -60, manganese-54, and antimony-125. With evidence that these isotopes were able to bypass the liquid waste filters, it would seem probable that other fission, activation and corrosion products could have, too. And of course some reactor isotopes are extremely long-lived. Nickel-59, mentioned above, is produced when the nickel-58 in stainless steel captures electrons. Since the EPA found corrosion products in the sediment of several metals for which they tested, is it not possible that other metals subjected to the reactor's hostile environment (repeated cycles of temperature and pressure, high neutron fluxes, harsh chemicals, etc.) may also have degraded or dissolved, and migrated out of the plant? (CL-51/3)

**Comment:** Could they be detected in the sediment if tested? Some of the corrosion products identified in the oxide layer ("crud") of various reactors include isotopes of iron, zinc, molybdenum, tungsten, titanium, and carbon. Nickel-59, mentioned above, is produced when the nickel-58 in stainless steel captures electrons. Since the EPA found corrosion products in the sediment of several metals for which they tested, is it not possible that other metals subjected to the reactor's hostile environment (repeated cycles of temperature and pressure, high neutron fluxes, harsh chemicals, etc.) may also have degraded or dissolved, and migrated out of the plant? (CL-51/4)

**Response:** *Nuclear power reactors were licensed with the expectation that there would be routine airborne and liquid releases of radioactivity to the environment and that the releases would be detectable. The licensee is allowed to release gaseous and liquid effluents to the environment, but the releases must be monitored and meet the requirements of 10 CFR Part 20, Appendix B, Table 2. Therefore, although contaminants may be present and*

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*detectable offsite, the release limits have been designed and proven to be protective of the health and safety of the public and the environment. The comments did not provide new information relevant to this Supplement and will not be evaluated further. The comments did not result in a change to the Supplement.*

### **O.4.7 License Termination Criteria**

**Comment:** Can you explain what the differences are between the actual impacts on a population of say 10,000 for the two options of non-restricted use and restricted use at the end of the decommissioning. And number two is what are the two levels of acceptable risk for the two options of leaving the site—leaving the site really clean, which is unrestricted use, or leaving the site restricted? **(AT-B/2)**

**Comment:** The question was 25 millirems where? (for unrestricted release) **(AT-B/3)**

**Response:** *The criteria for license termination are discussed in Section 2.2.2. For sites that have been determined to be acceptable for unrestricted use, there are no requirements for further measurement of radiation. For sites that have been determined to be acceptable for license termination under restricted conditions, additional measurements of radiation are required for sites that have residual radioactivity in excess of 1 mSv/yr (100 mrem/yr), but less than 5 mSv/yr (500 mrem/yr). These measurements are to be made by a responsible government entity or independent third party, including a governmental custodian of a site. The measurements are to be carried out no less frequently than every 5 years to ensure the institutional controls remain in place as necessary to meet the criterion of 0.25 mSv/yr (25 mrem/yr) to an average member of the critical group. The comments did not provide new information relevant to this Supplement and will not be evaluated further. The comments did not result in a change to the Supplement.*

**Comment:** I also utterly oppose defining decommissioning, in part, to include the “release of property for unrestricted use” and the “release of property under restricted conditions”—in other words, releasing radioactively contaminated materials into daily consumer use and commerce and unregulated disposal. How can you contemplate such a thing!!!!!!!!!!!!!! **(CL-33/20)**

**Comment:** I am opposed to the following change to NUREG-0586: In Supplement 1 to the Generic Environmental Impact Statement on Decommissioning: NRC defines decommissioning, in part, to include the “release of property for unrestricted use..” and the “release of property under restricted conditions.” **(CL-43/14)**

**Comment:** I am opposed to NRC regulations pertaining to Decommissioning which would allow NRC to define decommissioning in part, to include “the release of property for unrestricted use..” And the “release of property under restricted conditions.” It is entirely inappropriate and

scientifically ludicrous to allow "release" of highly radioactive contaminated materials into daily consumer use and commerce, or unregulated disposal, or the recycling of such materials into any form which causes public exposure with radioactivity contaminated materials. (CL-44/13)

**Response:** *The criteria for license termination are described in Section 2.2.2. The release of the property occurs only after the license termination criteria are met. The purpose of this Supplement is to provide an environmental assessment of the impacts associated with the decommissioning process. The Supplement does not (1) establish or revise regulations, (2) impose requirements, (3) provide relief from requirements, or (4) provide guidance on the decommissioning process. The comments did not provide new information relevant to this Supplement and will not be evaluated further. The comments did not result in a change to the Supplement.*

**Comment:** I am opposed to the following change to NUREG-0586: In Supplement 1 to the Generic Environmental Impact Statement on Decommissioning: NRC states that the portion of the decommissioning regulations (10 CFR 20 section E and its Environmental Impact Statement, NUREG 1496) that set the 25, 100, and 500 millirems per year allowable public dose levels from closed, decommissioned nuclear power sites, are not part of the scope of the Supplement. (CL-43/13)

**Comment:** I am opposed to NRC regulations pertaining to Decommissioning which would allow NRC to assert that the portion of decommissioning regulations (10 CFR 20 section E and its EIS, NUREG 1496) set the 25, 100 and 500 millirems per year allowable public dose levels from closed, decommissioned nuclear plants sites, and are not part of the scope of the Supplement. I disagree, and consider the inclusion of exposure from closed decommissioned plants a necessity to develop an accurate and realistic analysis of cumulative impacts. (CL-44/12)

**Comment:** NRC states that the portion of the decommissioning regulations (10 CFR 20 section E and its Environmental Impact Statement, NUREG 1496) that set the 25, 100 and 500 millirems per year allowable public dose levels from closed, decommissioned nuclear power sites, are not part of the scope of this Supplement. (CL-48/48)

**Response:** *Chapter 1, Introduction, addresses how the scope of the Supplement was determined. Regulations pertaining to restricted or unrestricted release of a site were promulgated as part of the 1997 rulemaking on radiological criteria for license termination of NRC-licensed nuclear facilities. The rulemaking relied on by the "Generic Environmental Impact Statement in Support of Rulemaking on Radiological Criteria for License Termination of NRC-Licensed Nuclear Facilities," NUREG-1496, July 1997. Site release criteria are outside the scope of this Supplement. The Supplement does not (1) establish or revise regulations, (2) impose requirements, (3) provide relief from requirements, or (4) provide guidance on the*

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*decommissioning process. The comments did not provide new information relevant to this Supplement and will not be evaluated further. The comments did not result in a change to the Supplement.*

**Comment:** The trans-solutional problem of complete site decontamination is here evident: the NRC does not require the return of a decommissioned facility and site to its preoperational radiation level. (CL-52/14)

**Response:** *Naturally occurring radioisotopes in the building materials would make such a standard impossible to achieve. For those facilities in which soil or building contamination exists, it would be extremely difficult to demonstrate that an objective of "return to background" had been achieved. In addition, the removal of soil or concrete to "pre-existing background" levels is generally not desirable from the perspective of risk to public health and safety and protection of the environment. For example, at some point, the removal of increasingly larger volumes of concrete and soil would also result in a greater net risk from transportation accidents. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** It really may matter to you, Ms. Hickey, that the license termination document details one level of exposure while the draft EIS on decommissioning details another level of exposure. (AT-B/6)

**Response:** *The comment is not specific and the staff is unable to respond. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** Twenty-five millirems additional per year of exposure added to an increasing background, which is certainly manmade—and I say manmade. I mean women had very little to do with the decision making that went into increasing the background radiation that all of us are exposed to. But 25 millirems per year additional exposure is way too much....This is a roulette game. So the dose is way out of line for the restricted use, not to even mention the unrestricted use, which I'll get distressed if I do, so I won't. (AT-B/15)

**Response:** *The NRC's regulatory limits for radiological protection are set to protect workers and the public from the harmful health effects of radiation on humans. The limits are based on the recommendations of standards-setting organizations. Radiation standards reflect extensive scientific study by national and international organizations (the International Commission on Radiological Protection [ICRP], the National Council on Radiation Protection and Measurements [NCRP], and the National Academy of Sciences [NAS]) and are conservative to ensure that the public and workers at nuclear power plants are protected. The NRC radiation exposure standards are presented in 10 CFR Part 20, "Standards for Protection Against*

*Radiation,” and are based on the recommendations in ICRP 26 and 30. The purpose of this Supplement is to provide an environmental assessment of the impacts associated with the decommissioning process. The Supplement does not (1) establish or revise regulations, (2) impose requirements, (3) provide relief from requirements, or (4) provide guidance on the decommissioning process. The acceptability of the site release criteria is outside the scope of the Supplement (see Section 1.3). The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** I think the one other question I had was as I recall when the first statement was issued, there was a discrepancy between the NRC radiation exposure floor, threshold level, and the EPA level. Is that still out there? I think yours is 25, theirs is 4 to 15 or something for the same exposure. (AT-C/5)

**Response:** *NRC continues to rely on the findings from two international organizations, the International Commission on Radiation Protection (ICRP) and the National Council on Radiation Protection and Measurements (NCRP). Both organizations have acknowledged the difficulty in setting acceptable levels of risk for the public; however, both ICRP and NCRP have established a dose of 1 mSv/yr (100 mrem/yr) to an individual member of the public as the level that is acceptable for exposure to radiation from sources other than medical procedures. The ICRP and the NCRP further established the need to reduce this annual dose rate by using the principle of “optimization,” considering the cost-effectiveness of additional dose reduction. Following these recommendations, the NRC adopted a level of 0.25 mSv/yr (25 mrem/yr) as the value for residual radioactivity at a site under consideration for license termination. EPA’s radiation dose limit of 0.15 mSv/yr (15 mrem/yr) results from a different technical analysis for establishing an acceptable risk to the public and a value for residual radioactivity other than that of NRC where radiation is the only contaminant considered. In addition, the NRC also has a “cleanup” requirement of “As Low As Reasonably Achievable” (ALARA). The use of the ALARA requirement usually results in a site that is below the EPA’s requirements as well. Nuclear reactors are licensed by the NRC, and the NRC is responsible for making the safety and environmental determination for termination of the license. Therefore, licensees are required to meet the NRC’s requirements for residual radioactivity. However, since the NRC value of 0.25 mSv/yr (25 mrem/yr) is a limit, a licensee can choose to further reduce the value of residual radioactivity at a site to achieve annual dose values less than 0.25 mSv/yr (25 mrem/yr). The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** THERE SHOULD BE ABSOLUTELY NO UNRESTRICTED USE OF THE PROPERTY EVER. THE ADDITIONAL EXPOSURE IS TOTALLY INSANE (CL-20/12)



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**Response:** *Unrestricted use is described in Section 2.2.2. The purpose of the Supplement is to provide an environmental assessment of the impacts associated with the decommissioning process. The 1997 rule establishing site release criteria allows for termination of the license without continued restrictions on the site. The Supplement does not (1) establish or revise regulations, (2) impose requirements, (3) provide relief from requirements or (4) provide guidance on the decommissioning process. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** I am opposed to the following proposal(s) in the EIS: NRC ignores radiation exposures to children and other vulnerable members of the population and creates a fictitious highest exposed "critical group" based on unsubstantiated assumptions. (CL-26/6)

**Response:** *The staff believes the author of the comment is referring to the effects of radiation exposures to the public from the site following license termination. The acceptability of the site release criteria is outside the scope of the Supplement. However, the dose models that were used to develop the site release criteria evaluate the persons receiving the highest dose as the maximally exposed individual. This person is a resident farmer. Doses were calculated to children and other vulnerable members of the population; however, their doses were lower because of the types of activities they were involved in. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

### **O.4.8 Beyond License Termination**

**Comment:** There are still radioactive dangers after decommissioning. (CL-29/1)

**Comment:** I am opposed to the following change to NUREG-0586: In Supplement 1 to the Generic Environmental Impact Statement on Decommissioning: NRC ignores radiation dangers after decommissioning is done and utility is relieved of liability. (CL-43/4)

**Comment:** The proposed rules ignore radiation dangers after decommissioning. (CL-25/7)

**Comment:** I am opposed to the following proposal(s) in the EIS: NRC ignores radiation dangers after decommissioning is done and utility is relieved of liability. (CL-26/5)

**Comment:** I utterly oppose ignoring radiation dangers after decommissioning is done and utility is relieved of liability. (CL-33/9)

**Comment:** The nuclear facility's land, even after decommissioning, must not be allowed to revert to public or private use, even if the NRC believes that the radioactivity on the land is less than 25 millirems per year. Additionally, in no circumstances should future buildings, structures, etc. be built atop the former nuclear site. The draft GEIS mentions that tourism activities are planned for the Trojan nuclear plant in Oregon after decommissioning. Under no circumstances should that be allowed at any of these sites. Bringing tourists or school groups to nuclear plants that are running now is not acceptable. It's dangerous. I was just in Oregon for my honeymoon, and I just can't imagine going and touring that site. There are a lot of beautiful things in Oregon but the Trojan plant ain't one of them. (AT-A/39)

**Comment:** The nuclear facility's land, even after decommissioning, must not be allowed to revert to public or private use even if the NRC believes that the radioactivity on the land is less than 25 millirems per year. Additionally, under no circumstances should future buildings, structures, etc. be built atop the former nuclear site. (CL-08/24)

**Comment:** Even after all fuel is removed from the site and the entire structure is removed, the site will still be radioactive forever and still need a security person, basic maintenance person. (CL-20/42)

**Response:** *The acceptability of the site release criteria and its potential for affecting public health and safety and protection of the environment after license termination is outside the scope of the Supplement (see Section 1.3). Potential radiological impacts following license termination are covered by the "Final Generic Environmental Impact Statement in Support of Rulemaking on Radiological Criteria for License Termination of NRC-Licensed Nuclear Facilities," NUREG-1496, which supported the development of 10 CFR Part 20. Current criteria for license termination, given in 10 CFR Part 20, Subpart E, and shown in this Supplement in Section 2.2.2, stated that the Commission has established a 0.25 mSv/yr (25 mrem/yr) total effective dose equivalent to an average member of the critical group as an acceptable criterion for release of any site for unrestricted use. This Supplement does not (1) establish or revise regulations, (2) impose requirements, (3) provide relief from requirements, or (4) provide guidance on the decommissioning process. The comments did not provide new information relevant to this Supplement and will not be evaluated further. The comments did not result in a change to the Supplement.*

**Comment:** The NRC must continue to monitor sites FOREVER after license termination in case of sudden increases in radiation levels from a source on the site no one had either considered or knew was there. (CL-20/88)

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**Comment:** What agency or governing body is responsible for monitoring the site after the decommissioning is deemed “complete”? How do the licensee and a government agency, such as the NRC, which is mandated to protect the public health, allowed to walk away from a site that will essentially remain radioactive forever? (CL-08/31)

**Response:** *Structures, systems, and components onsite will be surveyed during the final radiation survey and contamination levels will be reduced to the level necessary for termination of the license. All structures, systems, and components that have radioactive contamination that could exceed the criteria would be decontaminated or dismantled and shipped to a low-level-waste disposal site. The licensee must keep records of information during the operating phase of the facility that would be used to identify where any spills or other occurrences involving the spread of contamination would be located. In addition, because the radioactive material will have been removed from the site, there would be no mechanism for further contamination or radiological releases, and any radiation levels would only be reduced over time due to natural decay. Therefore, there would not be any significant increase in onsite radiation levels some time in the future. The comments did not provide new information relevant to this Supplement and will not be evaluated further. The comments did not result in a change to the Supplement.*

**Comment:** For a site decommissioning that results in a license termination for unrestricted use, the long-term radiological impacts to the public may well be within acceptable limits. However, for a decommissioning that results in a license termination with restricted site use the potential exists for long-term radiological impacts to the public to be far above acceptable limits. The draft Supplement does not consider this potential. While narrowly focusing the radiological studies to the decommissioning process, the NRC does not consider those potential long-term impacts to the public. (CL-17/3)

**Response:** *Licensees are allowed by regulations in 10 CFR Part 20, Subpart E, “Radiological Criteria for License Termination,” to release the site for restricted use. The impacts following a restricted release license termination will not be considered by this Supplement because the impacts are highly site-specific and would require a site-specific analysis. The site-specific analysis would be included in the License Termination Plan submitted to the NRC for review and approval by the license amendment process. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** To allow utilities to have no liability after decommissioning is done when the proposals are seen as “generic” does not provide any protection to local citizens. Accountability for our actions is important and utility companies should not be exempt from that. (CL-39/4)

**Response:** *The consideration of liability is outside the scope of this Supplement. The criteria for license termination are discussed in Section 2.2.2. Termination of the NRC license does not eliminate the utility's liability. The missions of the NRC include the protection of public health and safety and protection of the environment. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** Decommissioning should never be deemed to be complete until the entire site is no longer radioactive. We understand that this means extremely long-term oversight of the reactor sites. Some of the decommissioning wastes, such as the nickel compounds, have extremely long half-lives and remain dangerous for millennia. Liability for the site needs to remain with the utilities and the NRC must retain regulatory control over the entire site. (CL-40/3)

**Response:** *For those sites in which structures or buildings are left it would be extremely difficult or impossible to demonstrate a "return to background" or that the site is "no longer radioactive." Naturally occurring radioactive materials in the building materials, soils, the presence of radon gas, and cosmic rays would make such a standard impossible to achieve. Termination of the license does not eliminate the licensee's liability for the site. The criteria for license termination are described in Section 2.2.2. The release of the property occurs only after the license termination criteria are met. The purpose of this Supplement is to provide an environmental assessment of the impacts associated with the decommissioning process. The Supplement does not (1) establish or revise regulations, (2) impose requirements, (3) provide relief from requirements or (4) provide guidance on the decommissioning process. The consideration of liability is outside the scope of this Supplement. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** Residual contamination left at a site whose license was terminated for unrestricted use could be perceived as disposal of low-level radioactive waste. (CL-17/6)

**Response:** *The material that remains at the site after the license has been terminated must meet the license termination criteria in 10 CFR Part 20, Subpart E, or it can not have been left at the site. Material that cannot meet these criteria would have been considered to be low-level radioactive waste and would have to have been disposed at a licensed LLW facility before the license could be terminated. Therefore, any low-level radioactive waste left on site after license termination would not be considered as radioactive waste. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

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**Comment:** Since the NRC would no longer have regulatory authority over the site, what governmental institution or corporation would be entrusted with the long-term collection, monitoring and analyses of the groundwater samples? (CL-51/16)

**Comment:** Okay, so who's responsible then for a site that has restricted use. Because I couldn't quite tell. Who would actually protect the public? (AT-B/4)

**Response:** *For sites that have been determined to be acceptable for license termination under restricted conditions, additional measurements of radiation are only required for sites that have residual radioactivity between 1 and 5 mSv/yr (100 and 500 mrem/yr) to the average member of the critical group. These measurements are to be made by a responsible government entity or independent third party, including a governmental custodian of the site. The institutional controls remain in place as necessary to meet the criterion of 0.25 mSv/yr (25 mrem/yr) to an average member of the critical group (Section 2.2.2). The licensee is responsible to provide sufficient funds to carry out responsibilities for control and maintenance of the site (Section 2.2.2). The NRC regulations do not specify the institutional controls. The institutional controls are established during the NRC staff review of the license termination plan (LTP). The LTP is incorporated into the license by amendment so an opportunity to request a hearing would be provided. The comments did not provide new information relevant to this Supplement and will not be evaluated further. The comments did not result in a change to the Supplement.*

**Comment:** Who would determine if remediation were needed; who would be liable for the costs of offsite contamination or other accidents? (CL-51/17)

**Response:** *For sites that have been determined to be acceptable for unrestricted use, there are no requirements for future measurement of radiation levels. It is not expected that these radiation levels would change, other than to be reduced over time, because the radioactive material will have been removed from the site, and there would be no mechanism for further contamination or radiological releases. For sites that have been determined to be acceptable for license termination under restricted conditions, additional measurements of radiation are only required for sites that have residual radioactivity between 1 and 5 mSv/yr (100 and 500 mrem/yr) to the average member of the critical group. These measurements are to be made by a responsible government entity or independent third party, including a governmental custodian of the site. The institutional controls remain in place as necessary to meet the criterion of 0.25 mSv/yr (25 mrem/yr) to an average member of the critical group (Section 2.2.2). The licensee is responsible to provide sufficient funds to carry out responsibilities for control and maintenance of the site (Section 2.2.2). The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** Who would be responsible to protect against the inadvertent recycling of radioactively contaminated building rubble and soil into new construction or as fill, a possibility mentioned but basically discounted in SECY-00-0041, a letter about rubblized concrete dismantlement, from William Travers, NRC Executive Director for Operations, to the Commissioners (February 14, 2000). (CL-51/18)

**Response:** *During the decommissioning process for power reactors, materials may not be released, recycled, or reused if there are detectable levels of licensed radioactive material present. These materials are carefully monitored and controlled before release. If contaminated equipment or debris is inadvertently released from the site and it presents a risk to public health and safety or a risk to the environment then the material would be recovered and disposed of in a licensed disposal facility. Responsibility for recovery of the material would be determined on a case by case basis. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** The transformation of the nation's abandoned nuclear power plants into de facto waste facilities is worrisome from environmental, safety and national security standpoints. (CL-51/23)

**Response:** *Nuclear power plants will not be abandoned. NRC oversight at the facility will continue until the license terminated. There are two categories of uses for the facility after license termination: unrestricted use and restricted use. For sites that have been determined to be acceptable for unrestricted use, there are no requirements for further measurement of radiation levels. It is not expected that these radiation levels would change, other than to be reduced over time, because the radioactive material will have been removed from the site and there would be no mechanism for further contamination or radiological releases. For sites that have been determined to be acceptable for license termination under restricted conditions, additional measurements of radiation are only required for sites that have residual radioactivity between 1 and 5 mSv/yr (100 and 500 mrem/yr) to the average member of the critical group. These measurements are to be made by a responsible government entity or independent third party, including a governmental custodian of the site. The institutional controls remain in place as necessary to meet the criterion of 0.25 mSv/yr (25 mrem/yr) to an average member of the critical group (Section 2.2.2). The licensee is responsible to provide sufficient funds to carry out responsibilities for control and maintenance of the site (Section 2.2.2). The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** THERE NEVER SHOULD BE A LACK OF INSTITUTIONAL CONTROL EITHER. (CL-20/13)

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**Response:** *NRC has regulations in place to monitor sites until license termination. At that time, if the facility is categorized for restricted use, the institutional controls remain in place as necessary to meet the criterion of 0.25 mSv/yr (25 mrem/yr) to an average member of the critical group (Section 2.2.2). The licensee is responsible to provide sufficient funds to carry out responsibilities for control and maintenance of the site (Section 2.2.2). If it meets the criteria for unrestricted use, there are no required institutional controls. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** To enforce no liability after they leave is simply criminal. (CL-34/4)

**Comment:** The owner must remain fully liable. (CL-36/5)

**Response:** *The consideration of liability is outside the scope of this Supplement. However, termination of the NRC license does not eliminate the utility's liability. The criteria for license termination are discussed in Section 2.2.2. The comments did not provide new information relevant to this Supplement and will not be evaluated further. The comments did not result in a change to the Supplement.*

**Comment:** The federal government (the U.S. Atomic Energy Commission and its progeny) initiated and funded the promotion of nuclear power. How, then, can it walk away from the long-term surveillance of the plant sites, even though it will have declared the residual radioactive contamination to be at permissible levels? (CL-51/25)

**Response:** *The criteria for license termination are discussed in Section 2.2.2. For sites that have been determined to be acceptable for unrestricted use, there are no requirements for further measurement of radiation. For sites that have been determined to be acceptable for license termination under restricted conditions, additional measurements of radiation are required for sites that have residual radioactivity in excess of 1 mSv/yr (100 mrem/yr) but less than 5 mSv/yr (500 mrem/yr). These measurements are to be made by a responsible government entity or independent third party, including a governmental custodian of a site. The measurements are to be carried out no less frequently than every 5 years to ensure the institutional controls remain in place as necessary to meet the criterion of 0.25 mSv/yr (25 mrem/yr) to an average member of the critical group. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** In effect, the NRC plans to wash its hands of any responsibility for the long-term damage that may result from reactor decommissioning (and that of other nuclear licensee'

facilities and activities). It is the state or municipality and community in which a plant is located and the residents that will be required to bear the burdens of injury and costs of further clean-up after the NRC has vanished. (CL-52/11)

**Response:** *Compliance with the Radiological Release criteria found in 10 CFR Part 20, Subpart E, will result in protection of the public health and safety. Once the licensee can demonstrate that the Radiological Release Criteria will not be exceeded, no further cleanup is necessary. Therefore, the State or municipalities would not incur any additional costs. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

#### **O.4.9 Ownership**

**Comment:** [In addition to the economic gash in the GEIS portal, this fatally flawed document does not adequately address, acknowledge, account for, or compute a number of significant barriers related to radiological decommissioning; including:] Joint Ownership. (CL-02/9)

**Response:** *Joint ownership of a nuclear facility is not uncommon and is an outgrowth of anti-trust consideration. This comment relates to nuclear power facilities in general and is outside the scope of this Supplement. However, a number of power facilities undergoing decommissioning have joint owners and no significant problems in this arrangement have been identified. The decommissioning funds will be available for decommissioning a permanently shutdown reactor, regardless of ownership. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** The most disturbing and financially bizarre component of radiological decommissioning is the relationship between a "power reactor license" and the "minority power reactor licensee." Unlike "power reactor licensees," "fractional licensees" are not subjected or mandated by the Nuclear Regulatory Commission to empirically verify, report or monitor record keeping relating to nuclear decommissioning funding mechanisms. In some instances, even Public Utility Commissions lack the ability to mandate or regulate savings levels from "fractional licensees", e.g., Rural Electric Cooperatives. (CL-02/35)

**Response:** *Although the facility may be owned by multiple owners, the licensee is a single entity and is responsible for complying with the financial assurance requirements of 10 CFR 50.75. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*



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**Comment:** How will the facility licensee, in our case, Southern Nuclear, benefit from later sale of the nuclear plant's land to a new owner? Also, how will the land be tracked after it's deemed "safe" and the licensee sells it...especially in cases where there may be a leak or a release of radiation into the environment after the initial sale occurred? For instance, isn't it in the best financial interest of the licensee, in our case Southern Nuclear, to use the fastest and least expensive decommissioning option so that the license can be terminated and they can sell the land before deficiencies can be found in the manner in which a plant was decommissioned?  
(CL-08/28)

**Response:** *Once the license is terminated, the NRC has no regulatory authority over activities at the site, and the owner of the site is no longer subject to NRC regulations. If the condition of the facility at the time the license is terminated is such that the regulations allow the site to be available for unrestricted use, then there will not be any sources of radioactive contamination to result in a leak or significant release of radioactive material into the environment. The economic benefits to the utility after license termination are not within the scope of this Supplement. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** Since deregulation, numerous nuclear plants have changed hands. To "Cushion" the transition from regulated monopoly to competitive marketplace, many states allowed "electric utilities" to recover "stranded costs." Rate payers are saddled with paying for the industry's uneconomical investments, i.e., "stranded costs." Two of the most "bullish" nuclear corporations, Exelon and PPL, recovered over \$8.3 billion in "uneconomical investments." This figure does not include the millions in savings Exelon and PPL have accrued by unilaterally devaluing the combined PURTA and Real Estate tax assessments for their nuclear generating stations.

The Susquehanna Steam Electric Station is the most glaring example of a company "devaluing" their property at the expense of taxpayers, while billing the same hostage rate payer for uneconomical investments, and exposing this rate payer/taxpayer to further financial exposure related to the underfunding of nuclear decommissioning.

In the of Winter 1999-2000, PPL unilaterally devaluated the combined PURTA and Real Estate tax assessments for the SSES. Prior to the 1998 Joint Petition for Negotiated Settlement, the nuclear power generating units were assessed by PP&L at approximately \$1 billion. PPL now claims that the SSES is only worth \$74 million or the same amount as the valuation of the Columbia Hospital. Not only did the Berwick School District and Luzerne County experience revenue shock, but PPL refused to pay or escrow any monies they owed to Luzerne County and the Berwick School district while the case was being appealed.

PPL's behavior is all the more egregious in an era where nuclear plant's value on the open-market are equal to, or in excess, of fossil generating stations. For example, Entergy and Dominion resources engaged in a bidding war to purchase the Fitzpatrick and Indian Point 3 nuclear generating stations from the New York Power Authority (NYPA). The sale established a record high. (CL-02/32)

**Response:** *The Supplement provides an environmental assessment of the impacts associated with the decommissioning process. Discussions on the source of funds for the decommissioning trust fund are outside the scope of the GEIS. Furthermore, the comment relates to operating nuclear power facilities and not decommissioning facilities and is outside the scope of this Supplement. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** The General Accounting Office has slammed the NRC for its lack of oversight of transfers and mergers in the nuclear industry and had not verified that new owners would have guaranteed access to the decommissioning charges that their affiliated utilities would collect, in some cases, plus, a host of other safety and other issues were raised, all of which are troubling. The NRC must immediately address problems, and should demand that companies provide enough money for oversight - to include security staff, maintenance staff, nuclear engineers, radiation safety officers etc. - essentially forever. (CL-20/41)

**Response:** *In a letter dated March 1, 2002 (ML-020250068), the NRC responded to the GAO findings and elaborated on its programs and practices. The Supplement provides an environmental assessment of the impacts associated with the decommissioning process. Discussion of access to the decommissioning trust funds by new owners of facilities is outside the scope of the GEIS. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** Utility deregulation has put the ownership of these plants in hands that are not as responsible as they once were. Plymouth MA suffers financially because of the loss of tax revenue from the Pilgrim Plant - we cannot assume the additional risk these rules would place on us. (CL-25/3)

**Response:** *This comment relates to the power market and the effects of deregulation in general and is outside the scope of this Supplement. Licensees are required to satisfactorily maintain the decommissioning trust fund for the facility under the provisions of 10 CFR 50.755.*

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*They are required to periodically report the status of their trust fund to the NRC. The NRC has the responsibility to review the progress the licensee is making in fully funding the trust fund for decommissioning. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

### **O.4.10 Financial Assurance**

**Comment:** Second, we're concerned about the financial viability of the companies that own these sites. During a 60-year period, the companies may go bankrupt and that may leave the sites unaccounted for. We're also worried about the uncertainty associated with the cost of disposing radioactive material later. We understand that safe store is preferred because of lower costs later, but because of Yucca Mountain and other uncertainties about disposal, we're concerned about those hanging costs. **(CH-A/6)**

**Comment:** But what happens to a facility that shuts down prematurely and they haven't actually collected sufficient funds for what's necessary for decommissioning and then, they go bankrupt? And that situation still poses a risk. **(CH-A/15)**

**Comment:** Does any one of sound mind or body residing within the Commission really think that a nuclear power plant can be radiologically decommissioned if the funding is inadequate and the plant is prematurely shut down? **(CL-02/12)**

**Comment:** Prematurely shutdown reactors place an additional financial strain on the licensee. **(CL-02/42)**

**Comment:** There's a financial assurance gap here, I feel, and this has been mentioned several times tonight. I'll say two syllables—Enron....And I could be wrong about this but I thought the money was somewhat linked to the rate base and all these plants are not operating for their design life. And so I'm real concerned that the fund was never—the goal was never set correctly to begin with and that we would fall short on raising the money, it may not be enough....Is there assurance or something for a corporation a couple of generations removed from the corporation that actually originally licensed and built the plant? **(AT-G/3)**

**Response:** *If a facility shuts down prematurely before the decommissioning trust is fully funded, or if it unexpectedly finds itself having to shift to a more costly decommissioning option, the facility license holder is still obligated to fund the entire cost of decommissioning. Most power generators are diversified and are able to continue to add funds to their decommissioning trust fund. To date, none of the license holders of prematurely shutdown power reactor facilities have defaulted on their decommissioning funding obligation. Bankruptcy does not necessarily mean that a power reactor licensee will liquidate. To date, the NRC's experience with bankrupt power reactor licensees has been that they file under Chapter 11 of*

*the Bankruptcy Code for reorganization, not liquidation (for example, Public Service Company of New Hampshire, El Paso Electric Company, and Cajun Electric Cooperative). In these cases, bankrupt licensees have continued to provide adequate funds for safe operation and decommissioning, even as bondholders and stockholders suffered losses that were often severe. Because electric utilities typically provide an essential service in an exclusive franchise area, the NRC staff believes that, even in the unlikely case of a power reactor licensee liquidating, its service territory and obligations, including those for decommissioning, would revert to another entity without direct NRC intervention. The comments did not provide new information relevant to this Supplement and will not be evaluated further. The comments did not result in a change to the Supplement.*

**Comment:** However, the Nuclear Regulatory Commission has steadfastly refused to address the fundamental problem that has created and perpetrated financial gaps between “target” (2) decommissioning funding and actual assets on hand to complete radiological decommissioning (3). In fact, the Commission has no statutory authority to compel “electric utilities” to physically raise, maintain, secure and account for radiological decommissioning funding. The NRC can authorize and mandate a preferred “mode of decommissioning”, but the Commission lacks the ability to ensure the existence of adequate funding levels. i.e. accretible external sinking funds.

The NRC’s GENERIC Environmental IMPACT STATEMENT (GEIS) on DECOMMISSIONING of NUCLEAR FACILITIES-NUREG-0588: DRAFT SUPPLEMENT DEALING WITH DECOMMISSIONING of NUCLEAR POWER REACTORS does not adequately factor the financial disconnect between NRC “Funding targets” and actual and realized funding pools accrued by “electric utilities.” Moreover, there remains a chronic shortfall between “targeted” funding levels and actual costs for nuclear decommissioning. (4) (CL-02/2)

**Comment:** The GEIS failed to address the issue of nuclear plant “devaluation” and revenue shock. (CL-02/33)

**Response:** *While the process for decommissioning nuclear power facilities is now well established, the cost of decommissioning varies from one nuclear facility to the next. The variability is due to the major factors listed in the Supplement (Section 4.3.11.2). Cost estimates (at the time of licensing, 5 years before anticipated shutdown, with the Post-Shutdown Decommissioning Activities Report submittal, 2 years following shutdown, and 2 years preceding the anticipated termination of the license) are site-specific, and provide a method of re-evaluating the decommissioning costs at various times and stages in each facility’s life. The regulations to ensure the availability of decommissioning funds were originally established in 1988, and site-specific decommissioning cost estimates are required as provided in 10 CFR 50.75 and 10 CFR 50.82. Failure to comply with NRC regulations is a violation of the facility license and the NRC could take enforcement action to compel the licensee to comply*

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*with the provisions of 10 CFR 50.7. The comments did not provide new information relevant to this Supplement and will not be evaluated further. The comments did not result in a change to the Supplement.*

**Comment:** Funding targets to bring a site back to "Greenfield" are set by the Nuclear Regulatory Commission and do not include spent fuel disposal or non-radiological decommissioning. However, the NRC has no rate making authority and electric utilities must go before state utility commissions to recover funding levels "suggested" by the NRC. But the Companies are not mandated by the federal government to submit detailed funding plans until two years prior to site closure. In addition, if a utility has been saving for DECON, but SAFSTOR is necessitated, the funding package becomes grossly inadequate. (CL-02/39)

**Response:** *Radiological decommissioning activities continue until the licensee requests termination of the license and demonstrates that radioactive material has been removed to levels that permit termination of the NRC license. Once the NRC determines that the decommissioning is completed, the license is terminated. At that point, the NRC no longer has regulatory authority over the site, and the owner of the site is no longer subject to NRC authority. As a result, activities performed after license termination (to meet other requirements, e.g., additional state requirements such as additional radiological decontamination, removal of structures, site grading, etc.), and the resulting impacts are outside the scope of this Supplement. These activities may include site restoration. The return of the site to Greenfield conditions is specifically stated to be out of scope of the Supplement (Section 1.3, "Scope"). Experience to date has shown that licensees have been able to change decommissioning options (such as DECON to SAFSTOR) without significant financial difficulties. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** As of this filing, no commercial nuclear power plant has been decommissioned, decontaminated, and returned to free-release. Nuclear decontamination and decommissioning technologies are in their infancy and several identifiable industrial trends are apparent when reviewing the Nuclear Regulatory Commission's treatment of prematurely shutdown reactors: There is a reluctance to undertake, initiate or finance decommissioning research. (CL-02/41)

**Response:** *The statement is not true; two commercial nuclear power plants (Shoreham and Ft. St. Vrain) have been decontaminated and decommissioned and the sites released for unrestricted access. The U.S. Department of Energy (DOE) has funded significant decommissioning-related research over the past 10 years. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** Georgians for Clean Energy does not believe that the GEIS adequately addresses decommissioning costs. Though assurances were made at the public meeting in Atlanta that decommissioning funds are adequate, real-world examples have proved otherwise. For instance, in the current world of mega-mergers of electric utilities and sudden dissolution of energy giants such as Enron, there is little guarantee in place that companies will be able to pay for the full costs of decommissioning. Additionally, we are concerned that the method of decommissioning a nuclear power plant is determined more by the cost implications to the licensee than the overall ramifications of leaving a contaminated site for the local communities. (CL-08/10)

**Response:** *NRC staff would not speculate on how the financial collapse of one corporation affects the financial soundness of power generators as a whole. There is, in fact, reasonable assurance that utilities will have the resources to fund decommissioning. Industry experience to date has not revealed problems in securing adequate funds in the decommissioning trust fund to complete decommissioning. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** Furthermore, a report issued this December by the U.S. Government Accounting Office, "NRC's Assurances of Decommissioning Funding During Utility Restructuring Could Be Improved--GAO-02-48," brings to light many concerns about the lack of adequate funding available for decommissioning activities. The following statement by the GAO makes it apparent that the NRC needs to improve, "However, when new owners proposed to continue relying on periodic deposits to external sinking funds, NRC's reviews were not always rigorous enough to ensure that decommissioning funds would be adequate. Moreover, NRC did not always adequately verify the new owners' financial qualifications to safely own and operate the plants. Accordingly, GAO is making a recommendation to ensure a more consistent review process for license transfer requests." (CL-08/12)

**Comment:** Georgians for Clean Energy requests that this extensive report be thoroughly reviewed by the NRC staff, be printed in its entirety as an appendix in the final GEIS as the report did not come out before the draft GEIS was issued, and that the recommendations by the GAO be studied and incorporated into the final GEIS. Additionally, the public participation process should be extended to allow for proper review of this important report. (CL-08/13)

**Comment:** Additionally, ownership of nuclear facilities has changed for more than half of the nuclear power plants in the United States through mergers and transfers. This shuffling of ownership has raised much uncertainty about the availability of adequate funds for the eventual decommissioning of the nuclear facilities. As reported by GAO December 2001 "NRC's Assurances of Decommissioning Funding During Utility Restructuring Could Be Improved" NRC reviews of financial arrangements exchanged in these transfers and mergers "were not always

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rigorous enough to ensure that decommissioning funds would be adequate. Moreover, NRC did not always adequately verify the new owners' financial qualifications to safely own and operate the plants." (CL-48/23)

**Response:** *In a letter dated March 1, 2002 (ML-020250068), the NRC responded to the GAO findings and elaborated on its programs and practices related to licensee financial qualifications and decommissioning funding assurance. Based on the industry experience to date and the decommissioning funding requirements in 10 CFR 50.75, the NRC staff has no reason to believe that the decommissioning trust funds are inadequate. The comments did not provide new information relevant to this Supplement and will not be evaluated further. The comments did not result in a change to the Supplement.*

**Comment:** The NRC needs to pay attention to decommissioning costs proposed by Georgia nuclear utilities during rate cases and other proceedings so there is not a situation created where much needed monitoring and maintenance is ignored simply because there was no regulatory attention to the real cost of decommissioning. (CL-08/16)

**Response:** *Decommissioning activities continue until the licensee requests termination of the license and demonstrates that radioactive material has been removed to levels that permit termination of the NRC license. Once the NRC determines that the decommissioning is completed, the license is terminated. At that point, the NRC no longer has regulatory authority over the site, and the owner of the site is no longer subject to NRC authority. As a result, activities performed after license termination (to meet other requirements, e.g., additional state requirements, not subject to NRC authority) and the resulting impacts are outside the scope of this Supplement. These activities may include any other than NRC-required monitoring, including site restoration. The return of the site to Greenfield conditions is specifically stated to be outside the scope of this Supplement (Section 1.3, "Scope"). Most power generators are diversified and are able to be flexible in case of a change in plans (such as a change in decommissioning method). The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** How is the funding of decommissioning costs guaranteed to be met by a company in a day and age where gigantic utility companies can collapse at any moment, as has recently happened with Enron? (CL-08/29)

**Response:** *NRC staff would not speculate on how the financial collapse of one corporation affects the financial soundness of power generators as a whole. There is, in fact, reasonable assurance that utilities will have the resources to fund decommissioning. Furthermore, the decommissioning trust fund is specifically set up to prevent licensees from accessing the fund for money other than for decommissioning. To date, none of the license holders of prematurely*

shutdown facilities have defaulted on their decommissioning funding obligation. Bankruptcy does not necessarily mean that a power reactor licensee will liquidate. To date, the NRC's experience with bankrupt power reactor licensees has been that they file under Chapter 11 of the Bankruptcy Code for reorganization, not liquidation (for example, Public Service Company of New Hampshire, El Paso Electric Company, and Cajun Electric Cooperative). In these cases, bankrupt licensees have continued to provide adequate funds for safe operation and decommissioning, even as bondholders and stockholders suffered losses that were often severe. Because electric utilities typically provide an essential service in an exclusive franchise area, the NRC staff believes that, even in the unlikely case of a power reactor licensee liquidating, its service territory and obligations, including those for decommissioning, would revert to another entity without direct NRC intervention. Additionally, an NRC licensed facility undergoing decommissioning or a site that is not under license but is undergoing decommissioning under NRC's regulation also warrant remediation under CERCLA as a Superfund site. These statutory provisions might become particularly relevant at sites for which funding is inadequate for cleanup. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.

**Comment:** As a result of electric utility deregulation where a competitive market has replaced regulated rates, traditional methods of amassing decommissioning funds through imbedded utility rates have been replaced with by competitive electricity rates. (CL-48/22)

**Comment:** Costs: Because of current efforts to restructure and deregulate the electric power industry, decisions about decommissioning could be driven by economic considerations, not by safety - by efforts to cut costs in order to stay competitive. I believe the electric utilities should not be relieved of liability for their decommissioned reactors. (CL-51/19)

**Response:** The NRC has published a final policy statement in the Federal Register (62 FR 44071) regarding the adequacy of decommissioning funds. Because of deregulation in the power market, some licensees would cease being an "electric utility," as defined in NRC regulations. Should this occur, periodic deposits to an external sinking fund would no longer be allowed; rather, the NRC requires that a licensee provide funding assurance for the full estimated cost of decommissioning, either through full up-front funding or by some allowable guarantee or surety mechanism. Deregulation would not invalidate the license; as a result, the licensee will still be liable for the safe and complete decommissioning of their facilities. The comments did not provide new information relevant to this Supplement and will not be evaluated further. The comments did not result in a change to the Supplement.

**Comment:** Objective empirical data clearly demonstrate that the majority of commercial nuclear power plants will not operate through their planned operating life of forty years (40). While the power reactor licensees are entitled to recover a portion of decommissioning funding



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through the rate, they are not entitled to a full and complete rebate on “stranded investments”, and shortfalls that will certainly arise due to the under funding of nuclear decommissioning “funding targets.” Shareholders and Board Members of electric utilities and Rural Electric Cooperatives (REC) must assume responsibility for their business decisions. These aforementioned entities aggressively sought to license, construct, and operate nuclear power plants. To allow artificial definitions concerning ownership of nuclear generating stations to insulate those who cogently made capital investments is immoral, unethical, and an endorsement of corporate socialism. That is, shareholders profit from imprudent investment decisions and are accorded relief when error of mismanagement becomes manifest. The Pennsylvania Public Utility Commission cited Nuclear Regulatory Commission guidelines that suggested five criteria for evaluating alternative financing mechanisms for nuclear decommissioning. One of the components of was titled “Intergenerational equity - that the cost of decommissioning be spread equitably to all rate payers throughout the life of the facility.” Unless a more equitable funding formula for nuclear decommissioning is established, rate payers and taxpayers who received little or no direct electrical benefit from nuclear generating, will be financially exposed. The nuclear industry must assume responsibility for their investment strategies. Creating and perpetuating intergenerational debt is reckless and fundamentally inequitable and undemocratic. Future generations may be exposed to gross rate payer inequity if adequate decommissioning funding based on realistic estimates (and not “funding targets”) are not assured. The solution should not be a financial safety net provided by hostage rate payers and taxpayers excluded from internal corporate decision making. “Electric utilities” must assume financial responsibility for their decisions to invest in nuclear power which necessarily means the shareholder should bear a substantial portion of post-deregulation decommissioning expenses. Clearly, a formula must be established that recognizes rate payer and taxpayer equity for the realized service that power reactor licensees provide. It is time for the Nuclear Regulatory Commission to recognize, through its Environmental Impact Statements, that consumers and taxpayers are human beings and not abstract, hypothetical billing invoices. (CL-02/31)

**Response:** *The missions of the NRC include the protection of public health and safety, and protection of the environment. NRC requirements established a framework to ensure that decommissioning of all nuclear reactor facilities will be accomplished in a safe and timely manner, and that adequate funding will be available for this purpose. NRC does not prescribe how the funds are to be raised. The license holder for the facility funds decommissioning costs. Equitability of investment decisions is outside the scope of this Supplement. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** Second, we are concerned that over the course of 60 years, the ownership of nuclear plants, financial status of licensees, and decommissioning obligations for many plants could change; if companies have not operated the facility long enough to accrue sufficient funds

for decommissioning, and then go into an extended SAFSTOR period, bankruptcy of the facility owner could jeopardize cleanup at the site. The extended time of storage combined with reduced staffing associated with SAFSTOR could mean that these sites are more likely to be subject to accident, theft of equipment, or attack. (CL-11/10)

**Response:** *If a facility shuts down prematurely before the decommissioning trust is fully funded, or if it unexpectedly finds itself having to shift to a more costly decommissioning option, the facility license holder is still obligated to fund the entire cost of decommissioning. To date, none of the license holders of prematurely shutdown facilities have defaulted on their decommissioning funding obligation. Bankruptcy does not necessarily mean that a power reactor licensee will liquidate. To date, the NRC's experience with bankrupt power reactor licensees has been that they file under Chapter 11 of the Bankruptcy Code for reorganization, not liquidation (for example, Public Service Company of New Hampshire, El Paso Electric Company, and Cajun Electric Cooperative). In these cases, bankrupt licensees have continued to provide adequate funds for safe operation and decommissioning, even as bondholders and stockholders suffered losses that were often severe. Because electric utilities typically provide an essential service in an exclusive franchise area, the NRC staff believes that, even in the unlikely case of a power reactor licensee liquidating, its service territory and obligations, including those for decommissioning, would revert to another entity without direct NRC intervention. Additionally, an NRC-licensed facility undergoing decommissioning or a site that is not under license but is undergoing decommissioning under NRC's regulations also warrant remediation under CERCLA as a Superfund site. These statutory provisions might become particularly relevant at sites for which funding is inadequate for cleanup. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

## **O.5 NEPA-Related Issues**

### **O.5.1 Process for Developing the GEIS**

**Comment:** What consideration was given to the location of the facility as a variable in determining? (CH-B/3)

**Response:** *Location of the facility (on the ocean, a lake, a river, etc.) was one of the variables used to determine the potential environmental impacts from decommissioning activities. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** I don't know if site location was included in as an Other in the variable. I'd be interested in what kind of depth of analysis went into that if it was a variable that was considered. (CH-B/4)

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**Response:** *Location of the facility (on the ocean, a lake, a river, etc.) was one of the variables used to determine the potential environmental impacts from decommissioning activities. Data from sites located on the Great Lakes, the Atlantic and Pacific Oceans; as well as plants located on rivers were used in evaluating the impacts from decommissioning facilities. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** I recommend highly that in the future efforts of this sort, the communications to get information about specific plants be with those specific plants or otherwise actions be taken to ensure that all plants are covered. (CH-D/12)

**Response:** *The staff agrees that in many instances direct contact with the licensees yields the most accurate and current information. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** I understand that Elk River is the only United States commercial reactor that has been completely dismantled down to its original greenfield state. It so completely disappeared, in fact, that it is not even mentioned in the "Draft Supplement," in the tables of "permanently shutdown plants" (for example, as pages 3-27, 4-44, and Table F-1. (CL-51/5)

**Response:** *The Elk River Reactor was not regulated by the NRC. Elk River was not a commercial reactor and not attached to the electric power grid. It was a 58 megawatt (thermal), boiling water reactor that was owned and operated by the Atomic Energy Commission as part of the demonstration reactor program project. Therefore, it was not included in the permanently shutdown reactors considered in this Supplement. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

### **O.5.2 Public Meetings and Public Participation**

**Comment:** I am opposed to the following change to NUREG-0586: In Supplement 1 to the Generic Environmental Impact Statement on Decommissioning: NRC redefines terms to avoid local, site-specific opportunity to question, challenge and prevent unsafe decommissioning decisions. (CL-43/9)

**Comment:** I am opposed to the following change to NUREG-0586: In Supplement 1 to the Generic Environmental Impact Statement on Decommissioning: NRC is attempting, with this supplement, to legally justify the removal of the existing opportunities for community

involvement and for legal public intervention until after the bulk of the decommissioning has been completed. This includes such activities as flushing, cutting, hauling and possible rubblelizing of the reactor. (CL-43/12)

**Comment:** While the 9/11 events may call for some more secrecy, in most cases it's a matter of "closing the gates long after the horses are gone." Instead you should adopt a policy of allowing more public participation to ensure public confidence in your process! (CL-27/2)

**Comment:** I would like to start out by addressing the process and how it limits the ability for the public to effectively participate in this and other nuclear-related issues that impact Georgia communities. The technical nature of the issues and an ongoing resistance by nuclear regulators to share accurate information about nuclear threats has always made it difficult for the public to be involved in decision-making involving nuclear energy issues. (AT-A/2)

**Comment:** We have some grave concerns about the process....There is a real problem, I think, with public knowledge about the opportunities for input into NRC's decision making. (AT-B/5)

**Comment:** My executive director asked me to express our concern for we want this process to be transparent. Allow public accessibility to the process, knowledge of the standards. Do no harm. We represent physicians who take the Hippocratic Oath. Take no risks that can be avoided. It seems ridiculous to come in here and say to professionals "be careful." But Adele quoted the too-cheap-to-be-metered promise and there's some credibility problems, so be careful. (AT-H/1)

**Comment:** As I noted at the time, I am concerned about the silence of the draft supplement on public participation in the decommissioning process. Commenters raised these concerns 18 months ago, but the draft supplement does not seem to address them. (CL-12/1)

**Comment:** As I read the supplement, its effect will be to predetermine a number of issues about decommissioning of all public-utility power reactors. This will remove those issues from examination in trial-type proceedings, where licensees' evidence or the NRC's assumptions and conclusions could be tested and exposed to public scrutiny. (CL-12/2)

**Comment:** Unless the public is allowed to intervene in decommissioning proceedings and participate fully in those proceedings, it cannot be certain that trustworthy decisions will result. Your 1996 brochure Public Involvement in the Nuclear Regulatory Process, NUREG/BR-0215, assures us that "the public has an opportunity to participate in NRC's decision making process to decommission a facility." Public participation short of party-intervener status and review of

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| less than all issues relevant to each plant seems to me a recipe for inadequate decision  
| making. If your agency restricts review, I believe you will be reneging on your promises to the  
| public, as well as violating NRC's laws and regulations and the Administrative Procedure Act.  
| (CL-12/3)

| **Comment:** I am opposed to the following proposal(s) in the EIS: NRC redefines terms to avoid  
| local, site-specific opportunity to question, challenge and prevent unsafe decommissioning  
| decisions. (CL-26/11)

| **Comment:** I also utterly oppose redefining terms to avoid local, site-specific opportunity to  
| question, challenge, and prevent unsafe decommissioning decisions. (CL-33/15)

| **Comment:** I also utterly oppose attempting to legally justify the removal of the existing  
| opportunities for community involvement and for legal public intervention until activities such as  
| flushing, cutting, hauling, and possibly rubblizing of the reactor are complete—in other words,  
| until the damage has irretrievably been done. (CL-33/18)

| **Comment:** Please increase, rather than decrease, public participation in every single aspect of  
| the planning, building, and running of Nuclear Power Plants. Please do this even if you don't  
| want to. The public, to you, may seem like a thorn in your side, something that gets in the way  
| of your plans. But a democratic government should not seek to shut their people out of  
| decisions that effect their lives. It is a very sad reflection on the state of our democracy that this  
| seems to be precisely the aim of your draft regulations. Don't you believe in democracy? Are  
| you tired of playing by democratic rules if it means you can't win each and every time? Is  
| democracy too inconvenient for you? If you were busy doing the "right thing" you would be  
| excited and proud to open your process to the public. If you were involved in an honest  
| process, you would be eager to engage your opponents in debate about it. You would not have  
| to stack the deck, hide your process, shut the people out. Shame on you! See if you have the  
| courage to do the right thing! --- And have the courtesy not to send one of those dummy  
| automatic replies! (CL-35/1)

| **Comment:** In keeping with appropriate medical and public policy principles, we urge total  
| transparency. United States citizens deserve nothing less than total transparency. (CL-46/1)

| **Comment:** We urge that the Commission always lead it's interactions with the public at large  
| by being fully open and informative about the potential dangers, the expense and the limited  
| experience we as a nation have with the decommissioning of nuclear reactors. (CL-46/2)

| **Comment:** Any and all decommissioning activities should be performed methodically and with  
| great caution, ensuring that the public is appropriately involved in the processes and thoroughly  
| protected from dangers every step of the way. (CL-47/4)

**Comment:** Further, this move runs counter to NRC's "Openness" Principle of Good Regulation, wherein "Nuclear regulation is the public's business, and it must be transacted publicly and candidly. The public must be informed about and have the opportunity to participate in the regulatory processes\*" and to NRC's Organizational Value of "Service to the public, and others who are affected by our work." (both found at <http://www.nrc.gov/who-we-are/values.html>) (CL-47/12)

**Comment:** We're concerned that the use of the proceeding may be used to eliminate site-specific evaluation of local concerns. And our concern is the right of local residents will be preempted from raising concerns during the license termination plan review. (SF-D/1)

**Comment:** The elimination of sub part M hearings coupled with the instituting of sub part L further inhibits public participation and is a violation of citizens constitutional rights guaranteed under section 189a of the Atomic Energy Act. (CL-50/8)

**Comment:** The PSDAR skirts accountability and obstructs required public participation. The PSDAR does not require a clear description of the methodologies so that the public can understand what will be taking place during decommissioning. Only with a sufficiently detailed plan, can the public meaningfully research, investigate, formulate comments and questions, and possible objections to the decommissioning activities. A meeting does not afford citizens the level of institutional accountability necessary given the dangers of environ-toxic contamination inherent in the reactor cessation. Informational meetings, as experienced at Yankee Rowe, CT Yankee, Maine Yankee, and Millstone Unit 1 obfuscated, confused, and ignored the concerns of local citizens. Both the Federal District Court and the Appellate Court chastised the agency for this approach. If the community has concerns, and there is no regulatory recourse save one "meeting" with NRC, the Commission will, in fact, create polarization between the community and regulator leading to erosion of public confidence in the NRC. (CL-50/9)

**Comment:** Increasingly, no forum is available to citizens in which to exercise their rights under the Federal Administrative Procedure Act. This is yet another reason that this Supplement is unacceptable and should be withdrawn. (CL-52/7)

**Comment:** These denials of access to the judicial system are currently being extended in the form of NRC's proposed Rule, "Change of Adjudicatory Process," compounding the illegalities inherent in this Supplement. (CL-52/6)

**Comment:** The NRC claims the agency and the industry have accumulated substantial decommissioning experience and that this is justification for hastening the generic treatment of

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| Environmental Impact Statements. In effect, this eliminates meaningful public involvement in  
| site-specific reviews and prevents the necessary full disclosure of nuclear facility contamination  
| and decommissioning practices. (CL-48/4)

| **Comment:** Why, in this same democracy that we hold up so proudly to the world, does the  
| NRC seek to prevent public comment on the basic issue of public health in a nuclear world?  
| (CL-36/1)

| **Comment:** Please consider my opposition to many of the proposed Supplements. The public  
| should not be further shut out of the decommissioning process. Nuclear waste is deadly and  
| it's handling should not be downgraded in any way. (CL-43/16)

| **Comment:** I am opposed to the following proposal(s) in the EIS: NRC is attempting, with this  
| supplement, to legally justify the removal of the existing opportunities for community  
| involvement and for legal public intervention until after the bulk of the decommissioning has  
| been completed. This includes such activities as flushing, cutting, hauling and possibly  
| rubblizing of the reactor. (CL-26/14)

| **Comment:** CWAA supports the comments of NIRS, Public Citizen and the Critical Mass  
| Energy Project. We concur with these organizations that changes in the supplement designed  
| to limit citizen's opportunities to review or challenge decommissioning projects are  
| undemocratic and ill advised. It is imprudent to reduce public oversight of these projects, no  
| matter how much more convenient it seems. (CL-45/1)

| **Comment:** Alternative methods being considered by the NRC include "entombment" and  
| "rubblization." These involve leaving more nuclear waste onsite in an effort to reduce industry's  
| short-term decommissioning costs but are likely to increase long-term costs to affected  
| communities once the sites are abandoned after license termination. The proposed alternative  
| methods additionally raise significant technical and environmental impact issues and conflicts  
| with the permanent emplacement of so-called "low-level" radioactive waste at nuclear facility  
| sites not originally licensed as regulated nuclear waste management facilities. The proposed  
| alternative methods are tantamount to creating an unlicensed radioactive waste disposal site.  
| These alternative methods must therefore be subject to review by the affected communities  
| with full disclosure and documentation of the amount of radioactivity, the location and condition  
| of all residual contamination and the types of radioactive contamination that remain onsite. On-  
| site and offsite contamination and radioactivity and associated issues involved with extended  
| institutional control must all be subject to site-specific public hearings. (CL-48/27)

| **Comment:** NRC redefines terms to avoid local, site-specific opportunity to question, challenge  
| and prevent unsafe decommissioning decisions. (CL-48/44)

**Comment:** NRC is attempting, with this supplement, to legally justify the removal of the existing opportunities for community involvement and for legal public intervention until after the bulk of the decommissioning has been completed. This includes such activities as flushing, cutting, hauling, and possibly rubblizing of the reactor. (CL-48/47)

**Response:** *The Supplement provides an environmental analysis of the impacts associated with the decommissioning process for power reactors. Comments pertaining to the decommissioning process for power reactors as prescribed by 10 CFR 50.82 are outside the scope of this Supplement. The current regulations were published on July 29, 1996 as part of a comprehensive rulemaking effort related to power reactor decommissioning. The NRC revised its regulations by the Commission's notice and comment rulemaking process.*

*Section 2.2 of the GEIS describes the regulatory aspects of the decommissioning process as specified by 10 CFR 50.82, including the options for public participation. In addition to public meetings, the public has certain adjudicatory opportunities that are outlined in NRC regulations at 10 CFR Part 2, "Rules of Practice for Domestic Licensing Proceedings and Issuance of Orders." If the licensee has requested an action requiring a license amendment, then the process for intervening in this action is by requesting or participating in a hearing. For decommissioning reactors, the process will usually follow the regulations in 10 CFR Part 2, Subpart L, "Informal Hearing Procedures for Adjudications in Materials and Operator Licensing Proceedings" (depending on the timing of the request, the process may follow the regulations in 10 CFR Part 2, Subpart A). If the action of concern does not involve a license amendment, then any member of the public may raise potential health and safety issues in a petition to the NRC to take specific enforcement action against a licensed facility. This provision is contained in the NRC's regulations and is often referred to as a "2.206 petition" in reference to its location in the regulations (Chapter 2, Section 206 of 10 CFR). Licensees are permitted to perform activities allowed under their licenses. The comments did not provide new information relevant to this Supplement and will not be evaluated further. The comments did not result in a change to the Supplement.*

**Comment:** After the tragic events of September 11, this problem has escalated to a point where our organization believes it is highly irresponsible of our Federal government to go forward with making crucial decisions that will affect generations and generations to come. The NRC's Web site, as many of you know, was not available for a time and is currently severely scaled back, making public access to important background information very difficult or impossible. I have spoken with representatives of the U.S. Nuclear Regulatory Commission, and they have echoed some of my concerns as they, too, have difficulty gaining information on nuclear industry activity. If people like myself who have the ability to research these issues on a full-time basis along with staff members of the regulatory agencies are having a hard time, imagine the fate of a concerned citizen who has limited time to devote....For citizens concerned about issues at Plant Hatch in south Georgia, unless they have a hard copy of the relicensing



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documents, it is difficult for them to look up concerns that would be relevant to today's meeting because those relicensing documents are no longer available online. We did have a link to it on our Web site, but you know, we all know it's not working. (AT-A/3)

**Comment:** Georgians for Clean Energy remains concerned about the ability for the public to effectively participate in this and other nuclear related issues that impact Georgia's communities. Due to the tragic events of September 11th the Nuclear Regulatory Agency's (NRC) Web site was not available for a time and is currently severely scaled back, making public access to important background information very difficult or impossible. (CL-08/1)

**Comment:** SLOMP is troubled by the inability of the public to have adequate access to the NRC Web site. Prior to the censorship, the existence of the Web site had been viewed as a giant step forward in communication between the public and the Commission. (CL-53/1)

**Comment:** Given the difficulty in accessing thorough and accurate information, including potentially relevant material such as the relicensing documents on Plant Hatch in South Georgia, we feel it is important to both extend the public comment period until these documents can be made readily available and to provide more meeting locations to adequately gather public comments. Since nuclear reactors will eventually be decommissioned in many states the public should be given more than just four locations nationwide to voice their concerns. Public meetings should also be held in communities neighboring currently existing nuclear power plants. (CL-08/2)

**Comment:** Moreover, the NRC's public notice, as an example, that went out on November 2 of this meeting, contained an inaccurate link to the public electronic reading room.... Well, for a lot of people that got that link, that's all they'll do, they'll go to that link and it doesn't work and they think they don't know how to use their computer and then they just go home. So again, the accuracy of information that's going out right now, we have to be very aware of when there are mistakes made. (AT-A/5)

**Response:** *The NRC realizes that the Web site was not available to the public for a period of time following September 11, 2001, and has taken prudent steps to make important information available to the public as soon as practicable. The staff extended the comment period for an additional 30 days until January 31, 2002, in part, to provide additional time for members of the public to review appropriate documents relating to decommissioning. Currently, the NRC website has been re-established and the public has access to a large amount of information via the Internet. The subject of license renewal is outside the scope of this Supplement. However, if individuals have questions related to license renewal they should contact the project manager*

*of the plant of interest. The NRC website can direct an individual member of the public to the NRC point of contact. The comments did not provide new information relevant to this Supplement and will not be evaluated further. The comments did not result in a change to the Supplement.*

**Comment:** It is essential to provide more meeting locations to gather public comments. Four locations is not enough, given that we have nuclear reactors that will eventually be decommissioned in many states and the public, as I've said, has had difficulty accessing the information...have more meetings. (AT-A/7)

**Comment:** Once again, that's where having other meetings outside of the area could gather some useful information that may have been missed; and maybe site-specific, that wasn't addressed earlier. (AT-A/20)

**Comment:** Thank you for holding these meetings in four locations around the country, and for encouraging public participation. (CL-10/12)

**Comment:** I'd like to invite you to come to Charlotte. We could, I think, fill up a hearing room so that you could hear from the citizens who are directly affected by your decision making that is on going. (AT-B/13)

**Comment:** Both the NRC and taxpayers would have been better served by sending the draft GEIS to all individuals and groups that have demonstrated interest in safety issues at nuclear plants over the last two decades, with a questionnaire, a comment section, and a self-addressed, stamped envelope. (CL-53/6)

**Response:** *The meeting locations were chosen to provide convenient locations across the country and in each NRC region. The NRC staff identified public interest groups and concerned citizens in the vicinity of all 22 power reactors undergoing decommissioning. Copies of the Draft Supplement were provided to all identified personnel and organizations. Additionally, the NRC and EPA published Federal Register notices identifying the availability of the Draft Supplement. The NRC included the Draft Supplement on the NRC's Web site, issued a press release, and made it available to members of the public through the electronic reading room. Finally, any member of the public seeking to gain a copy of the draft was provided a copy at no charge. In response to concerns expressed by members of the public, the NRC staff extended the public comment period again allowing additional public input. The comments did not provide new information relevant to this Supplement and will not be evaluated further. The comments did not result in a change to the Supplement.*

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**Comment:** The GEIS needs to create a chronological list of all the decommissioning activities that accept public participation. All public participation opportunities such as meetings, hearings, oral comments, written comments, petitions, and interventions need to be listed. At later times when specific dates are known, this list needs to be advertised locally in the affected area. The licensee should also solicit public input on the formulation of decommissioning plans well before the decisions are made. (CL-14/7)

**Response:** Section 2.2.1 of this Supplement provides a detailed discussion of the decommissioning process and regulations. Additionally, 10 CFR 50.82 describes the process necessary to decommission a facility and identifies instances when public participation is afforded. Also, within two to three months of the licensee's announcement of permanently ceasing operation, the NRC staff holds a public meeting in the vicinity of the plant to describe in detail the decommissioning process. At that time the opportunities for public input are identified. NUREG-1628, "Staff Responses to Frequently Asked Questions Concerning Decommissioning of Nuclear Power Plants," provides a discussion on when and how the public can participate. Copies of the document can be obtained from the NRC Staff. Based on the above sources of information no additional listing of activities that accept public participation is necessary. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.

**Comment:** The public has not only the "right to know", but NRC and the industry has the duty to fully disclose all related impacts, short and long-term, on and offsite, direct and indirect, as well as cumulative effects resulting from decommissioning to citizens and members of the public living in local communities surrounding the nuclear plants. (CL-44/15)

**Response:** The NRC staff examined the impacts of decommissioning activities at NRC-licensed nuclear power facilities for cumulative, short- and long-term, onsite and offsite, direct and indirect impacts. This analysis is contained in Section 4.0 of the document. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.

**Comment:** NIRS reiterates and incorporates our previous comments and fundamental disputes with regard to the decommissioning GEIS as submitted in formal comments to NRC on July 11, 13 and 14, 2000. Our organizations request that NRC include with this submission all of our organizations' previous comments on this and related rulemakings (including but not limited to the environmental procedures on BRC and those that led to the development of 10 CFR 20 section E, the License Termination Rule). (CL-48/1)

**Response:** The comments that were received during the scoping process that are within the scope of this document are discussed in Appendix A of the Supplement. Because the scope of this document, as described in Section 1.3, does not include Below Regulatory Concern issues

*or the License Termination process or related rulemakings; they are outside the scope and not addressed in the Supplement. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** The NRC gave 10 individuals representing 10 different environmental groups only 5 minutes each to express their concerns. Furthermore, it is outrageous that the NRC located these proceedings hundreds of miles from the affected communities-and those who are most concerned about the decommissioning of nuclear plants. (CL-53/5)

**Response:** *At each public meeting, the public is asked to sign up for 5-minute time slots at the beginning of the meeting to ensure that everyone has the opportunity to comment. After these comments are received the remaining time is allocated for further public comment, either from those who did not sign up or for those who wished to express additional comments.*

*The meeting locations were chosen to provide convenient locations across the country and in each NRC region. The Staff determined that meetings in additional locations would not have provided enough added value for the expense of holding the meetings. Public meetings was only one of several means for the public to share their comments with the NRC. The other means included email, mail, or hand delivery to the NRC in Rockville, Maryland. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** I would challenge you not to lose any of the comments that have been made about security or any other issue that you consider outside the scope. And make certain that those do surface somewhere. (AT-B/20)

**Comment:** I guess I'd like to just comment that to the public and to many non-profit organizations, generic means you may say this; you may not say that; this is on the table; that is not on the table. And what happens is that people do make comments that affect their communities and affect their safety and if they are indeed outside the scope of a particular process, I would truly love to believe that those comments are not lost. But at this point, my experience doesn't lead me to be sure that's the case. (AT-B/19)

**Comment:** I recognize that it has probably been a waste of my time and will be ignored, therefore I am not bothering to write it again with every paragraph in the right place. (CL-20/113)

**Response:** *All comments and questions received at the meeting became part of the transcribed record. Other comments received from three other meetings, emails and letters were included in the record; the disposition of all public comments makes up this Appendix.*

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*Comments that pertain to physical security issues have been forwarded to the appropriate NRC office for consideration. Other issues determined to be outside the scope of the Supplement were evaluated for their relevance to on going NRC actions and activities and forwarded to the respective NRC office if appropriate. The comments did not provide new information relevant to this Supplement and will not be evaluated further. The comments did not result in a change to the Supplement.*

**Comment:** Public participation must be instituted for the creation of the ISFSI. At present, the creation of an ISFSI falls into a regulatory no man's land. At the NRC pre-hearing on the Yankee Rowe LTP, the NRC administrative law judges were instructed by the commission not to address any contentions concerning the storage of high-level radioactive waste. The creation of the ISFSI has serious consequences for each reactor community that could last hundreds of years. That the public can not participate in the process - give comments, request hearings, intervene - is unreasonable and undemocratic. (CL-50/24)

**Response:** *The licensing of an ISFSI is outside the scope of the Supplement (see Section 1.3). The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** Each reactor community should have representatives trained in MARSSIM and other protocols by the NRC so that they can effectively comment and express their concerns about the adequacy of the procedures being used. (CL-50/27)

**Response:** *Because of the highly technical nature of designing, conducting, and evaluating final site surveys using the MARSSIM protocols, extensive training in statistics, health physics, physics, and mathematics are needed. It is unreasonable to expect the NRC to provide such training to members of the public at each facility location. Trained NRC experts are available to answer specific questions on the design, execution, and results of the surveys. The comments did not provide new information relevant to this Supplement and will not be evaluated further. The comments did not result in a change to the Supplement.*

### O.5.3 Request for Additional Comment Period

**Comment:** Therefore, we feel it is important to both extend the public comment period until these documents can be made readily available.... But I think we do need to extend the public comment period to address the inability of getting the information easily. (AT-A/6)

**Comment:** There's a number of decommissioning related documents that have come out for review. And while I appreciate the NRC has been very busy, in addition to this GEIS supplement, the entombment proposed rule making, there's also I think, I got two documents this week regarding decommissioning cost reports and I think the cost estimate formats. If

there is any way that we could not have to get all the comments in the very short comment period, if it could be extended, I'd really appreciate it because it's going to be a very busy December for me. (CH-D/13)

**Comment:** This highlights the need for an extended comment period and careful analysis of this issue. For instance, I'm sure there are a number of nuclear security organizations worldwide that perhaps this draft and others within the NRC could be opened up to get their comments and maybe their suggestions of what they're doing in other countries or whatever, because we're looking at a global assault. (AT-A/13)

**Response:** *The comment period for the Supplement was extended an additional 31 days until January 31, 2002. The comments did not result in a change to the Supplement.*

#### **O.5.4 Determination of Scope**

**Comment:** The NRC scope is clearly associated with the radiological aspects of decommissioning. So, an issue such as rubbleization, that has a radiological component, this seems clearly it's within the scope of NRC's review regulation. I do not see the removal of a cooling tower is within NRC's scope. (BO-B/2)

**Comment:** However, while the stated intent of the Supplement is to consider in a comprehensive manner all aspects related to the radiological decommissioning of nuclear reactor facilities, the Supplement sometimes deviates from this intent by delving into activities and impacts related to the removal of uncontaminated structures, systems, and components such as intake structures or cooling towers. While the consideration of these impacts may be useful and helpful, their inclusion without proper caveat may tend to blur the line of NRC jurisdiction. (CL-04/2)

**Comment:** And yet, I note in the document that you also include decommissioning-- environmental impacts of decommissioning a nonradioactive system such as cooling towers and discharge pipes. I'd like to understand what criteria NRC will use to determine the acceptability of a licensee's plans in those areas. (BO-B/1)

**Response:** *The Supplement provides an environmental analysis of the impacts associated with the decommissioning process for nuclear power reactors. Clearly part of that decommissioning process involves the removal and disposal of structures, systems, and components that may not be radiologically contaminated. For completeness, and in the spirit of NEPA, the staff chose to include the dismantlement of all structures, systems, and components necessary for power generation on the site. As a result, cooling towers and the diesel generator building were included, but the site training center and visitor information center was not. During scoping, the NRC staff met with EPA and at their urging the staff agreed to look at*

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*the impacts from activities performed to support dismantlement of nonradiological structures, systems, and components (SSCs) required for the operation of the reactor. This is discussed in Section 1.3, "Scope of This Supplement." The comments did not provide new information relevant to this Supplement and will not be evaluated further. The comments did not result in a change to the Supplement.*

**Comment:** The scope is just inadequate. (CH-C/3)

**Response:** *The comment can not be evaluated because it does not provide specific information. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** Out-of-scope activities are identified and discussed in Section 1 and Appendix D. It is recommended that "Interim Storage of Greater than Class C Waste" also be identified as an out-of-scope activity, consistent with the final rule published in Federal Register Vol.66, Number 197, dated October 11, 2001. (CL-06/2)

**Response:** *Section 1 and Appendix D have been revised to indicate that the interim storage of Greater-than-Class-C Waste is an out-of-scope issue.*

**Comment:** Page 1-5, Section 1.3. This section states that except for decommissioning planning activities, the Supplement only considers activities following removal of the fuel from the reactor. The exclusions include "impacts that result directly and immediately from the act of permanently ceasing operations" such as the environmental impacts of ceasing thermal discharges to receiving waters which the Supplement states "is essentially a restoration of existing conditions." This ignores the potentially adverse effects that the thermal discharges may have had on the ecosystem while the plant was operating; and, while the affected ecosystem may recover from the thermal discharges, such recovery may not be the equivalent of restoration to the originally existing conditions. Also, a species may have become established and dependent upon the thermal discharge. (CL-16/12)

**Response:** *As discussed in Section 1.3, impacts related to the decision to permanently cease operations are outside the scope of this Supplement. Efforts to maintain an altered ecosystem appear contrary to the spirit of NEPA. Furthermore, the NRC has no regulatory authority to require the licensee to continue operating the facility in order to avert impacts from permanently ceasing operations. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** It is absurd that NRC states that "decommissioning activities do not include the maintenance, storage or disposal of spent nuclear fuel, or the removal and disposal of nonradioactive structures and materials beyond that necessary to terminate the NRC license.....

they are not considered as a cost impact because the licensees are not required to accumulate funds for these activities." (See p.4-42).The licensees must be held responsible and accountable for everything about and on the site and generated by the site past, present and future. (CL-20/43)

**Response:** *The Supplement does not state that the licensee is not responsible for the above-stated concerns, only that maintenance, storage, and disposal of spent fuel is not within the scope of this Supplement. The Supplement provides an environmental analysis of the impacts associated with the decommissioning process for power reactors. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** It is murderous that potential radiological impacts following licensing/license termination that are related to activities performed during decommissioning are not in the Supplement. This allows the licensee to slowly murder a community as the radiological criteria for license termination by NRC was woefully inadequate anyway. (CL-20/87)

**Response:** *The radiological criteria for license termination are given in 10 CFR Part 20, Subpart E, and further addressed in NUREG-1496, "Generic Environmental Impact Statement in Support of Rulemaking on Radiological Criteria for License Termination of NRC-Licensed Nuclear Facilities." For a site to be released as unrestricted, the total effective dose equivalent to an average member of the critical group is 0.25 mSv/yr (25 mrem/yr). The NRC staff believes that these criteria are adequate to protect public health and safety. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** I also utterly oppose stating that 10 CFR 20 section E and its Environmental Impact Statement, NUREG 1496, are not part of the scope of this Supplement. (CL-33/19)

**Response:** *10 CFR Part 20, Subpart E, and NUREG-1496 are not part of the scope of this Supplement. The 1997 license termination rule relied on the environmental assessment contained in the "Generic Environmental Impact Statement in support of Rulemaking on Radiological Criteria for License Termination of NRC-Licensed Facilities," Final report, NUREG-1496, dated July 1997. The public had the opportunity to comment on that draft GEIS and the rulemaking effort at the time that the rule was being developed. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** There are several issues in the Supplement which are briefly addressed and dismissed as "out-of-scope," which we insist need to be dealt with as site-specific issues for any thorough EIS on decommissioning, with full public rights to hearings, review, oversight, and



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disclosure maintained. These include: 1. Spent fuel storage and maintenance - The public at each reactor site community should determine how irradiated/"spent" fuel is stored/d dispositioned. If a centralized high-level waste repository is opened at some future date to accommodate the irradiated fuel and high-level waste from a community's decommissioned reactor, the communities that exist along the possible transportation paths should also be involved in site-specific environmental impact reviews/assessments. To exclude spent fuel storage, maintenance, transport, and disposal away from the reactor location from the scope of this GEIS/Supplement, and the opportunity for site-specific EIS reviews, is arbitrary and capricious. 2. Low-level waste disposal at a LLW site - The concept of rubblizing and capping a reactor site and allowing it to function as a low-level waste disposal facility without having the appropriate permitting and licensing hearing process is a serious departure from past NRC licensing practices, and any such "rubblizing" proposal should not be approved without a site-specific EIS review. To exclude this or any similar proposal from a site-specific EIS review, and the scope of this GEIS/Supplement, is arbitrary and capricious. (CL-47/18)

**Response:** *Spent fuel storage is outside the scope of the Supplement, as are transportation and disposal of spent fuel. Both Skull Valley and Yucca Mountain were subjected to site-specific EISs. The staff has stated in the Supplement that the disposal of slightly contaminated rubble onsite (rubblization) would be subject to a site-specific review, as would entombment. Evaluation of the License Termination Plan in support of the rubblization or entombment would allow for a request for intervention on the part of a member of the public. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** Nuclear facility operation results in significant offsite radiological contamination that is ignored under the current definition. For example, one known pathway occurs over the course of reactor operation as the direct result of fuel rod degradation giving way to pin-hole leaks, cracks and loss of rod integrity with radioactive contamination to the reactor coolant system. Primary and secondary coolant piping leakage results in radioactive contamination releases being deposited and accumulated as sediment on river and lakebeds and coastal receiving waters from deteriorated reactor coolant discharge systems. This is of particularly more concern for utilities that operated once-through cooling systems and/or boiling water reactor technology though not exclusively so. Some of our organizations are aware that reactor operators, as in one case of the Big Rock Point nuclear generating station, have argued that offsite radioactive sediment areas should not be disturbed by removal/decontamination efforts and are better left alone than decontaminated. The decommissioning definition does not require the utility to analyze the scope of this offsite contamination, consider its cleanup nor effectively regulate the enforcement of decontamination of residual radioactivity that has

migrated from the reactor site and accumulated off site in affected communities resources such as fresh water supplies. These advertent releases of radioactivity as the result of station operation need be covered within the scope and disclosure as environmental impacts within the decommissioning process.

NRC in its evaluation of the environmental impacts acknowledges "Levels of radionuclide emissions from facilities undergoing decommissioning decreased, because the major sources generating emissions in gaseous and liquid effluents are absent in facilities that have been shut down." Consequently, the NRC currently only considers radiological effluent impacts as a result of decommissioning operations while ignoring the potential need for mitigation of cumulative and persistent toxic radioactive materials deposited downstream over the decades of operation of a reactor. (CL-48/13)

**Comment:** This agency's definition of "decommissioning" is fundamentally flawed in limiting its scope of "property" to the site boundaries. The NRC scope needs to be broadened to encompass the decontamination or mitigation of "property" in addition to structures, systems, and components of the nuclear power station that exist beyond the fence line that have been contaminated nonetheless, as a direct result of station operation. (CL-48/12)

**Response:** *Routine releases from power plants do not result in offsite contamination that warrants offsite remediation. There are regulations in place concerning the release of any material from a nuclear power facility. The plants were licensed with the expectation that there would be routine releases to the air and water due to normal operations. The releases are limited to ensure public health and safety. Licensees are required to conservatively estimate offsite dose annually. The comments did not provide new information relevant to this Supplement and will not be evaluated further. The comments did not result in a change to the Supplement.*

**Comment:** This Supplement to the Final GEIS fails to address decommissioning of nuclear facilities other than commercial reactors. It therefore fails to take into account the subject of NUREG-0586: the environmental impacts of decommissioning nuclear facilities—all nuclear facilities. (CL-52/2)

**Response:** *NUREG-0586 is still valid for all facilities except nuclear power facilities. As stated in Section 1.1 (and unlike the 1988 GEIS), this Supplement covers only reactor facilities licensed by the NRC for commercial power production. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

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**Comment:** Moreover, in order to assess the full environmental impacts of each facility's decommissioning, it is necessary to take into account its impacts in concert with the impacts of all other nuclear facilities that contribute additive radiological and other contamination to the biologic system. (CL-52/3)

**Response:** *The environmental monitoring program and the licensee's Offsite Dose Calculation Manual would adequately characterize the cumulative radiological impacts associated with nearby facilities that are also light water reactors or that emit or release similar radioisotopes to those occurring in a light water reactor. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** For purposes of this GEIS, the NRC is only focusing on the environmental impact of the actual decommissioning activities between the cessation of operations and license termination. This approach completely and inappropriately ignores the environmental impact associated with any radioactive material remaining following license termination. (CL-17/2)

**Response:** *Any potential radiological impacts following license termination that are related to activities performed during decommissioning are not considered in this Supplement. Such impacts are covered by the "Generic Environmental Impact Statement in Support of Rulemaking on Radiological Criteria for License Termination of NRC-Licensed Nuclear Facilities," NUREG-1496. The comment did not provide new information relevant to this Supplement and will not be evaluated further. The comment did not result in a change to the Supplement.*

**Comment:** The NRC in this Draft says p. D-2 that the temporary storage or future permanent disposal of spent fuel at a site other than the reactor site is not within the scope of this Supplement. Why the hell not? It MUST BE, OTHERWISE THIS DRAFT IS EVEN MORE MEANINGLESS. (CL-20/83)

**Response:** *The Commission has independently, in a separate proceeding called the "Waste Confidence Proceeding," made a finding that there is "reasonable assurance 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 license) of that reactor at its spent fuel storage basin, or at either onsite or offsite independent spent fuel storage installations" (54 FR 39767). The Commission has committed to review this finding at least every 10 years. In its most recent review, the Commission concluded that experience and developments since 1990 were not such that a comprehensive review of the Waste Confidence Decision was necessary at that time (64 FR 68005). Accordingly, the Commission reaffirmed its finding of insignificant environmental impacts, cited above. This finding is codified in the Commission's regulations at 10 CFR 51.23(a). The*