

*operation of a spent fuel pool or an ISFSI is not uniquely linked to decommissioning. All operating nuclear power facilities have spent fuel pools and some (with the number anticipated to increase) have ISFSIs generally located adjacent or near to the power reactor facility. 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:** Our organizations have a fundamental dispute with the Commission's definition of decommissioning. Decommissioning should not permit the release of radioactive contamination from regulatory control and the control of some identified responsible party. At public meetings (in 1993 and in 2001) across the country on the issue of "clean-up," the public consistently called for continued regulatory control over any and all wastes, materials, properties and sites with contamination from nuclear power and weapons fuel chain activities. Rather than requiring the identification, capture and isolation of the remains of nuclear power operations, NRC is legalizing the release of contaminated sites, properties, materials and natural resources. By segmenting the portions of the decommissioning process into separate Environmental Impact Statements and supplements, the public is prevented from addressing the amount and method of identifying residual contamination of the environment, natural resources, the community and downstream and downwind ecosystems. The public is prevented from addressing and preventing the concept of allowable doses to the public from nuclear power operation, wastes and decommissioning activities. We protest the designation of issues related to allowable contamination levels and doses being deemed "out of the scope" of this document. (CL-48/11)

**Response:** *Various activities that are performed during decommissioning may seem intuitively to be part of the decommissioning process. However, they are not considered within the scope of this Supplement because these activities have already received a thorough environmental review during the promulgation of the NRC regulations governing such activities. They are reviewed and regulated by the NRC under other regulations. The public has had the opportunity to comment on the regulations and the environmental assessment during the rulemaking process. 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:** CAN believes it is essential for NRC to continue to define decommissioning as a major federal action. As the Appellate Court opined "....., it is undisputed that decommissioning is an action which, even under the Commission's new policy, requires NEPA compliance 10 CFR 51.95(b.)" (CL-50/4)

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**Response:** *Decommissioning of power reactors was never considered a major Federal action. The staff agrees with the commenter that NEPA compliance is required. 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:** Exclusion of licensee decisions and actions prior to certification that plant operations have permanently ceased means that the Supplement fails to consider factors that may have negative impacts on the quality of the decommissioning activities and on minimization of the quantity and condition of the wastes resultant from the handling and removal of radioactive materials from plant structures, systems, and components. (CL-52/9)

**Response:** *10 CFR 50.75(g)(1) requires that reactor licensees maintain records of spills or other unusual occurrences involving the spread of contamination in or around the facility, equipment, or site during operations. The staff chose to consider the environmental effect of those actions or decisions made prior to certification of permanent cessation of operations because those activities would be covered by the environmental assessment made at the time the facility was licensed to operate. Additionally, these records are available and referred to during 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:** Exclusion from consideration of the fate of contaminants post-license termination also renders this Supplement insufficient and not acceptable to account for the environmental impacts of decommissioning. (CL-52/10)

**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. However, any potential non-radiological impacts resulting from decommissioning and occurring after termination of the license are considered 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.*

### **O.5.5 Definition and Discussion of SMALL, MODERATE and LARGE Impacts**

**Comment:** As I understand your slides, they're not saying that all--that all sites, the water--the water use and quality and air quality and ecology are small. You're just saying the sites--those issues that are dealt with in the generic sense--are small issues. And then, there can be site-specific issues that could be SMALL, MEDIUM or LARGE? (BO-A/6)

**Response:** *Section 4.1.2 of this GEIS Supplement provides a definition of generic and site-specific. For each issue, a generic conclusion can be made if the potential impacts of all sites or subsets of sites are SMALL, MODERATE, or LARGE. Site-specific issues can be SMALL, MODERATE, or LARGE. The comment did not provide new information relevant to the GEIS Supplement and will not be evaluated further. This comment did not result in a change to the Supplement.*

**Comment:** Executive Summary, page xiv, line 20 - references 10 CFR 50.82(a)(6)(ii) which states that the licensee must not perform any decommissioning activity that causes any significant environmental impact not previously reviewed. The supplement at page 1-8 beginning on line 23 defines three levels of significance SMALL, MODERATE, and LARGE. At which of these significance levels does the requirement of 10 CFR 50.82 (a)(6)(ii) come into affect. This needs to be defined as several Environmental Issues, e.g. threatened and endangered species are listed as site-specific. (CL-05/3)

**Response:** *The definition of "significance" in 10 CFR 50.82(a)(6)(ii) is not related to the SMALL, MODERATE, and LARGE levels of significance used to evaluate impacts in the Supplement. The determination of significance for 10 CFR(a)(6)(ii) is based on comparison of the potential environmental impact of a specific activity with the bounds of impacts previously reviewed. If the impact of the activity is within the bounds of previously reviewed impacts, the activity may proceed as long as the other criteria of 10 CFR 50.82(a)(6) are met. If the impact is not within the bounds, then the licensee may not undertake the activity without a license amendment and environmental review. The SMALL, MODERATE, and LARGE significance levels refer to whether an impact is noticeable or not and whether the impact will destabilize the impacted resource. The Executive Summary was revised.*

**Comment:** After the explanation by the NRC staff at the public meeting in Atlanta, we further disagree with the process of using the significance levels of SMALL, MODERATE, and LARGE for a variety of issues at a variety of locations to come up with a generic, one-word answer. The classifications are generic in form, hard to understand, and it is difficult to figure out how the NRC came to those characterizations even after NRC staff attempted to explain it at the public meeting in Atlanta. If the NRC unwisely chooses to continue using this classification system, Georgians for Clean Energy urges that, at a minimum, layman's terms be used to define the levels and the methods used to categorize the issues. (CL-08/5)

**Comment:** The Supplement should distinguish better among certain of the small, moderate and large impact levels and better explain certain assumptions used in setting these levels. (CL-16/3)

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**Comment:** I am opposed to the following proposal(s) in the EIS: NRC sets arbitrary and unsubstantiated (low, medium and high) environmental impact categories for each of the steps in decommissioning, to give the appearance that they have minimal effects, to justify not fully addressing them now and to prevent their inclusion in site-specific analysis. (CL-26/12)

**Comment:** ...the vague and arbitrary use of Small, Moderate, and Large significance levels and the intent for use of these designations, which echoes previous attempted bogus designations such as below regulatory concern; (CL-38/4)

**Comment:** I am opposed to the following change to NUREG-0586: In Supplement 1 to the Generic Environmental Impact Statement on Decommissioning: NRC sets arbitrary and unsubstantiated (low, medium, and high) environmental impact categories for each of the steps in decommissioning, to give the appearance that they have minimal effects, to justify not fully addressing them now and to prevent their inclusion in site-specific analysis. (CL-43/10)

**Comment:** NRC's "Levels of Significance and Accountability of Environmental Impacts" assign values of risk to affected communities as "small," "moderate" and "large" as determinants for the denial or approval of a public site-specific review and, potentially, a public adjudication for environmental mitigation. Public Citizen maintains that these categories are excessively arbitrary and broad, and largely groundless for the following reasons: 1. The biological effects of ionizing radiation are destructive. No safe "threshold level" for exposure to ionizing radiation exists for the general population (including the fetus). 2. There is a long history of unresolved regulatory conflict over radiation protection standards that are utilized to determine NRC risk assessments. Federal regulators, including the NRC and the Environmental Protection Agency, have not reached a consensus on residual radiation criteria for decommissioning, with EPA standards being significantly lower (more protective) than NRC criteria. To our knowledge, this conflict has not been resolved and, therefore, it appears that the NRC has unilaterally and arbitrarily concluded what standards would apply in determining whether a risk is "small," "moderate" or "large." 3. The NRC risk assessment inappropriately ignores the population of children in its "critical group" evaluation as the population most vulnerable to residual radioactivity exposure from decommissioning operations. This runs counter to NRC's Organizational Value to a "Commitment ... to protecting the public health and safety." 4. The NRC has a documented history of significant lapses in effective oversight of decommissioning operations as reported by the General Accounting Office in a May 1989 report, "NRC's Decommissioning Procedures and Criteria Need to be Strengthened" (GAO/RCED-89-119). The GAO not only found that complete information does not exist for all licensed activities or buried wastes, but that NRC was found to have terminated a license with radioactive contamination in excess of its own guidelines. Further, the report noted that NRC regulations

lacked a time requirement for document retention. NRC's questionable past performance does not support the agency's move toward generic treatment of decommissioning nuclear facilities where affected communities are denied public review and full disclosure of contamination, the decommissioning plan and license termination plan: **(CL-47/13)**

**Comment:** NRCs "Levels of Significance and Accountability of Environmental Impacts" assign values of risk to affected communities as "small," "moderate" and "large" as thresholds for denying or conducting a public site-specific review and potentially a public adjudication for environmental mitigation. Our organizations argue that these broad categories established by NRC are largely baseless for the following reasons: 1. The biological effects of radiation are deleterious. No safe threshold for radiation exposure for the general population (including the developing fetus) has been established. 2. There is a long history of unresolved regulatory conflict over radiation protection standards assumed to determine NRC risk assessments. Both federal and state agencies have sought to provide greater protection than NRC requires. 3. The NRC risk assessment inappropriately ignores the population of children in its "critical group" evaluation as the population most vulnerable to residual radioactivity exposure from decommissioning operations. 4. There is a documented history of significant lapses in effective NRC oversight of decommissioning operations as reported by The General Accounting Office in May 1989 "NRC's Decommissioning Procedures and Criteria Need to Be Strengthened" (GAO/RCED-89-119). The GAO not only found that complete information does not exist for all licensed activities or buried wastes, but additionally that NRC was found to have terminated a license with contamination in excess of its guidelines and NRC regulations lacked a time requirement for document retention. NRC's checkered history does not provide justification for the agency to move forward with generic treatment of decommissioning nuclear facilities where affected communities are denied public review and full disclosure of contamination. **(CL-48/26)**

**Comment:** NRC sets arbitrary and unsubstantiated (low, medium and high) environmental impact categories for each of the steps in decommissioning, to give the appearance that they have minimal effects, to justify not fully addressing them now and to prevent their inclusion in site-specific analysis. **(CL-48/45)**

**Comment:** I would like to have you expand somewhat on your definition of "small," "moderate," and "large" at this moment. **(SF-C/1)**

**Comment:** It seems a bit strange to me that the majority of the things are defined as "small." With my experience with radiation I would not think that most of them would end up being small, but that often comes down to a matter of scientific debate and opinions. **(SF-C/2)**

**Comment:** We disagree with the process—and it happened during the Hatch relicensing, too—the process of using the significance levels of small, moderate and large for a variety of issues at a variety of locations, to come up with a generic one-word answer. The classifications

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are generic in form, hard to understand and even though it's small, moderate and large which sounds easy, I fundamentally have a hard time explaining that. (AT-A/18)

**Comment:** I also utterly oppose setting "low, medium, and high" environmental impact categories for each of the steps in decommissioning, to give the appearance that some things have negligible effects that don't warrant further consideration. (CL-33/16)

**Comment:** I am opposed to NRC regulations pertaining to Decommissioning which would allow NRC to set arbitrary and unsubstantiated (low, medium and high) environmental impact categories for each of the steps in decommissioning, to give the appearance that they have minimal effects, to justify not fully addressing them now, and to prevent their inclusion in site-specific analysis. This use of this piecemealing approach is unacceptable. (CL-44/10)

**Response:** *The SMALL, MODERATE, and LARGE significance levels provide a method of describing the severity of impacts. These impact levels were established using the Council on Environmental Quality (CEQ) terminology for determining significance (40 CFR 1508.27), which requires consideration of both "context" and "intensity." Impacts that are of SMALL significance are either not detectable or are so minor that they neither destabilize nor noticeably alter any important aspect of a resource. MODERATE impacts may noticeably alter an important aspect of a resource, but do not destabilize the resource. And LARGE impacts are clearly noticeable and destabilize important aspects of the resource. The discussion of decommissioning impacts in Chapter 4 was changed to more clearly relate the impacts in terms of detectability and effect on resource stability.*

**Comment:** Page 1-8, Section 1.4. EPA encourages NRC wherever possible to make the Levels of Significance (small, moderate and large) used in the Supplement more definitive by including risk ranges, referencing the appropriate NRC regulations or providing examples of impacts. We note that in several cases the qualitative analysis is given in units of person-rem with no regulatory limit provided. (CL-16/15)

**Response:** *The discussion of decommissioning impacts in Chapter 4 was changed where needed to more clearly relate the impacts in terms of detectability and effect on resource stability.*

**Comment:** NRC has absolutely no basis to say whether impacts will be small etc. based on that sort of garbage. (CL-20/6)

**Response:** *Use of the levels of significance of SMALL, MODERATE, or LARGE is recognized as an acceptable and commonly used approach to ascribe a measure of significance to*

*decommissioning impacts. These levels of significance are based on CEQ guidelines. 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:** (4.1.1) Terms of Significance of Impacts The Nuclear Regulatory Commission employed a "standard of significance" developed by the Council of Environmental Quality (CEQ). Context means that the significance of an action must be analyzed in several contexts, such as a society as a whole (human, national), the affected region, the affected interests, and the locality. However, no "electric utility" constructs, operates, or decommissions a nuclear station without economics being the paramount consideration. Yet, the NRC and CEQ have created a nuclear Potamkin [sic] Village where economic imperatives are subordinated to the behavioral science flavor-of-the-day. In the NRC's world, an "electric utility" can apply for a loan using NEPA as collateral. I hope that at the end of the GEIS process, the Commission, can provide me with an address so that I can relocate my family to a neighborhood-without-economic considerations. (CL-02/44)

**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.*

### **O.5.6 Time Frame for Assessing Environmental Impacts**

**Comment:** It is not acceptable to give the option of using recent environmental assessments. What is the definition of recent?...So I would like a definition of what is recent and if we're talking about endangered and threatened species, that list is going to change when a lot of these power plants actually go through decommissioning because species are being put on and taken off those lists all the time. So what is recent? I would request—our organization requests that they always have a recent—a new, like that year that they decide to decommission—an environmental assessment. (AT-A/23)

**Comment:** Georgians for Clean Energy requests that the NRC require licensees undergoing or planning decommissioning to submit a new environmental assessment. We do not find it acceptable to give licensees the option of using "recent environmental assessments." (CL-08/6)

**Comment:** Page xv, Lines 37-38. The document identifies certain issues that are "site-specific for activities occurring outside the disturbed areas in which there is no recent environmental assessment." "Recent" should be defined by, for example, specifying a time frame or "shelf life"

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for environmental assessments, so that licensees have clear notice of when they must prepare or update such a document for the disturbed area(s) in question. This same problem arises in Table ES-1, which refers to "current" and "recent" ecological assessments. (CL-16/11)

**Response:** *The text was revised throughout the Supplement to provide clarification and the phrase "recent environmental assessments" is no longer applicable or used.*

**Comment:** The time frame for assessing the magnitude of the environmental impacts is not clearly discussed. In some instances (terrestrial ecology page 4-20, lines 39-41), the draft acknowledges that some impacts will be temporary but once decommissioning is completed, not significant. The discussion of other issues is silent with regards to when the impact is assessed. For example, dewatering for a relatively short period while sub-surface foundations are removed would be performed in accordance with a National Pollutant Discharge Elimination System (NPDES) permit (section 4.3.2). However the impact on the water table during this period of decommissioning would probably be noticeable. Once dewatering has ceased the water table would most likely return to its pre-decommissioning level. The licensee would reasonably conclude that dewatering during decommissioning is a SMALL (not noticeable, does not de-stabilize any important attribute of the resource) impact once decommissioning has been completed and is addressed in this GEIS Supplement. The NRC should revise the GEIS Supplement to clarify that the magnitude of the impact should be assessed once decommissioning activities have ceased and the license is terminated. (CL-01/2)

**Response:** *The commentor proposes that the NRC assess the magnitude of impacts only after the decommissioning activities have been concluded and the license terminated. NEPA requires a Federal agency to consider in advance every significant aspect of the environmental impact of the proposed action and to take a hard look at the environmental consequences. Such consideration should occur even if the impact is temporary and minor. Additionally, the Federal agency is to evaluate the potential for mitigation of the impact. The staff believes that the consequences of an activity needs to be evaluated at or close to the time that it occurs, thereby complying with the intent of NEPA to provide full disclosure and also to allow for mitigation. 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.5.7 Reactors Included in the GEIS Analysis

**Comment:** You said you had visited a number of facilities. I wondered if you'd visited any in New England, in particular, the Maine Yankee facility? So, you talked with some of the folks up there (Maine Yankee facility) and got a sense of what was--what were the issues and so on? (BO-A/4)



**Response:** *Maine Yankee was one of the reactors visited during the scoping and data collection 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:** In Table J-2, the location of Peach Bottom is incorrect. Peach Bottom resides in Delta, and is located less than a mile from Lancaster County and the State of Maryland.

In Table J-2, the location of Three Mile Island by county is incorrect. Three Mile Island resides in Londonderry Township, Dauphin County. "Northampton" County is located in Northeastern Pennsylvania. In addition, there are four counties located within five miles from Three Mile Island, i.e. Cumberland, Lancaster, Lebanon, and York. (CL-02/67)

**Response:** *Table J-2 was revised and Dauphin County is given as the county in which Three Mile Island is located.*

### **O.5.8 Application of NEPA Process to Decommissioning**

**Comment:** I am opposed to the following change to NUREG-0586: In Supplement 1 to the Generic Environmental Impact Statement on Decommissioning: NRC prevents the National Environmental Policy Act from applying to most of the decommissioning process. (The claim appears to be that this proposed Supplement 1 satisfied the Environmental Policy Act for most of the decommissioning issues.) (CL-43/7)

**Comment:** The National Environmental Policy Act was written for a purpose, your proposed rules side step that purpose. (CL-25/9)

**Comment:** I am opposed to the following proposal(s) in the EIS: NRC prevents the National Environmental Policy Act from applying to most of the decommissioning process. (CL-26/10)

**Comment:** I also utterly oppose preventing the National Environmental Policy Act from applying to most of the decommissioning process. (CL-33/13)

**Comment:** NRC prevents the National Environmental Policy Act from applying to most of the decommissioning process. (The claim appears to be that this proposed Supplement 1 satisfies the Environmental Policy Act for most of the decommissioning issues.) (CL-48/42)

**Comment:** But to the people in the affected communities, it is a problem and that problem is one that they're going to have to live with after the NRC has washed its hands of the site. So we do have some real problems with the fragmentation of the decision making process and the public participation opportunities, and believe that indeed that there are NEPA violations. (AT-B/7)

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**Response:** *NRC does not exclude the decommissioning process from the environmental analysis expected under NEPA or the NRC's environmental protection regulations (10 CFR Part 51). The NEPA process allows for the development of programmatic and generic EISs where a "hard look" can be made for programs and issues that have common themes. Power reactor licensees cannot perform decommissioning activities that could result in a significant impact to the human environment that was not previously reviewed. Those activities are reviewed in the Final Environmental Statement (FES) or Final Environmental Impact Statement (FEIS) for construction and operation, Supplements to the FES or FEIS, the GEIS for license renewal, site-specific supplements for license renewal, and the GEIS for decommissioning. If any decommissioning activity might result in significant environmental impacts and that activity is not reviewed in one of these aforementioned documents, then the licensee must submit a request for a license amendment. A license amendment requires that the licensee must submit a Supplement to their environmental report and the staff conducts an environmental review on the request. 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 important to address NEPA and "psychological stress." The reality is that "psychological stress" exists, and will continue to exist. In fact, if the NRC had revisited the issue of "psychological stress" and the TMI community, it would have found the following:...The D.C. Circuit Court decided psychological (psych) stress does not need to be covered during the restart hearings. However, the Court ruled, that under the National Environmental Policy Act (NEPA), psych stress must be addressed. The Court ordered an injunction on restart until a study on psych stress was conducted. However, on April 19, 1983, The U.S. Supreme Court reversed the D.C. Circuit Court's opinion on psych stress and ruled an environmental study is not necessary. Two months later, on May 5, 1983, GPU revealed for the first time to the NRC that management audits, including psychological evaluations, concluded by BETA and RHR, completed in February and March, 1983, were critical of plant operations and management. The NRC can hide behind NEPA or any other convenient acronym, but "psychological stress" is a verifiable fact of life for people who live and work, in and around, nuclear power plants.  
(CL-02/43)

**Response:** *No activity has been initiated to vacate the U.S. Supreme Court decision on this matter. 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 Appellate Court justices opined that your agency was in violation of its own regulations and Rulemaking process in approving the experimental decommissioning at the Rowe reactor without a decommissioning plan and an environmental assessment. In addition, the court has ruled that decommissioning is a major federal action and requires NEPA compliance. "An agency can not skirt NEPA or other statutory commands by exempting a licensee from compulsory compliance, and then simply labeling its decision "mere oversight"

rather than a major federal action. To do so is manifestly arbitrary and capricious." We believe NEPA compliance is mandatory for decommissioning. A Generic Environmental Impact Statement can not substitute for an individual EIS, as computer modeling can not substitute for actual testing. (CL-50/3)

**Response:** *As stated in Chapter 1 of the Supplement, one reason the 1988 GEIS was updated was to further the purposes of NEPA. The Appellate court did not rule that decommissioning was a major Federal action. Rather, the court ruled that the NRC had not followed its own regulations in allowing the licensee of Yankee Rowe to remove major components prior to the completion of the review of the Decommissioning Plan. The NRC revisited this issue as part of a rulemaking involving the public, and has determined that decommissioning is not a major Federal action. 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.5.9 Opposition to Use of Generic Impacts**

**Comment:** Existing nuclear power plants are not generically designed and, therefore, a generic program for decommissioning is completely inadequate to protect public health and safety. New and site-specific Environmental Impact Statements must be required to address how different power plants should be decommissioned (from the standpoint of historical operations, age-related degradation, salt water intrusion) in the safest manner possible for each location. In the case of Diablo Canyon, new seismic information should be sought to assure the public that the process would not increase the dangers of an already dangerously sited nuclear plant. (CL-53/3)

**Response:** *NRC staff recognizes that there is wide variability among nuclear power plants. However, based on the results of our analysis, the impacts resulting from decommissioning are similar regardless of plant characteristics. 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:** Generic things sound good, but each plant is different. I was originally thinking well, they are all kind of the same system, so it wouldn't matter, they are on the same principle, but they're not. I mean, there are differences. (AT-D/3)

**Response:** *The generic approach is used (1) when impacts of environmental issues apply to all plants or a specific characteristic of that plant, (2) when a single significance level has been assigned to the impacts, and (3) when mitigation of adverse impacts associated with the issue have been considered in the analysis, and it has been determined that additional site-specific mitigation measures are not likely to be sufficiently beneficial to warrant implementation. If an*

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*environmental issue does not meet all three requirements, additional site-specific review is required. 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 a Generic Environmental Impact Statement regarding decommissioning of nuclear facilities is a sufficient tool for evaluating impacts borne to specific environments from decommissioning a nuclear power plant. (AT-A/17)

**Comment:** Again, we feel that a site-specific analysis must be done for each individual nuclear plant. This includes the area of the site itself, along with downstream and downwind regions and all areas within the ingestion radius of the facility. (AT-A/32)

**Comment:** Georgians for Clean Energy does not believe that a generic environmental impact statement (EIS) regarding decommissioning of nuclear facilities is a sufficient tool for evaluating impacts borne to specific environments from decommissioning a nuclear power plant. (CL-08/4)

**Comment:** I do not support any attempt of your agency to narrow the scope of site-specific issues by declaring them to be generic. (CL-27/1)

**Comment:** Some of my concerns about NUREG-0586 include:—the use of generic proceedings to eliminate site-specific evaluation of concerns; (CL-38/2)

**Comment:** Issues common to the process of decommissioning nuclear reactors should be raised with every reactor being decommissioned, not excluded from every specific reactor being decommissioned. These common issues have not been resolved. (CL-28/1)

**Response:** *The NRC has an obligation to implement effective regulatory practices that involve public participation. In this Supplement, the NRC established an envelope of environmental impacts resulting from decommissioning activities, identified those activities that can be bounded by a generic evaluation, and identified those that require a site-specific analysis. The NRC concentrated the environmental analysis on those activities with the greatest likelihood of having an environmental impact. Even for those impacts that have been determined to be generic, a licensee is required to perform an assessment of environmental impacts from each decommissioning activity to determine whether the impacts fall within the generic envelope described in the 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:** We disagree with the NRC conclusion that most of the environmental issues they addressed are deemed as quote, generic and small for all plants, regardless of the activities and identified variables, end quote. (AT-A/19)

**Response:** *The commenter did not provide a specific example or basis to demonstrate that the conclusions were not characterized correctly. 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:** And again, we feel that site-specific studies should be conducted. The economy of rural Georgia is much different from that of urban New York. (AT-A/41)

**Comment:** Therefore, the safest alternative would be, first, to consider each reactor site individually rather than making a blanket policy to cover every site. (CL-10/6)

**Comment:** We again stress system need for site-specific EIS studies on decommissioning for nuclear power reactors. Our communities, from the people to the waterways, are unique and entitled to nothing less. (AT-A/45)

**Comment:** Georgians for Clean Energy firmly believes that a site-specific analysis must be done for each individual nuclear plant. This includes the area of the site itself along with downstream and downwind regions and all areas within the ingestion radius of the facility. As we mentioned at the public meeting in Atlanta, there are already elevated levels of some radioactive contaminants nearly 100 miles downstream of Georgia's Plant Hatch and Plant Vogtle. (CL-08/17)

**Comment:** We again stress the need for site-specific Environmental Impact Statements on decommissioning for nuclear power reactors. Our communities—from the people to the waterways—are unique and are entitled to nothing less. (CL-08/35)

**Comment:** Furthermore, a "generic" EIS cannot provide adequate assurance that the unique situation and condition of each nuclear facility have been fully analyzed and accounted for. Each plant is unique; each plant's impacts must be examined in relationship with all other nuclear facilities that affect the condition of the environment. In the real world environment, radioactive and hazardous materials are not necessarily static; they move; they interact with other materials; they accumulate; they may have their adverse impacts at or near their site of origin or far away from it. The totality of those impacts, upon both human and non-human inhabitants of the biosphere must be incorporated into an environmental analysis and accounted for fully also for adversely affected individuals in any cost-benefit analysis. All issues should be examined at each plant. (CL-52/8)

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**Response:** *Site-specific analysis is required for those situations where an environmental review has not been conducted or where the impacts may be different from those previously analyzed. NRC staff recognizes that there is wide variability among nuclear power plants. However, based on the results of the analyses presented in the Supplement, many of the impacts resulting from decommissioning are similar regardless of plant characteristics. 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 oppose the use of "Generic" listing of issues. I support "Site Specific" listing so that local communities can still raise issues they have. (CL-24/2)

**Comment:** Many key issues that local communities face as reactors close and owners leave (liability-free) will be unchallengeable, because they are being listed as "generic" issues. (CL-25/5)

**Comment:** It is my understanding that the purpose, and certainly the effect, of the proposed supplement to NUREG-0586 is to reclassify many decommissioning issues as "generic" in order to avoid a community's right of challenge and to allow owners to depart without liability. I understand that the NRC supplement seriously limits a community's ability to challenge even those issues that are considered "site-specific." (CL-36/3)

**Comment:** If the changes pass, many key issues that local communities face as reactors close and owners leave (liability-free) will be unchallengeable, because they are being listed as "generic" issues. "Generic" decommissioning issues are ones that NRC determines apply to numerous reactors and which are supposedly being resolved with this Supplement to the Generic Environmental Impact Statement. "Site specific" issues are ones that can still be raised in local communities, but the opportunities to address even site-specific issues is being curtailed dramatically. I support the designation of environmental justice and endangered species issues as site-specific (not generic). I oppose Rubblization but support its designation as site-specific. (CL-43/15)

**Comment:** I am opposed to NRC regulations pertaining to Decommissioning which would allow NRC to make most aspects of decommissioning "generic" rather than site-specific so NRC cannot be legally reviewed or challenged at individual sites. (CL-44/8)

**Comment:** In establishing 80% (24 of 30) of the environmental impacts of decommissioning as being "generic" the NRC is doing the industry's bidding to restrict or eliminate the affected public's opportunities to comment on, guide, monitor and review the decommissioning of nuclear power reactors in their communities. (CL-47/10)

**Comment:** Regardless of any uniformity that may or may not exist as issues to consider at decommissioning reactors - and our position is that any concerns of the relevant communities are site-specific - the NRC's move to make most considerations within the decommissioning process "generic" is a thinly veiled project to eliminate public review and full disclosure through public hearings. (CL-47/11)

**Comment:** NRC cleverly makes most aspects of decommissioning "generic" rather than site-specific, so they cannot be legally reviewed or challenged at individual sites. (CL-48/43)

**Comment:** These events do not warrant nor should they instill public confidence in staff conclusions that the agency and the industry can reasonably make the leap to the generic treatment of environmental impact statements for decommissioning nuclear facilities and effectively take away a community's review and the full disclosure of the extent and location of radioactive contamination both on and off site. (CL-48/6)

**Comment:** We have a fundamental dispute with the NRC effort to eliminate public review and full disclosure through public hearings on decommissioning practices and mitigating environmental impacts based on arbitrary and capricious categories for determining "generic" and "site-specific" proceedings for nuclear power station decommissioning. (CL-48/25)

**Comment:** I think my concern is always to what extent a generic statement like this takes particular issues that are local out of the local decision-making process, out of the public hearing that has to be had for—or we were originally led to believe has to be had for each of these. (AT-C/1)

**Response:** *The NRC established an envelope of environmental impacts resulting from decommissioning activities, identified those activities that can be bounded by a generic evaluation, and identified those that require a site-specific analysis. The NRC concentrated the environmental analysis on those activities with the greatest likelihood of having an environmental impact. Even for those impacts that have been determined to be generic, a licensee is required to perform an assessment of environmental impacts from each decommissioning activity to determine whether the impacts fall within the generic envelope. The description of impacts as site-specific or generic does not preclude local communities from participating. The commenters are referred to the Executive Summary for a description of "generic" and "site-specific."*

*The public can raise issues using any of several methods. 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. The process is set forth in NRC's regulations in 10 CFR Part 2, "Rules of Practice of Domestic Licensing Proceedings and Issuance of Orders." If the action of concern does not involve a license amendment, then any member of the public may*

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*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 or 10 CFR). 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 above reasons illustrate the lack of a sound basis for staff conclusions that the decommissioning alternatives of entombment and rubblization are a "minor" environment impact and can be treated generically to avoid public review and full disclosure in formal public hearings. We therefore adamantly oppose such generic treatment. (CL-48/35)

**Response:** *Entombment is the focus of a current NRC rulemaking that would provide further guidance on this method of decommissioning a nuclear power facility. If a licensee pursues the ENTOMBMENT option, there will be activities necessary to ready the facility for the entombment. The impacts from the activities to prepare the facility for Entombment are considered generic. A site-specific assessment required by a proposed restricted release would naturally focus on radiological issues.*

*Rubblization is not considered an option for decommissioning, but a potential activity of decommissioning. The Supplement states that the radiological aspects of rubblization on onsite disposal of slightly contaminated material would be addressed in a site-specific manner at the time that the LTP is submitted. The site-specific LTP will provide a mechanism for the NRC staff's evaluation of the licensee's plans to dispose of rubblized concrete on site. The radioactive material that remains at the site after the license has been terminated must meet the dose criteria for license termination given in 10 CFR Part 20.*

*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.6 General

### O.6.1 Clarifications and Recommendations Related Specifically to Supplement 1

**Comment:** Second, we would like to see a place in the document where you're comparing the risks, environmental risks associated with dismantling the facility immediately, versus storing the material and keep putting the facility in safe store. It's referenced in the document that there are higher risks, sometimes, of dismantling immediately because the material is more radioactive. But it doesn't show a comparison of the risks associated with storing it versus dismantling it in the short-term. (CH-A/13)



**Response:** *The Supplement provides general advantages and disadvantages for the various options for decommissioning. Both long-term storage followed by decontamination and dismantlement and immediate decontamination and dismantlement were found to be acceptable approaches to 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:** There are some aspects of the regulations that are specific to light water reactors and I just think the document needs to reflect those rather than all reactors. (CH-D/5)

**Response:** *Section 4.3.11.1, "Regulations," has been revised to reflect that the minimum amounts required to demonstrate reasonable assurance of funds for decommissioning found in 10 CFR 50.75(c) apply only to light water reactors.*

**Comment:** Activities that require state or local permits or approval should be considered to have a SMALL impact under the GEIS. Licensees will be required to obtain approval from state and/or local agencies for several activities performed as a part of decommissioning and site restoration. These activities may include routine discharge or non-radiological liquids, dewatering, removal or modification of circulating water conduits, and use of portable combustion engines. Typically, the regulations governing approval for these activities require that the regulatory agency perform an assessment of the environmental impact(s) and, as appropriate, establish mitigating measures as permit conditions. In the case of water quality issues, the NRC relies on the licensee's compliance with the NPDES permit to conclude that the magnitude of the impact(s) is SMALL. The NRC should revise the GEIS Supplement to clarify that the NRC will consider the impact of an activity to be SMALL and rely on the licensee's compliance with a state or local permit, including any mitigating conditions. (CL-01/3)

**Response:** *The determination of level of significance is specific to the evaluation of environmental impacts from decommissioning, regardless of State permits and approvals. The staff does not agree that just because the licensee has a State or local permit that impact of the activity will always be SMALL. NEPA requires an evaluation based on postulated impacts. 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 potential impacts of removing circulating water conduits on water quality or aquatic ecology are not consistently discussed or are considered an exception from the staff's conclusions. The Executive Summary states that the "removal of uncontaminated SSCs (such as the intake structure or cooling towers) that were required for the operation of the reactor are included in the scope of the GEIS. However, chapter 4 does not discuss the potential impacts of removing circulating water conduits on water quality (section 4.3.3) and the staff considers

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removal of these structures to be an exception to the generic evaluation for aquatic ecology (section 4.3.5). Similarly, the tables in Appendix H do not address this issue. Realistically, the licensee will have to comply with state and/or local regulations to remove the circulating water conduits or cooling towers. The state and/or local agency would perform an environmental assessment and, as appropriate, establish conditions in the permit to mitigate any environmental impact(s). As in the case of water quality issues, the NRC relies on the licensee's compliance with the NPDES permit to conclude that the magnitude of the impact(s) is SMALL. The NRC should revise the GEIS Supplement to clarify that the NRC will rely on the environmental assessment performed for and any mitigating conditions included as part of the state or local permit for removal of circulating water conduits. (CL-01/5)

**Response:** *The consistency of the discussion and the tables in Section 4.3, "Environmental Impacts from Nuclear Power Facility Decommissioning," of this Supplement have been addressed. The staff recognizes that removal of circulation water conduits or cooling towers will be conducted in accordance with State and local requirements. However, the NRC staff cannot reach a conclusion on the level of impact based solely on the presumed compliance with these requirements. Circulating water conduits and other SSCs that will be removed after operation, however, are not expected to detectably change or destabilize the aquatic environment. The staff conclude that the impact to the aquatic environment for these decommissioning activities is SMALL and no further mitigation would be required. The staff conclusion is based on the short duration of most deconstruction activities, the fact that the impact is to a previously disturbed ecosystem, and the potential use of mitigative actions, such as scheduling in-water activities during periods in which impacts to aquatic resources would be minimal, as well as provided oversight from State and local agencies. The staff's conclusions in this Supplement do not provide relief or exception from other laws and regulations related to any of the activities discussed in the Supplement. The staff relies on the licensee's compliance with other agency regulations, such as the NPDES, as an indicator of potentially causing detectable or destabilizing changes in the aquatic environment. Section 4.3, "Environmental Impacts from Nuclear Power Facility Decommissioning," was revised to be consistent with the above response.*

**Comment:** The GEIS's glossary superficially glosses over "Greenfield" and equates it with an end state of decommissioning ... According to NRC Regulations, Greenfield is achieved when a nuclear generating station is returned to "original status" prior to licensing, construction, and generation of nuclear power. The NRC would then clear the site for "free release" and allow a "school or playground" to be constructed at the former nuclear power plant. (CL-02/40)

**Response:** *The definition of Greenfield in Appendix M, "Glossary," was revised to describe Greenfield as one possible end state of decommissioning and that NRC regulations do not require a greenfield end state.*

**Comment:** Appendix F Summary Table of Permanently Shutdown and Currently Operating Commercial Nuclear Reactors, PG. F-1, Table F-1 Permanently Shutdown Commercial Nuclear Plants {Total Site Area (ac.) For Maine Yankee: 741 (should be 820)}. (CL-04/11)

**Response:** *The revised area was included in Table F-1.*

**Comment:** 3.3.3 Decommissioning Process pg. 3-29, 2nd full para. This paragraph is redundant to the preceding and succeeding paragraphs and can be deleted in its entirety. (CL-04/17)

**Response:** *Section 3.3.3, "Summary of Plants that Have Permanently Ceased Operations," was revised to remove redundancy.*

**Comment:** Appendix A Draft Generic Environmental Impact Statement Scoping Summary Report: Comments in Scope pg. A-2, Written Comment Letters: George A. Zinke is listed as the "Director, Nuclear Safety & Regulatory Affairs, U.S. Environmental Protection Agency." This reference should be revised to indicate; "Director, Nuclear Safety & Regulatory Affairs, Maine Yankee Atomic Power Co." (CL-04/19)

**Response:** *Appendix A was renamed Appendix N and Mr. Zinke's correct title included.*

**Comment:** Section 3.1.3, p 3-8 - add "The systems described are typical and may differ at specific facilities." to end of the 1st paragraph. (CL-05/4)

**Response:** *Section 3.1.3, "Description of Systems," was revised and the above phrase added to the end of the first paragraph.*

**Comment:** Section 3.1.3, p 3-10, 1st paragraph - add "or similar document" following "(ODCM)", since limits may be in Technical Specifications rather than an ODCM. Also, the description of effluent systems should include mention of an evaporator, since some facilities use evaporation to convert liquid waste to gaseous and monitor their discharge. (CL-05/5)

**Response:** *Section 3.1.3, "Description of Systems," was revised and the above phrase was added.*

**Comment:** Section 3.1.4, p 3-13, last paragraph - shipment of contaminated apparatus or hardware may also occur to support specific activities. (CL-05/6)

**Comment:** Section 3.1.3, p 3-13, last paragraph - Shipment of contaminated apparatus or hardware may also occur to support specific activities. (CL-09/11)

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**Response:** *Typically, contaminated apparatus or hardware are considered routinely generated low-level waste (LLW) even if they were operated to support specific decommissioning activities. 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:** Section 3.1.3, p 3-14, 1st paragraph - shipment may also occur on barges or other ships. (CL-05/7)

**Response:** *Section 3.1.3, "Description of Systems," was revised to include barges and other ships.*

**Comment:** Section 3.2, p 3-16 - the definition of SAFSTOR should more clearly define that it includes the final decontamination of the facility. This would be more consistent with definitions used elsewhere. (CL-05/9)

**Comment:** Section 3.2, p 3-16, lines 18-24 – The definition of SAFSTOR should more clearly define that it includes the final decontamination of the facility. This would be more consistent with definitions used elsewhere, such as in the original GEIS. (CL-09/13)

**Response:** *Section 3.2, "Decommissioning Options," was revised to clearly state that final decontamination of the facility is part SAFSTOR.*

**Comment:** Section 4.3.4.4, page 4-16, 1st paragraph - add the following sentence to the end of the paragraph: "Particulates produced by decommissioning activities within buildings will be filtered as needed so that air quality impacts will be small." (CL-05/12)

**Response:** *The staff has chosen not to include the comment in section 4.3.4.4, "Conclusions". Section 4.3.4.3, "Evaluation," does however address filtration systems to control the release of particulate material to 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:** Section 4.3.7, p 4-25, last paragraph - This conclusion indicates that the NRC will meet its responsibilities on a site-specific basis during any decommissioning process, but it does not specify how the NRC will meet its responsibilities or what information it will need from licensees. (CL-05/16)

**Response:** *The responsibilities under the Endangered Species Act (ESA) will be met through appropriate interactions among the licensee, the NRC, and the jurisdictional regulatory agency, either the U.S. Fish and Wildlife Service (FWS) or the U.S. National Marine Fisheries Service (NMFS), or both. Information required of the licensee will depend on the planned*

*decommissioning activities and the species potentially present. The NRC staff will seek informal consultation with NMFS and the FWS shortly after the licensee announces permanent cessation of operation. 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:** Section 4.3.14, pg. 4-61, last paragraph - This conclusion indicates that the NRC will meet its responsibilities on a site-specific basis during any decommissioning process, but it does not specify how the NRC will meet its responsibilities or what information it will need from licensees. (CL-05/18)

**Response:** *Section 4.3.14, "Cultural, Historical and Archeological Resources," was revised and identifies what activities can be generically evaluated and which require a site specific review. See section 4.3.14.1 for a discussion of the requirements and section 106 of the National Historic Preservation Act.*

**Comment:** Abstract, p iii, lines 16-17 – add "explicitly" before "consider" in the 5th sentence. The original GEIS did not explicitly cover reactors except boiling water reactors (BWRs) and pressurized water reactors (PWRs). However, other reactors were not explicitly listed in what was not covered by the GEIS. Also, other reactors were listed in the table of decommissioning reactors in the original GEIS. They have been considered covered for activities described in the GEIS. (CL-09/2)

**Response:** *The Abstract was revised and the above change made.*

**Comment:** Executive Summary, p xi, 3rd paragraph, 4th sentence, lines 31-32 – change to "It does not include research and test reactors or the decommissioning of reactors that were permanently shutdown as a result of an accident." This change provides consistency with the report and does not imply exclusion of all reactors that have been involved in an accident at some time during their operating history. (CL-09/3)

**Response:** *The Executive Summary was revised incorporating the phrase "it does not include research and test reactors."*

**Comment:** Section 3.1, p 3-2, line 21 – the LaCrosse Boiling Water Reactor site is smaller than San Onofre. McGuire Nuclear Station has two operating reactors rather than three. (CL-09/4)

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**Response:** *The Lacrosse reactor is on approximately 1.2 ha (3 ac) with the total utility owned site of 66 ha (163 ac). The total site area for San Onofre is 34 ha (84 ac). The staff chose the total site area to contrast the various decommissioning facilities. The comment on the McGuire plant was correct and the staff chose to use the Turkey Point plant instead.*

**Comment:** Section 3.1.1, p 3-2, line 39 and 3-3, line 1 – Fermi 1 is in the final phase (decontamination and dismantling) of SAFSTOR. (CL-09/5)

**Response:** *Section 3.1.1, "Types of Nuclear Power Reactor Facilities," was revised and the above phrase incorporated in the text.*

**Comment:** Section 3.1.1.3, p 3-4, lines 10-14 – delete 2nd sentence and modify 3rd sentence. The Fermi 1 FBR used uranium as its fuel. The information on uranium capturing neutrons to produce plutonium is correct. Breeding rates are dependent on the FBR's specific design. (CL-09/6)

**Response:** *Section 3.1.1.3, "Fast Breeder Reactors," was revised and the above changes incorporated in the text.*

**Comment:** Section 3.1.1.3, p 3-5, line 1– add "commercial" before "FBR." The final decision on whether to permanently shutdown the FFTF, a DOE FBR, has not yet been announced. (CL-09/7)

**Response:** *Section 3.1.1.3, "Fast Breeder Reactors," was revised and the word "commercial" inserted before "FBR". On December 19, 2001 DOE announced the deactivation of the FFTF.*

**Comment:** Section 3.1.2, p 3-6, lines 18-19 – The Fermi 1 Reactor Building is a steel domed structure. Below ground, there is considerable concrete shielding, but the building is not reinforced concrete. (CL-09/8)

**Response:** *Section 3.1.2, "Types of Structures Located at a Nuclear Power Facility," was revised and the above changes incorporated in the text.*

**Comment:** Section 3.1.3, p 3-8, line 32 – Add "The systems described are typical and may differ at specific facilities." to end of the 1st paragraph. (CL-09/9)

**Response:** *Section 3.1.3, "Description of Systems," was revised and the above sentence added to the text.*

**Comment:** Section 3.1.3, p 3-10, line 7 – Add “or similar document” following “(ODCM)”, since limits may be in Technical Specifications rather than an ODCM. Also, the description of effluent systems should include mention of an evaporator, since some facilities use evaporation to convert liquid waste to gaseous and monitor their discharge. (CL-09/10)

**Response:** *Section 3.1.3, “Description of Systems,” was revised and “or similar document” added to the text after “ODCM”.*

**Comment:** Section 3.1.3, p 3-14, lines 5-6 – Shipment may also occur on barges or other ships. (CL-09/12)

**Response:** *Section 3.1.3, “Description of Systems,” was revised and the reference to barges or ships was included in the text.*

**Comment:** Table 3-2, p 3-27 – Add footnote “c” to Fermi 1. Detroit Edison informed the NRC in late 2001 per the requirements of 10 CFR 50.82, that the final decontamination and dismantling phase of SAFSTOR would be started for Fermi 1. (CL-09/14)

**Response:** *Table 3-2 was revised and footnote “c” added.*

**Comment:** Section 3.3.3, p 3-29 – Sentences are duplicated between the three full paragraphs on p 3-29. (CL-09/15)

**Response:** *Section 3.3.3, “Summary of Plants that Have Permanently Ceased Operations,” was revised to remove redundant text.*

**Comment:** Section 4.3.3.3, p 4-12, line 16 – There appears to be a discontinuity between the previous paragraph and the paragraph starting on line 16. Is something missing? (CL-09/16)

**Response:** *Section 4.3.3.3, “Results of Evaluation,” was revised to include the missing information.*

**Comment:** Section 4.3.3.3, p 4-12, lines 28-30 – Add “The processing of residual sodium products from an FBR is no more likely to result in water quality impact than decommissioning activities at a LWR.” (CL-09/18)

**Response:** *The suggested wording does not add anything to or change the staff’s conclusion. 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:** Section 4.3.10.2, p 4-40, lines 12-14 – in the paragraph on FBR decommissioning activities, add that decommissioning a FBR involves removal of sodium and NaK, but that these decommissioning activities can be performed safely with the proper engineering controls.

(CL-09/27)

**Response:** *The suggested wording does not add anything to or change the staff's conclusion. 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:** Section 4.3.11.1, p 4-41, line 7 – add “LWR” before “licensee” in the third sentence. The formula for the specified minimum amount of decommissioning funds applies to LWR’s. The other regulations on decommissioning funds and evaluation of adequacy do apply to all reactors, so there is no adverse impact of the formula applying only to LWR’s. (CL-09/28)

**Response:** *Section 4.3.11.1, “Regulations,” was revised and “LWR” was added before “licensee”.*

**Comment:** Section 4.3.11.3, p 4-45, lines 4-5 – delete or reword “and is either undergoing decommissioning or is in safe storage awaiting decommissioning” from the second sentence. SAFSTOR or safe storage is a form of decommissioning. (CL-09/29)

**Response:** *Section 4.3.11.3, “Evaluation,” was reworded eliminating the misperception that safe storage is not decommissioning.*

**Comment:** Tables 4-6 and 4-7, p 4-71 – footnote “d” is not used in the tables, but probably belongs next to the 960 value for the number of shipments from a PWR using SAFSTOR. (CL-09/30)

**Response:** *Tables 4-6 and 4-7 were extensively revised and footnote “d” referring to truck and rail shipments is no longer used.*

**Comment:** Section 4.3.18.2, p 4-72, lines 38-41 – other irretrievable resources include gases and tools, but these resources are also minor. (CL-09/31)

**Response:** *Section 4.3.18.3, “Evaluation,” was revised and “gases” and “tools” were added to the text.*

**Comment:** Section 6.1, p 6-1 – for plants shutdown before existing decommissioning rules were adopted, the environmental reviews may not be in the PSDAR as discussed in this section. In such cases environmental aspects not previously addressed that need to be addressed will be covered in the LTP. (CL-09/32)



**Response:** *For plants that permanently ceased operation before the 1996 rule, the Decommissioning Plan and the Environmental Report become the PSDAR. Decommissioning activities at all permanently shutdown facilities are substantially underway. The major impacts, if any, that may not have been covered by the Decommissioning Plan and the environmental report (such as impacts to minority and low-income populations surrounding the facility) have already occurred. In addition, the staff has been sensitive to protected species at existing decommissioning sites with several informal consultations occurring over the past several 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:** Table F-1 The site area for Fermi 1 is listed as 1,120 acres. That is the size of the Fermi 2 site; Fermi 1# is on a portion of that site. The original Fermi 1 site was 900 acres. Currently, the portion of the site considered to be the Fermi 1 nuclear facility on the Fermi 2 site is less than 4 acres. (CL-09/34)

**Response:** *The revised area values were incorporated in Table F-1.*

**Comment:** Fermi 1's cooling water source was Lake Erie. Saxton's area is listed as 1.1 acres, however, the text reported San Onofre as having the smallest site. Also, footnote "b" should be applied to the "Cooling System" header, rather than "Cooling Water Source." (CL-09/35)

**Response:** *Table F-1 was corrected to include Lake Erie as the Fermi 1's cooling water source. The staff chose to list the area of the original licensed site for Saxton. Footnote "b" was changed to "cooling system".*

**Comment:** Table F-2, p F-4 – Fermi is in Michigan, not Ohio. (CL-09/36)

**Response:** *Ohio was changed to Michigan for Fermi in Table F-2.*

**Comment:** Section G.2.1, p G-13 & G-19 – the conclusion reached that the doses for SAFSTOR and DECON are not substantially different is partly due to which decommissioning plants were selected to be evaluated. (CL-09/43)

**Response:** *In some cases, data for different categories of facilities were limited, and the data presented represents the best information currently available. All data received from decommissioning facilities was included in the estimates. 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:** Tables E-3, E-5, H-1 and H-2 – some additional activities, for example, system dismantlement and large component removal, could potentially impact air quality. Provisions are needed for portions of these activities to prevent adverse impacts. (CL-09/49)

**Response:** *Typically, such activities are conducted inside enclosed structures with monitored release points and are considered under the category "Maintain Effluent and Environmental Monitoring Program." 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:** Table H-2, p H-17 – in the "Impact and Summary of Findings" section, "water use" should be changed to "air quality." (CL-09/50)

**Response:** *"Water use" was changed to "air quality" in Table H-2.*

**Comment:** Section J.1.1, p J-1 – add, "selected" before "facilities" in the first sentence of the first paragraph. Identify the time period used for the comparison in the second paragraph. (CL-09/56)

**Response:** *The recommended revision has been made in part. The word "selected" has been added in the text. The time period considered in the analysis is from the shutdown of the plant. Section J.1.1 was revised.*

**Comment:** Table J-1 – add footnote "c" to Fermi 1. (CL-09/57)

**Response:** *Footnote "c" was added under Fermi 1 in Table J-1.*

**Comment:** Section 4.3.9.1, page 4-33, refers to the licensee's FSAR. Suggest adding the words "or equivalent" after "FSAR" since some licensees have a defueled safety analysis report (DSAR) instead of a FSAR. (CL-15/2)

**Response:** *The phrase "or equivalent" was added after "FSAR" in Section 4.3.9.1, "Regulations".*

**Comment:** Section 4.3.12.1, page 4-47, second line – Add a period after the word "effects" and begin the next sentence with the word "Socioeconomic." (CL-15/3)

**Response:** *The text was revised in Section 4.3.12.1, "Regulations," consistent with the above comment.*

**Comment:** The following Conclusions sections discuss environmental impacts that may have

small, moderate or large impacts: 4.3.1.4 (Onsite/Offsite Land Use), 4.3.5.4 (Aquatic Ecology), 4.3.6.4 (Terrestrial Ecology), 4.3.9.4 (Radiological Accidents), 4.3.10.3 (Occupational Issues), 4.3.12.4 (Socioeconomics). The FGEIS is not clear what, if any, actions a licensee should take depending on if the impacts are small, moderate or large. (CL-15/4)

**Response:** *The Supplement was revised to explain those issues that are considered generic and have more than one level of significance. Section 4.3 was changed for clarification.*

**Comment:** It is not always clear when a particular decommissioning activity or site/operating condition falls within the envelope of environmental impacts described in Section 4.0 and when that activity or condition would require further analysis. (CL-16/2)

**Response:** *Chapter 4 was extensively revised to more clearly define the envelope of generic impacts. However, the comment is too general to provide a specific answer. The comment did not provide new information relevant to this supplement and will not be evaluated further. The comment did not result in a specific change to the Supplement.*

**Comment:** The Supplement should address how the environmental analysis of decommissioning activities takes into account changes in the environmental parameters of the site during plant operation. (CL-16/4)

**Response:** *The Supplement has taken into account the changes in the site environment during the plant's operation. A generic environmental impact statement is a method of evaluating the impacts of similar activities at similar facilities resulting in similar impacts. Changes in the site environment during the plant operational period are not so significant as to cause the impacts of similar activities at similar facilities to be significantly different. 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 Supplement should provide more specific guidance to licensees regarding the level of a particular decommissioning activity, or the site conditions in which an activity is occurring, which would trigger a site-specific NEPA analysis of the activity by the licensee. For example, with regard to levels of activity that would require a site-specific analysis, the Supplement should more specifically define what constitutes a major transportation upgrade. With regard to site conditions, it should define how much time may pass after the previous disturbance of an aquatic or terrestrial ecosystem before a site-specific analysis is necessary, or how recent the ecological assessment of that ecosystem must be to rely on the Supplement instead of a site-specific analysis. This will facilitate both licensees' evaluation of environmental impacts in required submissions such as the Post Shutdown Decommissioning Activities Report (PSDAR) and the License Termination Plan (LTP), and NRC's development of site-specific NEPA documents. (CL-16/6)

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**Response:** *Chapter 4 was extensively revised to more clearly define when a site specific analysis is required.*

**Comment:** Response to Comment No. 6-C, page A-13, indicates that impacts from potentially contaminated sediment are addressed in the Supplement, but we did not find this information. (CL-16/8)

**Response:** *The staff response in the scoping summary report (see comment 6-C, page A-13) referred to evaluation of the impacts of potentially contaminated sediment within the site boundary. Onsite contaminated sediments are normally addressed in detail during the license termination plan review and is not addressed in any detail in this Supplement. The NRC staff does not normally require remediation of offsite sediments unless they pose a threat to public health and safety. The plants were licensed with the expectation that there would be routine releases to the air and water due to normal operation. These releases are limited to ensure the public health and safety. Offsite contamination is monitored and remediation is not warranted. 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:** Page 2-5, Section 2.2, Line 10. This section should note that state or local requirements may be more restrictive than NRC's. (CL-16/16)

**Response:** *The text in Section 2.2, "Summary of Current Regulations," was revised to recognize that state or local requirements may be more restrictive than NRC's requirements .*

**Comment:** Page 3-17, Section 3.2.1, Lines 32-33. Please revise the document to clarify that while the evaluation of ISFSIs is outside the scope of the GEIS, it should be noted that the DECON alternative does not necessarily completely eliminate the need for long-term security and surveillance of a facility; an ISFSI at a decommissioned facility will require long-term security and surveillance. (CL-16/21)

**Response:** *It is stated (Table 1-1) that ISFSI maintenance is an activity that may be separately licensed under 10 CFR Part 72 and is out of scope. It is further discussed in Section 1.3, "Scope of This Supplement." The statement in Section 3.2.1, "DECON," is correct. The facility being referred to is the reactor facility and not the ISFSI, which is considered as a separate facility. 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:** Page 3-29. Lines 29-39 repeat lines 11-21. (CL-16/22)

**Response:** *The redundancy in the lines has been eliminated.*

**Comment:** Page 4-57, Section 4.3.13.4, Lines 36-38. The environmental sections of some PSDARs submitted to date have not provided detailed information. The Supplement should elaborate on the "appropriate information" that licensees should provide relating to environmental justice in the environmental section of their PSDARs to enable NRC to obtain sufficient information on potential environmental justice issues at decommissioning facilities. (CL-16/68)

**Response:** *The requirements for submitting the PSDAR can be found in 10 CFR 50.82(a)(4)(I). Guidance on what should be in the PSDAR can be found in Regulatory Guide 1.185, "Standard Format and Content for Post-Shutdown Decommissioning Activities Report," dated August 2000. The staff plans to update Regulatory Guide 1.185 subsequent to publishing Supplement 1 to NUREG-0586, with guidance on including environmental justice considerations in the PSDAR. 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:** Page 4-69, Section 4.3.17.2, Line 5. What is meant by "not large enough to destabilize the important attributes of the system?" (CL-16/71)

**Response:** *In terms of transportation impacts, MODERATE impacts are those that would result in noticeable changes such as increased traffic or increased road maintenance requirements, but would not result in the need for major transportation system modifications, cause substantial changes in local traffic flow, or cause a significant increase in traffic fatalities or public radiological dose. Section 4.3.17.2 was consistent with the above explanation.*

**Comment:** Pages 4-72 to 4-73, Section 4.3.18. The discussion of irretrievable resources more properly belongs in a section that summarizes environmental consequences. The Supplement could benefit from having such a section as was done with the recently issued draft NMSS guidance document on NRC preparation of NEPA documents. (CL-16/72)

**Response:** *This section summarizes irreversible environmental consequences for impacted areas. The reader is referred to Table ES-1 for a summary of the environmental impacts of decommissioning. NRC has not determined that combining the discussion of irretrievable resources with a summary of environmental consequences would substantially improve 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.*

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**Comment:** Page 4-72, Section 4.3.18, Line 9. It seems inappropriate to include concrete as an irretrievable resource. (CL-16/73)

**Response:** *Section 4.3.18, "Irretrievable Resources," was revised and concrete was eliminated as an irretrievable resource.*

**Comment:** Page 4-72, Section 4.3.18.1, Line 14. The Supplement states that there "are no regulations that deal specifically with the concept of irretrievable resources." It is unclear what is meant by this statement. The following statutory and regulatory provisions pertain to irreversible and irretrievable resources in the NEPA context: —NEPA ' 102(2)(C)(v), 42 U.S.C. ' 4332(2)(C)(v);—40 CFR 1502.16 (CEQ regulations); and,—10 CFR, Part 51, Subpart A, Appendix A (NRC regulations). (CL-16/74)

**Response:** *Section 4.3.18.1, "Regulations," was revised. The first sentence was removed and the pertinent references were added to the section.*

**Comment:** We would like to comment on the draft NUREG to correct an error in Table 4-3, line 21 regarding the Cost Impacts of Decommissioning for Rancho Seco. Line 21 should read:

Rancho Seco 913MWe PWR DECON \$394.

Please refer to our letter submitted to the NRC Document Control Desk dated 3/26/01 entitled Rancho Seco Report on Decommissioning Funding Status. On page 2 of the letter we stated:

"...Their [TLG] estimate was \$495.4 million in 2000 dollars. The portion of this total that is non NRC-defined decommissioning activities related to non-radiological dismantlement and management and storage of spent fuel is \$101 million, most of which is related to fuel storage costs..."

SMUD, when it first established its decommissioning fund, included radiological dismantlement costs and costs related to storing spent fuel. Therefore, \$495m -\$101m leaves \$394 million for equivalent cost discussed in Table 4-3 of the NUREG. (CL-18/1)

**Response:** *Table 4-3 was revised to reflect the new estimate for decommissioning.*

**Comment:** The Figure 1-1, "Decommissioning Timeline" should also reflect the 60 year window, mentioned in 10CFR50.82(a)(3), that starts from the permanent cessation of operation. (CL-30/2)

**Response:** *Figure 1-1 was revised to reflect the sixty year period for decommissioning.*

**Comment:** Revise the first part of the last sentence on page 1-5 to read: If a licensee chose to operate the ISFSI under a Part 50 license, they could choose to continue under the Part 50 license, or by way of license amendment request. (CL-30/3)

**Response:** *Chapter 1, "Introduction," was revised to accurately reflect the requirements in 10 CFR Part 50 and Part 72.*

**Comment:** Under the description of the Turbine building (on page 3-6) revise the last two sentences to read: Primary coolant is not circulated through the turbine building systems in PWRs. However, it is not unusual for the turbine building to become mildly contaminated during power generation at PWRs. (CL-30/5)

**Response:** *Section 3.1.2, "Types of Structures Located in a Nuclear Power Facility," was revised and the last two sentences in the description of the "Turbine building" were changed as proposed above.*

**Comment:** Add the following sentence to the first paragraph in section 3.1.4: Most of the contamination in the reactor coolant system is from the activation of corrosion products and not fuel. (CL-30/6)

**Response:** *Section 3.1.4, "Formation and Location of Radioactive Contamination and Activation in an Operating Plant," was revised and the above sentence was added to the text.*

**Comment:** Revise the second to last sentence on page 3-15 to read: The entire structure (or portions) must be removed..... (CL-30/7)

**Response:** *Section 3.1.4, "Formation and Location of Radioactive Contamination and Activation in an Operating Plant," was revised consistent with the above comment.*

**Comment:** The last sentence on page 3-15 is only true if corrosion products are included. The sentence should be revised to read: If corrosion products are included, the radioactive decay..... (CL-30/8)

**Response:** *Radioactive corrosion products are the result of activation and can be considered activation products, therefore the staff chose not to make a change to the text of 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.*

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**Comment:** The last two paragraphs on page 3-15 need to be rewritten. The discussion of contamination and activation needs to be clarified. If requested, CYAPCO will work with the Commission to rewrite this text. (CL-30/9)

**Response:** *The staff has determined that for the purpose of this Supplement the explanation of contamination and activation is adequate. 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:** Yankee Rowe should be added to the list of plants mentioned in the second to last paragraph of page 3-26. The Yankee Nuclear Power Station was one of the plants in the AEC's Demonstration's Program. Yankee Rowe's license number is DPR-3. (CL-30/10)

**Response:** *Section 3.3.1, "Plant Sites," was revised and Yankee Rowe was added to the list.*

**Comment:** The second to last paragraph on page 3-32 discusses the creation of nuclear islands. Nuclear islands are not primarily created because of security reasons. The real benefit in creating nuclear islands is to not interfere with spent fuel storage. The purpose for creating a nuclear island is to provide a facility for the safe long-term storage of spent fuel, which is independent of the remainder or the rest of the facility. The purpose of the modifications is to divorce the spent fuel cooling function from dependence on systems which must be dismantled as part of the overall decommissioning process. (CL-30/11)

**Response:** *Section 3.3.3, "Decommissioning Process," was revised to more accurately describe the reasons for establishing a nuclear island.*

**Comment:** Expand the discussion about Stage 4 of the decommissioning process. This discussion should contain as much description as the descriptions under stages 1 through 3. (CL-30/12)

**Response:** *The staff chose not to expand the discussion of Stage 4 of the decommissioning process. Activities during Stage 4 result in minimal environmental impact and focus on demonstrating that the previous decommissioning activities have resulted in site radiological conditions that allow termination of the license. 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:** Delete "groundwater" from the first sentence in section 4.3.3.4. Releases are not made to groundwater under NPDES permits. NPDES discharge points discharge to surface water locations. (CL-30/13)



**Response:** *Section 4.3.3.4, "Conclusions," was revised and the term "releases" was removed from the first sentence. Section 4.3.3 does consider impacts to groundwater due to decommissioning; therefore, it is appropriate that the "Conclusions," Section 4.3.3, include groundwater.*

**Comment:** On Pg 3-17 there is a discussion of the advantages of the DECON alternative for decommissioning. One advantage of DECON is not discussed and should be. Generally speaking the shorted lived nuclides are easier to detect because of their beta/gamma emissions, versus the alpha emissions of longer lived nuclides. The difficulty of detecting the alpha emitters will increase analysis costs and increase the difficulty of performing surveys. Ultimately the cost of providing RP coverage and of performing the Site Characterization and Final Status Survey will also be increased. (CL-31/6)

**Response:** *Section 3.2, "Decommissioning Options," provides a very general comparison of the various options for decommissioning, including the advantages and disadvantages of each option; therefore, the staff has determined that the suggested change provides detailed advantages not consistent with the other options.*

**Comment:** Table F-1 lists the total site area for Peach Bottom Unit 1 to be 620 acres. 620 acres is the total site area reported in the Peach Bottom Unit 2 and 3 Updated Final Safety Analysis Report. However, Table F-2 reports the total site area for Peach Bottom Units 2 and 3 to be 618 acres. Table F-2 should be changed to reflect the total site area for Peach Bottom Units 2 and 3 to be 620 acres. (CL-31/14)

**Response:** *Table F-2 was revised and the value 620 acres was used.*

**Comment:** On page L-6 of Appendix L, line 4 refers to criticality accident monitoring requirements described in 10 CFR 7.24. Criticality accident monitoring requirements are described in 10 CFR 70.24. This typographical error should be corrected. (CL-31/16)

**Response:** *The reference was corrected to 10 CFR 70.24.*

**Comment:** On page L-6 of Appendix L, line 17 refers to 10 CFR 50.73 as requiring a licensee event report within 30 days. 10 CFR 50.73 was recently revised to require a licensee event report within 60 days. This change should be made to Appendix L. (CL-31/17)

**Response:** *Appendix L was revised to reflect the 60 day limit.*

**Comment:** All spent fuel at Dresden Unit 1 will be moved to dry storage on site by the end of the first quarter of 2002. This change needs to be reflected in Table 3-2. (CL-31/19)

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**Response:** *Table 3-2 was revised to indicate that all the Dresden Unit 1 fuel is in dry storage.*

**Comment:** And speaking of Appendix F, by the way: please note in Table F-2 that the Callaway plant is located in Missouri, not in Montana. (CL-51/6)

**Response:** *Appendix F was revised and Montana was changed to Missouri.*

### O.6.2 Clarification Questions

**Comment:** I had a question on the difference between the 1988—or one of the differences between the 1988 version and this supplement. The scope of facilities that are being addressed is much smaller, it's mainly just nuclear power reactors and I wanted to know for all the other facilities that were referenced in the '88 document and some of those included like the MOX facilities. How will those be addressed? Are they going to be addressed in a different type of document down the road or—I'm just asking along those lines. (AT-A/1)

**Response:** *This Supplement only addresses permanently shutdown commercial nuclear power reactors. The environmental analysis for the other facilities in the 1988 GEIS is still valid. As deemed necessary and appropriate, NRC will update the environmental impact assessments for the decommissioning of other facilities evaluated in the 1988 GEIS but not included in this Supplement. MOX fabrication and utilization facilities will have a separate environmental assessment prepared by the NRC staff. 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 last paragraph in the Conclusions section of the Executive Summary, and page 2-3 of Section 2.2.1, state that a licensee would have to submit a license amendment request if environmental assessments are outside the bounds of the GEIS or if the environmental impacts of a decommissioning activity have not been previously reviewed. What is the licensing document that should be modified in the license amendment request? Section 2.2.1 states the Environmental Report should be revised, but the PSDAR may be a more appropriate document. (CL-15/1)

**Response:** *The Environmental Report is the appropriate document that needs to be updated. The PSDAR requires a discussion of the reasons for concluding that the environmental impacts associated with site-specific DECON activities will be bounded by previously issued environmental impact assessments. It does not require the analysis of specific impacts related to specific activities. However, based on the results of the licensee's environmental review, the PSDAR may also require updating. The license amendment would request the incorporation of*

*a license condition in the license that would allow the activity to proceed. 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:** Will this Supplement replace entirely the previous NUREG-0586? (SF-A/1)

**Response:** *No. This Supplement will entirely replace the evaluation of environmental impacts from decommissioning activities of nuclear power facilities. The Supplement will be a stand-alone document and supercedes the environmental impacts to power reactors described in the 1988 GEIS. This Supplement goes beyond the 1988 GEIS and considers the permanently shutdown high-temperature gas-cooled reactors and the fast breeder reactors. This Supplement does not cover research and test reactors or power reactor facilities that have shut down due to major accidents (i.e., Three Mile Island). It also does not cover other types of fuel-cycle 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'm a little confused because if a licensee is outside the bounds or in an area that is beyond what has been previously reviewed, we're required to submit a licensee amendment request. Now I'm confused, since you've got, for these different criteria, a small impact, and a moderate impact, and a large impact, what is the bounds? (SF-A/2)

**Response:** *If the evaluation of any activity indicates that it could potentially result in an environmental impact that is greater than that predicted by the Supplement, then the licensee needs to submit a license-amendment request. For example, if the change to the facility would result in a moderate impact to the environment and the Supplement predicts a small impact, then the licensee needs to submit an amendment request. 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 reaching your findings about these impacts, these environmental impacts, the generic issues and impacts, I'm wondering what the baseline you were using was to measure those impacts against. In other words, were you comparing the impacts to the site before the nuclear facility was built or during its peak period? And in that case were the impacts considered cumulative or stand alone? (SF-B/1)

**Response:** *The impacts were compared against those that existed at the time the facility permanently ceased operation. The impacts identified at the time that the facility permanently ceased operation are cumulative impacts from plant construction through operation. Therefore, comparing decommissioning impacts to impacts at the time the plant ceased operation would*

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*include cumulative impacts. 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:** My question concerns the last comment that you just made about that no activities can be performed during decommissioning that would result in significant environmental impacts not previously reviewed. Would you determine this from the submission of the PSDAR? Is that how you would determine if anyone was going to do anything that wasn't previously reviewed? **(CH-A/1)**

**Response:** *When the licensee prepares the PSDAR, they will identify the major activities that they plan to perform during decommissioning. They must evaluate the environmental impacts from decommissioning activities and compare those impacts to the results of the GEIS on decommissioning and other site-specific environmental impact statements. The licensee is required to evaluate any planned decommissioning activity against any previous environmental assessments prior to undertaking that activity [10 CFR 50.82(a)(b)(ii)]. the requirement for the evaluation is contained in the facility's written procedures. Documentation that such an evaluation has been conducted is available for NRC review during a site visit or inspection. 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:** Once the work is performed, is there monitoring to make sure they're in compliance with the PSDAR? If they're actually acting, doing what they said they were going to do? **(CH-A/2)**

**Response:** *During the decommissioning process, NRC inspectors will periodically conduct special inspections of specific activities at the site. Site visits and inspection will be more frequent for plants that are undergoing decontamination and dismantlement and less frequent for plants that are in storage mode. Since the PSDAR is primarily an information document prepared to inform the public and NRC of the licensee's plans and schedule, it is not normally utilized by the NRC to determine compliance with regulations. 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:** You said that a licensee could go ahead and dismantle without formal approval and I thought that the licensee based on the document, the licensee had to submit the PSDAR and then there was a 30-day public process. Were you not counting that because that didn't directly relate to the question? **(CH-A/16)**

**Response:** *Initial decommissioning activities such as draining systems, removal of some components, pumps, tanks, disposal of resins, and surface contamination removal can occur at any time, including immediately after permanent cessation of operations. However, no major decommissioning activities may take place until 90 days after the PSDAR has been submitted. Major decommissioning activities are defined as "any activity that results in permanent removal of major radioactive components, permanently modifies the structure of the containment, or results in dismantling components for shipment containing greater than Class C waste." A description of the decommissioning process is given in Section 3.2. 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:** What I was asking you was then cumulative impacts in terms of the plant during its operating period with the decommissioning activities added onto it, or do you mean something else? (SF-B/2)

**Response:** *For discussions of cumulative impacts, the NRC considered the terminology defined in 40 CFR 1508.7: "Cumulative impact is the impact on the environment which results from the incremental impact of the action [in the case of this Supplement, that is decommissioning activities] when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." Using this definition, the staff examined the impacts of decommissioning activity at NRC-licensed nuclear power facilities and made a cumulative assessment of decommissioning activities and other past, present, and reasonably foreseeable future activities at the sites. Section 4.0 of the Supplement has been changed for clarification.*

### **O.6.3 Statements for or Against Nuclear Power**

**Comment:** Georgians for Clean Energy promotes the shutdown of our unsafe nuclear power plants here in Georgia and the phase out of nuclear power nationwide. (AT-A/8)

**Response:** *Shutting down operating facilities is outside the scope of this Supplement, which deals with facilities that have permanently ceased 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:** I'm now concerned about the costs, about all the broken promises, because these all sound—all these systems sound so good. But I can remember—I'm old enough to remember when this was going to be clean, safe and cheap. Electricity was going to be too

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cheap to meter. That sticks with me. And we know that it's as expensive as anything possibly could be when you consider the whole—the whole cycle from the mining of the uranium to what happens afterwards. There's a huge process. (AT-D/10)

**Comment:** The nuclear issue is the most important issue facing humanity and has been since the atom was first split. The nuclear issue is the Sword of Damocles over the planet and all future generations should we survive the next decade. (CL-20/2)

**Comment:** Furthermore, no new nuclear plants should be allowed or built as they will just add to the existing contamination, and all operating plants should be shutdown to stop further "waste" - such as plutonium-generation. (CL-20/115)

**Comment:** The nuclear power industry was a colossal mistake to begin with, as we all know. (CL-33/2)

**Comment:** The NRC must resist the pressure of the nuclear industry. If their profits are waning, they have had their turn. The citizens of the U.S., who pay everyone's way, have a right to expect a healthy environment, and a right to fight for it within the United States legal system. (But what a shame that a fight is ever needed.) (CL-36/8)

**Comment:** It ought to be equally obvious that without public subsidy (via Price-Anderson) nuclear power is economically untenable. (CL-42/4)

**Comment:** It ought to be equally obvious given these factors the complete phase-out of nuclear power should be a high priority. Alternative power sources such as wind, solar, hydrogen fuel cell [and conservation] should be vigorously pursued in its stead. (CL-42/5)

**Comment:** The enterprise of electricity generation using nuclear fission requires public subsidy. Without Price-Anderson protection, nuclear power would be economically untenable. (CL-46/5)

**Comment:** Consideration of these factors must be fully and publicly discussed before exposing our citizens to additional exposures through development of new nuclear generation facilities. The complete phase-out of nuclear power should be considered based on objective analysis of health and economic effects including probability evaluation of all possible accidents and incidents, and comparison of all potential energy sources such as wind, solar, hydrogen fuel cell and including conservation. (CL-46/6)

**Comment:** As we have stated earlier, the methods used to decommission a nuclear plant will affect not only the communities of today but also the livelihood of future generations. The nuclear industry is leaving humankind a legacy of devastation—epitomized by its long-lived and

highly dangerous nuclear waste. They are unable to solve their waste problem and now, when faced with the eventual shutdown of their plants, are unwilling to take measures to ensure that the public is protected. (CL-08/32)

**Response:** *The comments relate to nuclear energy in general and are outside the 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:** Bush is stripping us all of those safeguards we all need to protect citizens--and this includes you. He has only corporate interests--the nuclear power industry being one. (CL-34/3)

**Response:** *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.*

#### **O.6.4 Comments in Support of Decommissioning**

**Comment:** I certainly heard Eva loud and clear, that the amount of exposure for decommissioning is less than for operating reactors. So our organization is certainly in favor of decommissioning. Let's just do it right. (AT-B/18)

**Comment:** We'd like to see the decommissioning of nuclear plants go forward, and we want it to go forward in the safest, most environmentally sound manner. (CH-A/4)

**Comment:** As a preliminary matter, we support the prompt decommissioning of nuclear power plants and urge the U.S. Nuclear Regulatory Commission ("NRC") to ensure that decommissioning goes forward in the safest, most environmentally sound manner. (CL-11/1)

**Comment:** We would like to make it abundantly clear that we see decommissioning to be the most appropriate and responsible action to take with all nuclear reactors. (CL-47/3)

**Comment:** Certainly, every reactor shut down is another step away from further creation of radioactive waste, the ever-present possibility of nuclear terror (be it a reactor accident or terrorist attack) and the continuing irradiation of our everyday lives. (CL-47/5)

**Comment:** Our organizations are fully supportive of the permanent closure of nuclear power reactors. (CL-48/7)

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**Comment:** Our goal is to require that nuclear facility owners and operators, to the best of their ability, function as the good neighbors and responsible corporate citizens they claim to be. That would include fully encapsulating and isolating all of the wastes and radioactively and chemically contaminated materials resulting from their operations and decommissioning. It includes doing everything possible to: 1) Prevent public exposures in the current and future generations to radiation and chemicals from nuclear power production, waste management, transportation, "cleanup" and decommissioning; 2) Prevent additional environmental contamination both onsite and offsite and to remediate and minimize that which has already occurred. (CL-48/8)

**Response:** *The comments are in support of safe, efficient, and timely decommissioning of permanently shutdown power reactors. 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.6.5 General Comments

**Comment:** I think this is a good beneficial effort to have this generic supplement. I think it's going to help do evaluations of the environmental consequences of what we're doing. It's going to make sure in some cases that we look at the right things and don't skip anything. I do agree with the overall conclusions of the document. And also, I agree on what should be considered generically and what is site-specific because there are some site-specific issues. (CH-D/1)

**Comment:** For the next comment, for older plants, in some cases, there are some differences in the physical configuration from what was described and assumed. An example is like there may not be active ventilation systems. We are just going to have to install those systems as needed to properly protect the air quality and so forth. (CH-D/9)

**Comment:** Also, in the licensing arena, our documents may not include what has already been assumed to be in the documents for plants that recently shutdown. And in those cases, like for the environment hazards, if we don't have it already covered in the document, we're going to have to cover it in the license termination plan. So, I think what will be covered is just, it may not already be covered in the document. (CH-D/10)

**Comment:** Overall, Maine Yankee (MY) believes that the Supplement provides a fair update of the sections of the 1988 NUREG versions relating to pressurized water reactor, boiling water reactors, and multiple reactor stations. (CL-04/1)

**Comment:** Draft supplement 1 represents a useful update of the environmental impacts of decommissioning based upon over 200 facility-years' worth of actual decommissioning experience accumulated by nuclear facilities since the NRC published the initial GEIS in 1988.



NEI concurs with the GEIS conclusions, which found that for the "...environmental issues assessed, most of the impacts are generic and SMALL for all plants regardless of the activities and identified variables..." (CL-05/1)

**Comment:** Overall, Detroit Edison agrees with the conclusions in the draft NUREG-0586, Sup 1. The supplement will be helpful and updates the previous Generic Environmental Impact (GEIS) on Decommissioning to accommodate changes in regulations and experience gained in recent decommissioning activities. (CL-09/1)

**Comment:** In conclusion, Detroit Edison thinks the draft supplement to the GEIS on decommissioning of nuclear facilities is a good effort and agrees with the overall conclusions. Some details should be revised to improve accuracy and to ensure planned decommissioning activities, intended to be covered by this supplement, are fully addressed. This will avoid future questions on whether activities are covered and/or bounded by this GEIS supplement. (CL-09/58)

**Comment:** EPA supports the approach NRC has taken in the Supplement of establishing an envelope of environmental impacts resulting from decommissioning activities and identifying those activities which can be bounded by a generic evaluation and those which require a site-specific analysis. This approach concentrates the environmental analysis on those activities with the greatest likelihood of having an environmental impact. EPA also commends NRC for drafting a Supplement which facilitates public understanding in its use of plain English and explanation of technical terms. (CL-16/1)

**Comment:** Also, based on information presented in various industry forums, several numbers quoted for some of the other plants may be inaccurate. Each plant should verify the numbers for accuracy. (CL-18/3)

**Comment:** Just as anyone with common sense can tell this Draft Supplement 1 to NUREG-0586 will have dire consequences if implemented in its current form. (CL-20/3)

**Comment:** Exelon continues to maintain that providing guidance, which addresses environmental issues generically, provides the highest standard the public at large can use effectively to challenge industry to return power plant sites to beneficial use upon facility retirement. (CL-31/2)

**Comment:** Exelon believes the proposed Draft Supplement correctly concludes that most of the environmental issues assessed result in impacts that are generic and SMALL for all plants. We reach this conclusion based upon our experience decommissioning one BWR (Dresden 1),

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two PWR's (Zion Station), one HTGR (Peach Bottom 1), and our observation of other industry decommissioning projects. We have not seen to date - and currently do not expect to find - environmental impacts different from those addressed and bounded by this Supplement to the GEIS. (CL-31/1)

**Comment:** In general the draft supplement meets the goal of updating the GEIS to current decommissioning practices and dismantlement options. (CL-30/1)

**Comment:** There is still time to correct all the serious problems in the Draft, still time for the NRC to turn from the path of wickedness and ruin the Draft Supplement and GEIS will lead to if passed as is. (CL-20/118)

**Comment:** I would point out that on pages C-1 and C-2 are the names of those responsible for this abomination for reference in case of future lawsuits, so the public should make a note of that (this is, after all public record, what I have written). (CL-20/117)

**Comment:** It appears that the nuclear industry has written its own ticket, as usual, on the issues in the Draft. P. E-5 notes the help from the Nuclear Energy Institute in gathering information. (CL-20/64)

**Comment:** The NRC is charged to protect the quality of the human environment and we ask that they can—that they do all they can to uphold that charge. The current draft GEIS is not protective and needs major improvement. (AT-A/44)

**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:] Planned Operating Life of a Nuclear Generating Stations. (CL-02/4)

**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:] Plant Valuation. (CL-02/8)

**Comment:** Did the Nuclear Regulatory Commission "encourage" its economists, accounts, and actuaries to ignore the impact of deregulation and plant devaluations on local communities? Is it unreasonable to ask the NRC to view decommissioning through a global lens that accounts for economic reality, objective science, and fiduciary accountability? Or is the Commission intent on viewing radiological decommissioning through surrealistic prescription monocles prescribed by the Nuclear Energy Institute, the Edison Electric Institute, Electric Power Research Institute, and the Institute for Nuclear Power Operations? (CL-02/14)

**Comment:** At some point, the NRC will have to create a decommissioning vessel the incorporates reality as its guide. Frankly, the GEIS resembles a script for "Abbott and Costello" prepared by Norman C. Rasmussen, Bernie Snyder and Ken Lay. (CL-02/16)

**Comment:** The document can be condensed in to three words, namely: "DUMP AND COVER." (CL-20/1)

**Comment:** Deregulation has already had serious negative impact on local municipalities this will be just another blow. (CL-25/12)

**Comment:** To even think that decommissioning nuclear power plants' regulations via presidential fiat is acceptable is beyond logic and reason. (CL-34/1)

**Comment:** I find the proposals in Supplement 1 to the Generic Environmental Impact Statement on Decommissioning unrealistic when it comes to the health of United States citizens at the time of decommissioning and to those living years later. (CL-39/1)

**Comment:** I guess one of the reasons I wanted to comment on this "Draft Supplement" is because it so dramatically reflects the backward world of Alice in Wonderland and of commercial nuclear power: "Sentence first --- verdict afterwards." Make a permanent mess first --- try to figure it out afterwards. (CL-51/27)

**Comment:** We concur with and adopt by reference the comments of the Nuclear Information and Resource Service, submitted by Paul Gunter. (CL-52/1)

**Comment:** I don't really know why I am bothering to write all this, as the NRC will ignore it anyway, but hope springs eternal as they say. If we don't have comparisons, we can't have at least some idea of what constitutes the start of a return to a more unpolluted site, and we can't establish what needs bulldozing and taken to a radioactive waste national sacrifice area. (CL-20/11)

**Comment:** Additionally, Public Citizen is concerned that the provisions outlined in the Supplement might allow owners and operators of nuclear power reactors to reduce or completely evade their civic, environmental, economic and legal responsibilities. (CL-47/2)

**Comment:** (The Western Shoshone Nation, AKA the Nevada Nuclear Test Site) that blew radioactive fallout across the nation causing serious illness, birth defects and cancers, besides doing the same to some nearer the site in Nevada. The only thing Las Vegas worried about, was if the tests shook their gambling tables according to press reports. When the wind blew towards Las Vegas they tried not to test. For Nevada to now whine that they don't see why they should get the spent nuclear fuel as they have no reactors-power reactors-is obscene,

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considering that a huge Curie quantity of the spent fuel was generated making/creating the plutonium and the tritium for the nuclear weapons most of them supported and didn't care that the fallout dumped on their fellow planetary citizens. The fact that there were, and are, some small groups who were, and are against the weapons and the testing and the horrors of nuclear power does not alter the fact that the state didn't protest. The states current protests, even if valid for other reasons, ring hollow against that history of nuclear collaboration, when they use the "no power reactor" excuse to keep the waste out. It is time history was set straight.  
(CL-20/82)

**Comment:** Have you all no shame? (CL-20/108)

**Comment:** This is ridiculous! (CL-22/1)

**Comment:** You do not need to further endanger our lives while the polluters go scott free.  
(CL-34/5)

**Comment:** These admonitions have been presented to the NRC repeatedly in many Commission and staff meetings, agency panels and workshops, public meetings, legal proceedings. Until they are heard, adopted, and adhered to, this Supplement, the Final GEIS on Decommissioning of Nuclear Facilities and the Decommissioning Rule and NRC's radiation protection standards will continue to be inadequate and in violation of the applicable laws, including but not limited to the AEA, NEPA, and APA, cited above. All four should be withdrawn and entirely rewritten to provide true protection from radiological contaminations. (CL-52/25)

**Response:** *The comments are general in nature and 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:** We support the NRC's current efforts to update the GEIS for nuclear power plants to reflect the industry's experience in decommissioning and to more fully consider issues like partial site release and re-use of concrete rubble as fill. (CL-01/1)

**Response:** *Rubblization and partial site release are evaluated and discussed in the scope of the document in Section 1.3 and further addressed in Chapter 4, as appropriate. 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 the NRC evaluates the comments received on the GEIS, it should look beyond the actual decommissioning process and focus on what condition the site would be in following license termination. (CL-17/10)

**Response:** *Regulations regarding license termination are in 10 CFR 20, Subpart E. These regulations and ultimate goal of decommissioning is to ensure that the site will be in a condition suitable for future use in either a restricted or unrestricted capacity. 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:** If the possibility exists that radioactive material will remain onsite under an unrestricted or restricted use condition the GEIS should consider the associated long-term environmental impacts. (CL-17/11)

**Response:** *Regulations regarding license termination are found in 10 CFR 20, Subpart E. For sites that have been released for unrestricted use, there would be no mechanism for future contamination or radiological releases. Therefore, long-term environmental impacts would be negligible. In the event that the site is released for restricted use, the site would continue to be monitored until the levels have been reduced below 10 CFR 20, Subpart E limits. 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:** Public Citizen is very concerned about several aspects of this supplement to NUREG-0586, specifically those that could pose risks to public health, the public's right to participate in decisions that affect them, and environmental quality. (CL-47/1)

**Response:** *The description of impacts as site-specific or generic does not preclude local communities from participating. The commenter is referred to the Executive Summary for a description of "generic" and "site-specific." The public can raise issues using any of several methods. 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. The process is set forth in NRC's regulations in 10 CFR Part 2, "Rules of Practice of Domestic Licensing Proceedings and Issuance of Orders." 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 or 10 CFR). 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 potential use of plutonium fuel at the McGuire and Catawba reactors is not adequately addressed in decommissioning—in this decommission document. In fact, the costs of decommissioning are nowhere to be found. So we would request that there be a supplement right away before mistakes are made in licensing the use of plutonium fuel at the McGuire and

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Catawba reactors because the decommissioning impacts, including costs, and also including the additional radioactivity, the additional waste, those are real impacts that are basically left unaddressed in the generic environmental impact statement for decommissioning. (AT-B/9)

**Response:** *If a MOX Fuel program is adopted in this country then it may be considered in the next Supplement to the GEIS. However, at the present time the use of MOX fuel is speculative at best. 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 Oconee plant, which I'm near, which we've gone to visit, it scares me. I mean the reactors look like they're really solid. One thing they're going to do is cut into the wall to take—to change the steam generator. They're only going to put it back and somehow—is it going to be as strong as it was before? (AT-D/8)

**Response:** *The replacement of a steam generator at an operating facility 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:** It has come to my attention that the Nuclear Regulatory Commission is possibly compromising the security of our nation's future by making way for further build up of nuclear waste that will theoretically be safe in so many thousands of years. (CL-41/1)

**Response:** *Spent fuel maintenance and storage are outside the scope of this Supplement as discussed in Section 1.3, "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.*

## **Appendix P**

### **Public Meeting Transcript Excerpts and Written Comments**

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**1. Transcript of the Public Meeting on December 4, 2001, in San Francisco, California**

[Introduction, Mr. Cameron]  
[Presentation by Mr. Scaletti]  
[Presentation by Ms. Hickey]  
[Questions answered by Mr. Sackschewsky]  
[Questions answered by Mr. Masnik]  
[Questions answered by Mr. Zalcmán]

SF-A Mr. Sokolsky: David Sokolsky with Humboldt Bay Power Plant.

SF-A-1 Will this Supplement replace entirely the previous NUREG-0586?

Mr. Scaletti: It will replace in entirety -- or it's a standalone document for nuclear power reactors, yes.

Mr. Sokolsky: Okay.

Mr. Scaletti: The other facilities within -- NUREG-0586 is still applicable to those facilities.

Mr. Sokolsky: All right. That was my understanding in looking at this Draft Supplement, that anything from the previous NUREG is included in the Supplement that's applicable.

Mr. Scaletti: That's correct.

Mr. Sokolsky: So when we respond we no longer have to look at the previous issue, just this Supplement.

Mr. Scaletti: That is correct.

Mr. Sokolsky: Okay. Thank you.

SF-B Ms. Cabasso: My name is Jackie Cabasso. I'm the Executive Director of the Western States Legal Foundation.

SF-B-1 And I have a question for Eva which is that in reaching your findings about these impacts, these environmental impacts, the generic issues and impacts, I'm wondering what the baseline you were using was to measure those impacts against.

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In other words, were you comparing the impacts to the site before the nuclear facility was built or during its peak operating period? And in that case were the impacts considered cumulative or standalone?

Ms. Hickey: Okay. Let me make sure I understand your question. You want to know what the baseline was that we were evaluating against --

Ms. Cabasso: Um-hum.

Ms. Hickey: -- and then whether we looked at the impacts cumulatively.

Ms. Cabasso: Um-hum.

Ms. Hickey: What we were comparing against was, we would look at the impacts that were identified in any previously-written environmental impact statements, final environmental statements that the licensee had published, and any other environmental assessment that had been conducted during the operation.

So we were weren't necessarily looking at the impact; we were looking at the way the impacts might change from during operation, not necessarily from the way the plant was prior to operation. So we were comparing those impacts with other environmental impact statements that had previously been written.

And, yes, we did look at cumulative impacts.

SF-B-2 Ms. Cabasso: Now just could you elaborate on that a little bit? Because what I was asking you was then cumulative impacts in terms of the plant during its operating period with the decommissioning activities added onto it, or do you mean something else?

Ms. Hickey: Well, we looked at it in a variety of ways. We would look at whether the impacts from all of the activities -- well, okay. The radiological was kind of an easy one to establish. The impacts from all of the activities individually and then how cumulatively the radiological impact to the environment would end up.

We also looked at them across the issues, so we would look at activities -- at an activity and see -- I'm sorry. I'm having a hard time describing this. But we would look at them from -- at an activity and then look at water quality and how water quality might impact potentially air quality or any of the other issues. So from that perspective we looked at it cumulatively across all the issues.