NRC RESPONSE TO PUBLIC COMMENTS RELATED TO DRAFT REGULATORY GUIDE DG-4015 (PROPOSED REVISION 1 OF REGULATORY GUIDE 4.2, SUPPLEMENT 1)

PREPARATION OF ENVIRONMENTAL REPORTS FOR NUCLEAR POWER PLANT LICENSE RENEWAL APPLICATIONS

The Nuclear Regulatory Commission (NRC) has published a final rule that amends its environmental protection regulations by updating the Commission's 1996 findings on the environmental impacts of renewing the operating license of a nuclear power plant (78 FR 37282; June 20, 2013). The final rule redefines the number and scope of the environmental impact issues that must be addressed by the NRC and applicants during license renewal environmental reviews. This final rule also incorporates lessons learned and knowledge gained from license renewal environmental reviews conducted by the NRC since 1996.

On July 31, 2009 (74 FR 38117), the NRC published the proposed rule, "Revisions to Environmental Review for Renewal of Nuclear Power Plant Operating Licenses," for public comment in the *Federal Register*. The proposed rule would amend Table B-1, by updating the Commission's 1996 findings on the environmental impacts related to the renewal of nuclear power plant operating licenses, and other NRC environmental protection regulations (e.g., 10 CFR 51.53, which sets forth the contents of the applicant's environmental report). Together with the proposed rule, the NRC also published a notice of availability of the draft revised NUREG-1437, "Generic Environmental Impact Statementfor License Renewal of Nuclear Plants," (GEIS) (Agencywide Documents Access and Management System (ADAMS) Accession No. ML090220654); a proposed Revision 1 of Regulatory Guide (RG) 4.2, Supplement 1, "Preparation of Environmental Reports for Nuclear Power Plant License Renewal Applications" (ADAMS Accession No. ML091620409); and a proposed Revision 1 to NUREG–1555, Supplement 1, "Standard Review Plans for Environmental Reviews for Nuclear Power Plants" (ADAMS Accession No. ML090230497), in the *Federal Register* (74 FR 38238). All of the documents requested public comments.

The proposed rule provided a 75-day public comment period, with an end date of October 14, 2009. The NRC received requests to extend the comment period to provide the public more time to analyze and review the legal, regulatory, and policy issues covered by the proposed rule and supporting documents. On October 7, 2009 (74 FR 51522), the NRC granted these requests, and the public comment period for the proposed rule and the proposed revisions to the GEIS, the regulatory guide, and standard review plan was extended to January 12, 2010.

During the public comment period, the NRC conducted six public meetings to solicit comments on the proposed rule, draft revised GEIS, and related draft guidance documents. The official transcripts, written comments, and meeting summaries for the following public meetings are available electronically for public inspection at the NRC's Public Document Room (PDR) or

online in the NRC Library at **http://www.nrc.gov/reading-rm/adams.html**:

1) September 15, 2009, Atlanta, GA (ADAMS Accession No. ML092810007);
2) September 17, 2009, Newton, MA (ADAMS Accession No. ML092931681);
3) September 24, 2009, Oak Brook, IL (ADAMS Accession No. ML092931545);
4) October 1, 2009, Rockville, MD (ADAMS Accession No. ML092931678);
5) October 20, 2009, Pismo Beach, CA (ADAMS Accession No. ML093070174); and
6) October 22, 2009, Dana Point, CA (ADAMS Accession No. ML093100505).

A summary of these meetings is publicly available under ADAMS Accession No. ML093070141.

The NRC received 32 document submissions containing comments from industry stakeholders, representatives of Federal and State agencies, and other interested parties on the proposed rule and supporting documents.[1] Consequently, the NRC developed three separate comment-response documents: one for the proposed rule (NRC's Agencywide Documents Access and Management System (ADAMS) Accession No. ML111450013), draft revised GEIS (ADAMS Accession No. ML13106A242), and draft regulatory guide (this document) (ADAMS Accession No. ML111450010). In many cases, the commenter explicitly stated that a comment pertained to the proposed rule or one of the supporting documents. When such was not the case, the NRC staff used its professional judgment to decide which of the three comment-response documents best addressed the comment. In a few cases, a comment was included in a comment-response document other than that explicitly stated by the commenter because the NRC staff deemed it to be more appropriate.

Table 1 provides for each document submission the ADAMS Accession Number and commenter affiliation, name, and abbreviation. Comments submitted on the draft regulatory guide are grouped by category as listed in Table 2. The NRC has used a 3-box format to display the comment identifier, comment, and NRC response. The “identifier” is used to reference the specific comments within a document submission and is presented in the form XX–YY–ZZ, where:

XX represents the commenter abbreviation from Table–1 of this document (e.g., EPA, NEI1, and NYS AG),
YY represents the document submission number from the same table, and
ZZ represents the NRC-assigned sequential comment number[2]

For those comments contained in one or more attachments to a document submission, the identifier is presented in the form XX-YY(A)-ZZ, where:

XX represents the commenter abbreviation from Table–1 of this document,
YY represents the docment submission number from the same table,

[1] A document submission is a comment letter that contains one or more comments. Only three of the 32 document submissions contained comments pertaining to DG-4015.
[2] The NRC-assigned sequential comment number is noted in the right margin of the annotated copy of the document submissions (ADAMS Accession No. ML12095A189).

A represents the attachment number, and
ZZ represents the NRC-assigned sequential comment number

Table 2 lists the individuals providing verbal comments at the public meetings. Specific comments pertaining to a public meeting are given NRC-assigned sequential comment numbers following the commenter identifier. For example, RMD–NEI2–4, where "4" represents the fourth verbal comment at the Rockville, MD, public meeting (RMD), and it was made by Kathleen Yhip of the Nuclear Energy Institute Task Force (NEI2). The NRC-assigned sequential comment number is noted in the right margin of the annotated public meeting transcripts (ADAMS Accession No. ML12095A179).

The NRC's responses to the public comments on the draft regulatory guide are discussed below.

Table 1—Document Submissions Containing Comments on Draft Regulatory Guide DG-4015

Submission No.	ADAMS No.	Commenter Organization	Commenter Name	Abbreviation
3	ML092890603	U.S. Environmental Protection Agency	Susan E. Bromm	EPA
7[3]	ML100150042 ML102110089	Nuclear Energy Institute	Ralph L. Andersen	NEI1
14	ML100150111	New York State Office of the Attorney General	Janice Dean	NYS AG

Table 2—Individuals Providing Verbal Comments at the Public Meetings

Commenter Identifier[4]	Commenter Name	Affiliation (if stated)	Comment Source and ADAMS Accession Number
RMD–NEI2	Kathleen Yhip	Nuclear Energy Institute Industry Task Force (Southern California Edison)	Rockville, MD, Public Meeting ML092931678
OBIL–Entergy	Rick Buckley	Entergy Nuclear	Oak Brook, IL, Public Meeting ML092931545

[3] This is a large document that was split into two files in order to be included in ADAMS.
[4] Commenter Identifiers beginning in "RMD" or "OBIL" indicate that verval comments were provided at the Rockville, MD, or Oak Brook, IL, public meetings, respectively.

Table 3—Public Comment Categories[5]

No.	Category
1	General Guidance to Applicants (Introduction–A.2)
2	Purpose and Need for Action (Chapter 1)
3	General Plant Information (Section 2.2)
4	Programs and Activities for Managing the Effects of Aging (Section 2.4)
5	Affected Environment (Chapter 3)
6	Land Use and Visual Resources (Section 3.1)
7	Noise (Section 3.3)
8	Geology and Soils (Section 3.4)
9	Hydrology (Section 3.5)
10	Ecology (Section 3.6)
11	Historic and Cultural Information (Section 3.7)
12	Socioeconomics (Section 3.8)
13	Human Health (Section 3.9)
14	Environmental Justice (Section 3.10)
15	Environmental Consequences of the Proposed Action and Mitigsting Actions, General Guidance (Chapter 4)
16	Land Use and Visual Resources (Section 4.1)
17	Air Quality (Section 4.2)
18	Noise (Section 4.3)
19	Geology and Soils (Section 4.4)
20	Hydrology (Section 4.5)
21	Ecology (Section 4.6)
22	Historic and Cultural Resources (Section 4.7)
23	Socioeconomics (Section 4.8)
24	Human Health (Section 4.9)
25	Environmental Justice (Section 4.10)
26	Cumulative Impacts (Section 4.11)
27	Uranium Fuel Cycle (Section 4.13)
28	Assessment of New and Significant Information (Chapter 5)
29	Mitigation (Section 6.2)
30	Alternatives for Reducing Adverse Impacts (Section 7.2)
31	Energy Alternatives and No-Action Alternative (Sections 7.1 and 7.3)

[5] Category titles correspond to the chapter or section of the draft regulatory guide on which comments were received. Note that some section titles have been changed in the final regulatory guide.

List of Acronyms

ADAMS	Agencywide Documents Access and Management System
CEQ	President's Council on Environmental Quality
CFR	Code of Federal Regulations
DG	Draft Regulatory Guide
EPA	U.S. Environmental Protection Agency
ER	Environmental Report
FES	final environmental statement
FSAR	final safety analysis report
GEIS	Generic Environmental Impact Statement for License Renewal of Nuclear Plants
NEI	Nuclear Energy Institute
NEPA	National Environmental Policy Act
NESC	National Electrical Safety Code
NPDES	National Pollutant Discharge Elimination System
NRC	U.S. Nuclear Regulatory Commission
RG	Regulatory Guide
ROWs	right-of-ways
SEIS	supplemental environmental impact statement
SHPO	State Historic Preservation Officer
U.S.	United States
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

1. General Guidance to Applicants (Introduction–A.2)

IDENTIFIER: NEI1–7(3)–1; OBIL–Entergy–2; OBIL–Entergy–6

COMMENT:

Two industry commenters expressed concern that the NRC should request descriptive information for Category 1 issues. The primary comment is set forth below.

Treatment of Category 1 Issues

The current Regulatory Guide 4.2 wording associated with treatment of Category 1 issues should not be changed from "list" to "describe" since applicants are not obligated under 10 CFR 51 to provide detailed descriptions unless new and significant information exists. The applicants are already required to identify new information that relates to applicable Category 1 issues and evaluate the significance of such information. If no new information has been identified for a Category 1 issue, there is no need to describe the environmental resources pertinent to the issue because the GEIS already provides adequate information. Including information about environmental resources pertinent to Category 1 issues, other than new and significant information, in ERs would unnecessarily add to the length of ERs and increase the regulatory burden on applicants with no resulting improvement in regulatory efficiency.

NRC RESPONSE:

The NRC disagrees with this comment. The designation of an issue as Category 1 does not imply that potential impacts of continued nuclear power plant operations and refurbishment should not be considered in plant-specific reviews. In order to avoid the possibility of the NRC sending a "Request for Additional Information" to the applicant and to otherwise expedite the NRC's review of an ER, applicants should submit a sufficiently detailed affected environment description of the Category 1 issue to provide the NRC with appropriate context and content to effectively conduct its National Environmental Policy Act (NEPA) review. In addition, such a description will further expedite the NRC's environmental review as it will make the Chapter 4 analysis for each resource area in the ER consistent with the NRC's organization of the environmental impacts (consequences) in Chapter 4 of both the revised GEIS and plant-specific SEISs. Providing an analysis or conclusion for a Category 1 issue, as would be expected with Category 2 issues, is not required.

As with all Category 1 conclusions, NRC's license renewal environmental reviews specifically determine if there is new and significant information that would provide a seriously different picture of the environmental impacts of the proposed action than previously considered, such as an environmental impact finding different from that codified in Table B-1. This review includes consideration of any new and significant information an applicant for license renewal is required to include in its environmental report under Title 10 of the *Code of Federal Regulations* (CFR) Section 51.53(c)(3)(iv) (10 CFR 51.53(c)(3)(iv)). Nevertheless, much of the Category 1 information as addressed by Regulatory Guide 4.2 Supplement 1, Revision 1 (RG 4.2 S1, Rev. 1) is already being requested by the NRC of applicants during license renewal environmental reviews. The NRC is merely providing clear direction to applicants in this regard. In doing so, the requested information will enable the NRC to meet its statutory obligations under Section 102(2) of the NEPA and to specifically fulfill its responsibilities under 10 CFR 51.70(b) to independently evaluate and be responsible for the reliability of all information used in a Supplemental Environmental Impact Statement (SEIS) and to provide evidence that the necessary environmental analyses have been conducted. Providing the requested information

for Category 1 issues, in combination with the revised GEIS, is expected to result in a more efficient license renewal environmental review process for the NRC and industry alike.

No change was made to RG 4.2 S1, Rev. 1 as a result of this comment.

IDENTIFIER: NEI1–7(3)–2

COMMENT:

General Guidance to Applicants

The evaluation of cumulative impacts due to "reasonably foreseeable future actions" should be clarified such that cumulative impact analysis need not include evaluation of:

1. Potential alterations due to climate change or global warming—e.g., drought, flooding, or other as yet unpredictable weather related phenomena; or acts of God; (in these cases, the use of the resource during the extended license period by the plant is not the instigator of the stress on the resource, and potential impacts would occur regardless of license renewal).

2. Acts of war or terrorism.

3. Indiscriminate use of a resource—e.g., an assumption of uncontrolled or unregulated use of a resource. Example: a plant with no demonstrable existing impact on an existing resource should not be required to evaluate cumulative impacts under the assumption that future unregulated use of the resource could cause adverse impact to the resource.

4. Resources controlled by local, state, or federal, or tribal resource regulations, where no demonstrable impact to an existing resource exists.

5. Incidences where local, state, federal or tribal regulations do not apply to the resource, for example:

   a. Existing cumulative impacts that do not destabilize the resource require no further cumulative impact evaluation

   b. No further evaluation of cumulative impacts should be required if there are no known plans to utilize the resource that would cause demonstrable adverse impacts,

   c. Where NRC denial of a renewed license would have little impact to restore the resource, no further cumulative impact should be required, even if there are existing or known future plans to utilize the resource that are likely to cause demonstrable adverse impacts that would destabilize the resource.

6. If there are known future plans to utilize the resources that are likely to cause demonstrable adverse impacts that would destabilize the resource, and the adverse impact is directly or indirectly attributable to local, state, federal or tribal regulation, no further cumulative impact should be required (e.g., EPA 316(b) regulations or similar state or tribal regulations that would require retrofit of cooling towers that causes increased consumption of water from a small river or other water body). In this case, the NEPA evaluation of the agencies' rulemaking should include evaluation of the environmental and health and safety and other impacts on the resource(s) subject to the regulation.

NRC RESPONSE:

The NRC disagrees with this comment, except to the extent that the comment requests exclusion of acts of war or terrorism from the scope of reasonably foreseeable future actions.

Cumulative impacts encompass, by definition, the impact on the environment resulting from the incremental impact of a proposed Federal action in combination with other past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes such other actions (the Council on Environmental Quality's (CEQ) definition of "Cumulative impact" is set forth at 40 CFR 1508.7; the NRC has adopted this definition, see 10 CFR 51.14(b)). The cumulative impacts assessment, therefore, must consider relevant past, present, and future actions, including those outside of the applicant's or NRC's control. It is important to identify relevant past, present, and future actions that may appreciably degrade resources or add to the impacts on them. Relevant past and present actions are those with identifiable present effects, and relevant future actions are those that are reasonably foreseeable (i.e., planned) occurring within the defined regions of influence and time frame of the proposed action. In determining reasonably foreseeable future actions, the NRC staff is guided by the CEQ document, "Considering Cumulative Effects Under the National Environmental Policy Act" (January 1997).

As described in the introduction to Section 4.13 of the revised GEIS, reasonably foreseeable future actions include those actions within the region of influence described in planning documents or project descriptions from other Federal, State, and local agencies. CEQ regulations do not require a catalogue or exhaustive list and analysis of all actions within the region of influence, but rather, encourage the use of the scoping process to narrow the analysis by identifying those actions that could have significant effects. Trends such as global climate change should be considered because these changes have the potential to affect air and water resources, ecological resources, and human health over the license renewal term. A new subsection summarizing the potential cumulative impacts of global climate change has been added to Section 4.13 of the revised GEIS. Acts of war or terrorism are too speculative to be included as reasonably foreseeable future actions and are, therefore, beyond the normal regulatory scope of license renewal environmental reviews. As such, license renewal applicants do not have to include acts of war or terrorism in their cumulative impacts assessment of reasonably foreseeable future actions.

No change was made to RG 4.2 S1, Rev. 1 as a result of this comment.

IDENTIFIER: NYS AG-14-5

COMMENT:

With respect to the "new and significant information" question, NRC should formally repudiate the discussion contained in the current, standard-less *Regulatory Guide 4.2, Supplement 1* (Sept. 2000). This standard-less and circular discussion is inconsistent with NEPA, CEQ regulations, and federal court case law. Unfortunately, the proposed revised Regulatory Guide repeats the same standard-less discussion, *Draft Regulatory Guide DG-4015* (July 2009) ML091629409, and it too should be withdrawn and revised for the same reasons.

NRC RESPONSE:

The NRC disagrees with the comment. The approach used by the 1996 GEIS and now, under this final rule, the approach used by the revised GEIS is fully compliant with NEPA. The NRC has established its own regulations to implement NEPA in 10 CFR Part 51. As an independent regulatory agency, the NRC is not bound by CEQ regulations. The NRC, however, voluntarily takes account of the CEQ regulations (see

10 CFR 51.10(a)) and has adopted the CEQ's definitions of several terms (see 10 CFR 51.14(b)), including the term "significantly," which requires Federal agencies to consider the context and intensity of potential environmental impacts. In doing so, the NRC requires that license renewal applicants identify new and significant information as defined in Section A.2 of RG 4.2 S1, Rev. 1, which has been revised to provide additional guidance to applicants.

Chapter 5 of RG 4.2 S1, Rev. 1 provides additional guidance to applicants with regard to the collection and review of new and significant information. Further, any applicant-identified new and significant information is then independently evaluated by the NRC to enable the NRC to make a determination as to the context and intensity (i.e., small, medium, and large) of any new environmental issue and associated impact. This integrated process is essential to the NRC's assessment as to the significance (as used in NEPA) and whether the new and significant information provides a seriously different picture of the environmental impacts of the proposed action than previously considered, such as an environmental impact finding different from that codified in Table B-1.

Nevertheless, neither NEPA nor CEQ's regulations for implementing NEPA provide a definitive standard, either generally or on a resource-specific basis, for quantifying the significance of environmental impacts. Such judgments are left to individual Federal agencies and their subject matter experts who must exercise their technical expertise and best professional judgment in assessing the significance of environmental impacts. Such is the case for evaluating "new" and "significant" information but which is aided by NRC technical staff's use and consideration of nuclear power plant operating experience and the results of previous license renewal environmental reviews as documented in plant-specific SEISs to the GEIS. Overall, these processes enable the NRC to meet its statutory obligations under Section 102(2) of NEPA, and specifically, to fulfill its responsibilities under 10 CFR 51.70(b) to independently evaluate and be responsible for the reliability of all information used in a SEIS and to provide evidence that the necessary environmental analyses have been conducted.

No change was made to RG 4.2 S1, Rev. 1 as a result of this comment.

2. Purpose and Need for Action (Chapter 1)

IDENTIFIER: NEI1–7(3)–3

COMMENT:

Purpose of and Need for Action

Recommend revising the wording below since the first sentence in the second paragraph appears to contradict the sentence following it.

~~"The purpose and need for the proposed action have no role in the energy planning decisions of State regulators and utility officials as to whether a particular nuclear power plant should continue to operate.~~ From the perspective of the licensee and the State regulatory authority, the purpose of renewing an operating license is to maintain the availability of the nuclear plant to meet system energy requirements beyond the term of the plant's current license ***as such needs are determined by the appropriate regulatory decision makers*****."**

NRC RESPONSE:

The NRC agrees with the commenter that the paragraph in Section 1.0 of RG 4.2 S1, Rev. 1 should be revised. The NRC has revised the paragraph as follows:

> The purpose and need for the proposed action (i.e., issuance of a renewed license) is to provide an option that allows for baseload power generation capability beyond the term of the current nuclear power plant operating license to meet future system generating needs. Such needs may be determined by other energy-planning decisionmakers, such as State, utility, and, where authorized, Federal agencies (other than the NRC). Unless there are findings in the safety review required by the Atomic Energy Act or the NEPA environmental review that would lead the NRC to reject a license renewal application, the NRC does not have a role in the energy-planning decisions of whether a particular nuclear power plant should continue to operate.

3. General Plant Information
(Section 2.2)

IDENTIFIER: NEI1–7(3)–4

COMMENT:

Cooling and Auxiliary Water Systems

The level of detail (rates of water withdrawal, flow rates, location of water withdrawal, typical water balance or budget, typical temperature changes as water passes through the system, etc.) is far more extensive than required in other sections of the general plant information. Given that the use of the cooling water and discharge from the plant are regulated by the state entity responsible for implementation of the Clean Water Act, the level of detail appears wholly disproportionate to the information necessary for the NRC to comply with NEPA. The (newly added) description of the information on Nonradioactive Waste Management is far more consistent with the brief description of major features of the plant described in the first paragraph of Chapter 2.2. The Cooling and Auxiliary Water Systems section should be amended to read:

"Each nuclear power plant is required by the Clean Water Act to have a NPDES permit that governs the licensee's withdrawal of water from the water body and releases to it, including thermal discharges. The EPA authorizes a State regulatory agency to administer the requirements of the Clean Water Act.

To assist the NRC staff in its review, t*~~T~~he ER should* ***provide a brief description of the major features of*** *describe the cooling and auxiliary water systems in the order that water flows through them, including approach, intake structure, trash racks, screens (including mesh sizes), screen wash, and fish return or collection systems and provide appropriate figures or maps to illustrate the system pathway. This description should include the rates of water withdrawal, ~~the flow rates or volume of the water body from which cooling water is withdrawn~~, the location of water withdrawal, and intake velocity at the screens. The ER should also describe in ~~detail~~* ***general*** *any structural or operational measures, ~~such as the schedule of traveling screen operation or planned outages,~~ used to reduce impingement of fish and shellfish.* ***For plants that use cooling towers, t****~~T~~his description should include a typical water balance or budget showing rates of water withdrawal, losses to evaporative cooling ~~(for cooling towers)~~, blowdown, effluent, and the like. The ER should also describe typical ~~temperature changes as water passes through the system, as well as~~ temperatures at the outfall~~, the size of the plume and mixing zone,~~ and National Pollutant Discharge Elimination System (NPDES) or other permit conditions on temperature. The ER should include copies of such permits and supporting documentation in an appendix. This section should also describe chemical additions or other measures used to clean or maintain condensers and other components. The surface water and impingement and entrainment sections of the ER should refer to this section when appropriate to avoid unnecessary duplication of effort."*

NRC RESPONSE:

The NRC disagrees with this comment. NRC's license renewal environmental reviews determine if there is new and significant information that provides a seriously different picture of the environmental impacts of the proposed action than previously considered, such as an environmental impact finding different from that codified in Table B-1. The level of detail prescribed by the NRC is needed to enable the NRC to meet its statutory obligations under

Section 102(2) of NEPA and to specifically fulfill its responsibilities under 10 CFR 51.70(b) to independently evaluate and be responsible for the reliability of all information used in a SEIS and to provide evidence that the necessary environmental analyses have been conducted. More specifically, the NRC requests the information to facilitate the evaluation of current operating parameters of plant cooling and auxiliary water systems in considering an applicant's compliance with environmental quality standards and associated permitting requirements as prescribed by 10 CFR 51.71(d).

No change was made to RG 4.2 S1, Rev. 1, as a result of this comment.

IDENTIFIER: NEI1–7(3)–5

COMMENT:

Power Transmission Systems – This section states the following:

"In the ER, the applicant should list and describe the in-scope transmission lines, including the length of the transmission lines or portions of lines; width of right-of-ways (ROWs); ROW maintenance plans, procedures, or protocols; and pesticides and herbicides used in ROWs, including information on how and when they are released. The ER should also describe the protocol for applying chemicals near streams and wetlands and any procedures in place to protect cultural resources. In addition, the ER should provide a map of all in-scope transmission lines and ROWs."

The text in this subsection should be expanded to fully explain, consistent with statements in the updated GEIS, what transmission lines are to be considered "in-scope" for purposes of the ER. Specifically, the following text adapted from the GEIS (Sec. 3.1.1; page 3–3, lines 37 to 41) should be added to this subsection of the Regulatory Guide:

"Only those transmission lines that connect the plant to the switchyard where the electric voltage is stepped up and fed into the regional power distribution system are considered within the scope of the ER. Any other lines that would remain energized regardless of a decision regarding license renewal are considered outside of the scope of the ER."

NRC RESPONSE:

The NRC agrees that the text of Section 2.2 of RG 4.2 S1, Rev. 1 should be revised to more clearly define the transmission lines and ROWs within the scope of license renewal environmental reviews, and thus subject to inclusion in the Environmental Report (ER). The NRC has revised the text as follows:

> Only those transmission lines that connect the plant to the switchyard where electricity is fed into the regional power distribution system (encompassing those lines that connect the plant to the first substation of the regional electric power grid) and power lines that feed the plant from the grid during outages are considered within the scope of the environmental review.

4. Programs and Activities for Managing the Effects of Aging (Section 2.4)

IDENTIFIER: NEI1–7(3)–6

COMMENT:

Programs and Activities for Managing the Effects of Aging

Recommend changing the wording as shown to avoid replication of the safety analyses.

"*This section should characterize any changes planned in the plant's operating practices, inspections, maintenance activities, systems, and administrative control procedures during the renewal term designed to manage the effects of aging t**hat will present a new or significant environmental impact**. The ER should identify and discuss in detail any specific changes that may lead to environmental **impacts that are significantly different than those addressed for the current licensing basis***."

NRC RESPONSE:

The NRC agrees that the text of Section 2.4 of RG 4.2 S1, Rev. 1, should be revised for clarity and consistency. The NRC has revised the text as follows:

> This section should characterize any changes to power plant operations, inspections, maintenance activities, systems, and administrative control procedures during the renewal term designed to manage the effects of aging (as required by 10 CFR Part 54) that could impact the environment. Environmental impacts significantly different than those described in the final environmental statement for the current operating license should be described in detail.

5. Affected Environment (Chapter 3)

IDENTIFIER: NEI1–7(3)–7
COMMENT: *Affected Environment* Recommend clarification that multiple maps may be appropriate. "*Include a map**, or maps,** of the site showing site boundaries; exclusion area; site structures and facilities; major land uses (with land use classification consistent with the U.S. Geological Survey (USGS) categories); the construction zone for refurbishment, if any; sites for any other planned buildings and structures (both temporary and permanent); and transportation routes adjacent to the site*." ***NRC RESPONSE:*** The NRC agrees with the comment and has revised the text of Section 3.0 of RG 4.2 S1, Rev. 1, as suggested by the commenter.

IDENTIFIER: NEI1–7(3)–8
COMMENT: *Affected Environment* Recommend the mapping requirements be specific to the map radius, incorporating such information as residential areas on a 50-mile radius map will become confusing to the reader. Alternatively, the NRC could retain the existing language in Regulatory Guide 4.2 S1 on the maps for the affected environment. "*Provide maps of the site vicinity within a 50-mile (80-kilometer) radius of the site showing county and local municipality boundaries, airports, major industrial and commercial facilities, roads and highways, railroads, American Indian and/or Bureau of Indian Affairs lands held in trust for American Indians, and Indian tribes' lands, and military reservations. Provide maps of the site vicinity within a 6-mile (10-kilometer) radius county and local municipality boundaries, place names, residential areas, airports, industrial and commercial facilities, roads and highways, railroads, American Indian and/or Bureau of Indian Affairs lands held in trust for American Indians, and Indian tribes' lands, and military reservations*." ***NRC RESPONSE:*** The NRC agrees that the text of Section 3.0 of RG 4.2 S1, Rev. 1, should be revised for clarity and to provide latitude to applicants in depicting features over such wide map scales by adding the following statement: "Depict requested features on both the vicinity and regional map(s) as practicable, given the varying map scales."

6. Land Use and Visual Resources (Section 3.1)

IDENTIFIER: NEI1–7(3)–9
COMMENT: *Land Use* Since population and housing have been re-classified as Category 1 issues in the revised GEIS, discussion related to these issues is not required per 10 CFR [Part] 51 or needed in the Environmental Report and should be appropriately deleted. "…~~*The ER should include information on local county comprehensive land use and development plans concerning land use and zoning that are relevant to population and housing growth and control and changes in land use patterns."*~~
NRC RESPONSE: The NRC disagrees with this comment. See NRC's response to comment NEI1–7(3)–1 as related to the treatment of Category 1 issues. No change was made to RG 4.2 S1, Rev. 1, as a result of this comment.

IDENTIFIER: NEI1–7(3)–10
COMMENT: *Visual Resources* The subsection titled "Visual Resources" should be deleted from Section 3.1. Even though the GEIS designates aesthetic impacts as a Category 1 issue, this subsection in the draft Regulatory Guide instructs applicants to "*describe the nuclear plant's visual setting in the environment, including the identity and height of the tallest visible structures and direction and distances from which these plant structures are visible.*" If no new information has been identified regarding visual resources at a site, there is no need to describe visual resources because the GEIS already provides adequate information.
NRC RESPONSE: The NRC disagrees with this comment. See NRC's response to comment NEI1–7(3)–1 as related to the treatment of Category 1 issues. No change was made to RG 4.2 S1, Rev. 1, as a result of this comment.

7. Noise
(Section 3.3)

IDENTIFIER: NEI1–7(3)–11
COMMENT: <u>*Noise*</u> Section 3.3, "Noise," should be deleted. Even though the GEIS designates noise impacts as a Category 1 issue, Section 3.3 in the draft Regulatory Guide instructs applicants to "*provide information about current or past noise studies and analyses conducted at or near the nuclear plant site,*" and to "*identify the loudest noise-generating facilities and activities and indicate their distance to the nearest site boundary.*" If no new information has been identified regarding noise at a site, there is no need to describe noise sources because the GEIS already provides adequate information.
NRC RESPONSE: The NRC disagrees with this comment. See NRC's response to comment NEI1–7(3)–1 as related to the treatment of Category 1 issues. No change was made to RG 4.2 S1, Rev. 1, as a result of this comment.

8. Geology and Soils
(Section 3.4)

IDENTIFIER: NEI1–7(3)–12

COMMENT:

Geology and Soils

Section 3.4, "Geology and Soils" should be deleted. Even though the GEIS designates impacts of nuclear plants on geology and soils as a Category 1 issue, Section 3.4 in the draft Regulatory Guide instructs applicants to provide information about site geology and soils in License Renewal ERs. If no new information has been identified regarding geology and soils at a site, there is no need to describe geology or soils because the GEIS already provides adequate information.

NRC RESPONSE:

The NRC disagrees with this comment. See NRC's response to comment NEI1–7(3)–1 as related to the treatment of Category 1 issues. Further, the requested information is necessary to support NRC's consideration of potential impacts on groundwater including analysis of new Category 2 issues (e.g., Radionuclides Released to Groundwater). Analysis of the Radionuclides Released to Groundwater issue and other Category 2 issues will be improved and facilitated with adequate information on site soil and overburden, geologic, and associated hydrogeologic conditions. The title of Section 3.4 of RG 4.2 S1, Rev. 1, has been changed to "Geologic Environment" to be consistent with Section 3.3 of the revised GEIS, and the text of Section 3.4 was revised for clarity and to provide additional guidance to applicants with regard to requested information.

IDENTIFIER: NEI1–7(3)–13

COMMENT:

Geology

If NRC decides to retain Section 3.4 in the Regulatory Guide, the subsection titled "Geology" should be modified. Seismology is not identified in Table B–1 in 10 CFR Part 51 as a component of any Category 1 or 2 issue and is not a resource that is impacted by plant refurbishment and operations during the period of extended operation resulting from license renewal. In addition, the Geology information is contained in the FSAR with the exception of recent seismic events. Recommend the language should be revised as follows:

Geology

"*The ER should describe, in general, the site geologic setting~~, including brief definitions of the rock types present, formation names, thicknesses, and general engineering properties~~. The ER should briefly discuss ~~seismicity, including~~ the seismic history of the site since construction~~,~~ and identify ~~the safe-shutdown earthquake, along with~~ the largest historic regional earthquake."*

NRC RESPONSE:

The NRC agrees in part with this comment and to the extent that clarification is needed on the scope of requested information on geologic conditions. The NRC further agrees with the commenter that "seismology" is not a resource affected by continued plant operations and refurbishment activities. As such, the title of this new Category 1 issue has been changed to "Geology and soils" in the final rule, and the title of Section 3.4 of RG 4.2 S1, Rev. 1, has been changed to "Geologic Environment" to be consistent with Section 3.4 of the revised GEIS.

However, the NRC requests information on the current state of knowledge relative to site geologic conditions as a necessary component of the overall geologic affected environment, and in further consideration of public comments on the issue. Inclusion of "Geology and soils" is fully consistent with NRC's resource-based approach to NEPA compliance and helps the NRC to specifically fulfill its responsibilities under 10 CFR 51.70(b) to independently evaluate and be responsible for the reliability of all information used in a SEIS and to provide evidence that the necessary environmental analyses have been conducted. The text describing requested geologic information in Section 3.4 of RG 4.2 S1, Rev. 1, was revised for clarity as follows:

> In this section of the ER, the applicant should describe, in general, the site geologic setting, including brief descriptions of the rock types present, formation names, and thicknesses. This description should consider geologic conditions or geologic hazards identified since plant construction such as landslide areas, karst features (e.g., sinkholes), and other conditions that could lead to land subsidence and unstable soils. The seismic history of the site since construction, including the largest historic regional earthquake, should be summarized. The ER should also briefly address any rare or unique geologic resources including rock, mineral, or energy rights and assets at or adjoining the site.

IDENTIFIER: NEI1–7(3)–14

COMMENT:

Soils

If NRC decides to retain Section 3.4 in the Regulatory Guide, the subsection titled "Soils" should be modified. Soils information is already identified in the FSAR, with the exception of erosion potential and management practices which is included in Section 3.5, Hydrology. Therefore, this section should be revised as below to avoid replication.

Soils

"*The ER should ~~describe, in general, the soils at the plant site, including unconsolidated material which may be naturally occurring or consist of fill. Using engineering terminology, soils are also referred to as overburden (i.e., the unconsolidated material overlying bedrock). The ER should describe the soils, along with their relationship to the site geology (e.g., identify whether fill material was brought in from offsite or if onsite excavation material was used). The ER should identify the erosion potential of the site soils and describe best management practices to control erosion and runoff associated with continued plant operations and refurbishment activities. This section should also~~ identify prime farmland soils on or in the vicinity of the plant site*."

NRC RESPONSE:

The NRC agrees with this comment to the extent that clarification is needed on the scope of requested soils information but disagrees that a plant's Final Safety Analysis Report is an adequate source for all requested information. Also, see NRC's response to comments NEI1–7(3)–12 and NEI1–7(3)–13 as related to this issue. NRC's request for relevant information on current soil conditions, classification, and related erosion hazards will enable the NRC to meet its statutory obligations under Section 102(2) of NEPA and to specifically fulfill its responsibilities under 10 CFR 51.70(b) to independently evaluate and be responsible for the reliability of all information used in a SEIS and to provide evidence that the necessary environmental analyses have been conducted.

The NRC is not asking that new soils information be developed but that current and valid soil conditions and descriptions be provided to include any updated soil survey information, including identification of soil mapping units designed as prime farmland, unique farmland, and other farmland of statewide or local importance on or adjoining the plant site. Thus, this information may not be available in plant Final Safety Analysis Reports. Further, the requested information will in part facilitate NRC's compliance with the CEQ's requirements for preparing EISs contained in 40 CFR 1502.25, which dictate that agencies integrate their NEPA document preparation processes with other required consultation and environmental review laws (such as the Farmland Protection Policy Act, which concerns prime farmland and other important farmland soils). The text of Section 3.4, Geologic Environment, of RG 4.2 S1, Rev. 1, was otherwise revised for clarity and to provide additional guidance to applicants as follows:

> In this section of the ER, the applicant should describe, in general, the soils at the plant site, including unconsolidated material that may be naturally occurring or consist of fill. The applicant should describe the soils, along with their relationship to the site geology (e.g., identify whether fill material was brought in from off site or if onsite excavation material was used). The applicant should identify the erosion potential and suitability and limitation ratings of site soils for current and/or proposed uses based on current soil mapping and characterization data (see Natural Resources Conservation Service's "Web Soil Survey") and should describe best management practices to control erosion and runoff associated with continued plant operations and refurbishment activities. This section should also identify any soils that are prime farmland, unique farmland, and other farmland of statewide or local importance on or adjoining the plant site that may be subject to the Farmland Protection Policy Act of 1981, as amended (7 U.S.C. 4201 et seq.).

9. Hydrology
(Section 3.5)

IDENTIFIER: NEI1–7(3)–15

COMMENT:

Hydrology

If "Geology and Soils" is deleted from the Regulatory Guide since it is a Category 1 issue in the revised GEIS, discussion related to this issue will not be available to reference in this section. Therefore, the section should be revised as follows if "Geology and Soils" is removed from the Regulatory Guide:

"*The ER should describe the site's groundwater hydrology and identify the hydrostratigraphic units underlying the site in reference to the site geology. ~~The discussion should link the previously described site geology with groundwater conditions.~~ The ER should identify the number and location of onsite water supply wells and monitoring wells on an accompanying map. The ER should also describe a dewatering system, if appropriate, and include it on a site map, if practicable*."

NRC RESPONSE:

The NRC disagrees with this comment. See NRC's response to comment NEI1–7(3)–12 as related to this issue.

No change was made to RG 4.2 S1, Rev. 1, as a result of this comment.

IDENTIFIER: NEI1–7(3)–16

COMMENT:

Hydrology—Surface Water

The following revision is requested:

"The ER should describe the surface water resources at or near the site, as well as the river and stream flow, lake and reservoir volume, water level measurements, intake and discharge (outfall) specifications and operating parameters, and onsite ponds or other impoundment descriptions. The ER should also include local, State, and Federal permit information for enforcement of water use, NPDES regulated discharges, and storm water runoff controls. The discussion of surface water resources should include surface water quality and both ambient conditions and monitoring results from ***available*** *site studies, where required by local, State, and Federal permit(s) or enforcement action."*

NRC RESPONSE:

The NRC agrees in part with this comment. The text of Section 3.5, Water Resources, of RG 4.2 S1, Rev. 1, was revised to add the word "available" before the phrase "site studies" in the sentence indicated by the commenter. This revision clarifies that available site studies can be used to assemble the requested information.

10. Ecology
(Section 3.6)

IDENTIFIER: NEI1–7(3)–17
COMMENT: *Ecology* The section entitled History should be limited to either the plant site specifically or to within a reasonable radius of the site, such as two miles.
NRC RESPONSE: The NRC agrees in principle with this comment and has revised the text of the subsection now titled, Ecological Resources History, under Section 3.6 of RG 4.2 S1, Rev. 1, to note that the requested information be provided for the plant site and vicinity, which is consistent with similar resource area descriptions, including Section 3.7.

IDENTIFIER: NEI1–7(3)–18
COMMENT: *Ecology: Potentially Affected Water Bodies* Recommend that "significant" water bodies that intersect or parallel transmission lines be more clearly defined, particularly given the reduced scope for transmission lines. See earlier comment on Section 2.2 recommending that the ER scope for transmission lines be defined as those lines that connect the plant to the switchyard where the electric voltage is stepped up and fed into the regional power distribution system. Any other lines that would remain energized irrespective of a decision regarding license renewal are considered outside of the scope of the ER.
NRC RESPONSE: The NRC agrees with the comment and has revised the "Site and Vicinity" paragraph of Section 3.6 of RG 4.2 S1, Rev. 1, to provide a definition of "significant water bodies."

IDENTIFIER: NEI1–7(3)–19
COMMENT: *Ecology: History* It is recommended that describing in the ER the ecological environment and wildlife living around the site before European settlement be deleted since the ER should focus on the baseline (current plant operations) instead of assumed conditions that are not relevant to the proposed action.

NRC RESPONSE:

The NRC agrees in principle with this comment and has revised the "Ecological Resource History" paragraph of Section 3.6 of RG 4.2 S1, Rev. 1, to specify that the requested description need only cover the plant site and immediately surrounding area beginning with the period immediately prior to plant construction.

IDENTIFIER: NEI1–7(3)–20

COMMENT:

Procedures and Protocols—Delete the last sentence in the subsection titled "Procedures and Protocols." Currently, the entire subsection reads as follows: "*The ER should describe wildlife management plans and best management practices (if applicable), including pesticides and herbicides used and ground-disturbing activities performed routinely to maintain the site.* ~~*The ER should include such plans and practices.*~~" The descriptions of the plans and practices used to manage wildlife should provide sufficient information. An applicant will provide any source document to the NRC at the time the NRC identifies the document as necessary for preparation of the Supplemental EIS. However, unless the NRC determines that copies of specific source documents are needed by the Staff, including source documents in ERs would unnecessarily add to the length of ERs and increase the regulatory burden on applicants with no resulting improvement in regulatory efficiency.

NRC RESPONSE:

The NRC agrees with the comment and has deleted the sentence as suggested in Section 3.6 of RG 4.2 S1, Rev. 1. The "Procedures and Protocols" paragraph of Section 3.6 of RG 4.2 S1, Rev. 1 has been further revised to clarify the ER requirements.

IDENTIFIER: NEI1–7(3)–21

COMMENT:

Maps

See previous comment on Section 2.2 and the recommendation for the definition of transmission lines considered in-scope.

NRC RESPONSE:

The NRC agrees with the comment and has revised the "Power Transmission Systems" paragraph of Section 2.2 of RG 4.2 S1, Rev. 1, to better define the transmission lines and right-of-ways (ROWs) within the scope of license renewal environmental reviews and subject to inclusion in the ER. See NRC's response to comment NEI1–7(3)–5.

IDENTIFIER: NEI1–7(3)–22

COMMENT:

Threatened, Endangered, and Protected Species and Essential Fish Habitat

Endangered Species Act – The 2nd paragraph of the subsection titled "Endangered Species Act" contains the following text:

"*The applicant should determine if federally listed threatened, endangered, or candidate species, critical habitat, and/or State-listed species and habitat have the potential to occur on the site or in the vicinity of the site, including the area within the applicant's in-scope transmission line ROWs. For such species, the ER should provide sufficient information on historical occurrences, population size and trends, critical habitat, and potential habitat to aid the NRC in its biological assessment. The ER should discuss any license renewal activities and modifications to plant operation that may affect such species and habitats."*

The 2nd sentence in the above-quoted paragraph should be modified to read as follows:

"~~*For such species,*~~ ***If particular species or habitats are identified that may be affected by refurbishment activities or plant operational activities during the extended license term, then for the potentially affected species or habitats,*** *the ER should provide* ~~*sufficient*~~ *information on historical occurrences, population size and trends* ***(if available)****, critical habitat, and potential habitat to aid the NRC in its biological assessment."*

It should not be necessary for the ER to provide detailed information about every species with potential to occur. Detailed information should be required only for species that may be adversely affected due to license renewal.

NRC RESPONSE:

The NRC disagrees with this comment. The requested information will enable NRC to meet its statutory obligations under Section 102(2) of NEPA and to specifically fulfill its responsibilities under 10 CFR 51.70(b) to independently evaluate and be responsible for the reliability of all information used in a SEIS and to provide evidence that the necessary environmental analyses have been conducted. It is not possible to evaluate potential impacts on particular species or habitats *a priori*, without information on species and habitats that may potentially occur on or in the immediate vicinity of the site or within the applicant's in-scope transmission line ROWs. The information requested specific to threatened, endangered, and other protected species is needed to assist the NRC in fulfilling its contingent regulatory consultation requirements under the Endangered Species Act and other laws. Nevertheless, much of the Category 1 information addressed by RG 4.2 S1, Rev. 1, is already being requested of license renewal applicants. The NRC is merely providing clear direction to license renewal applicants in this regard. However, the "Threatened, Endangered, and Protected Species and Essential Fish Habitat" paragraph of Section 3.6 of RG 4.2 S1, Rev. 1, was revised to clarify that information need only be provided based on best available sources, which is consistent with the treatment of other environmental resources.

IDENTIFIER: NEI1–7(3)–23
COMMENT: *Threatened, Endangered, and Protected Species and Essential Fish Habitat* The last paragraph states "…*For such species, the ER should provide sufficient information on historical occurrences, population size and trends, critical habitat, and potential habitat to aid the NRC in its biological assessment*." Applicants may find it challenging to discuss at a meaningful level, the population size and trends without performing multi-year surveys. Similarly, it is unlikely that the local Fish and Game agencies will have multi-year survey data available.
NRC RESPONSE: The NRC agrees that the text of Section 3.6 of RG 4.2 S1, Rev. 1, should be revised to clarify that information need only be provided based on the best available information sources. See NRC's response to Comment NEI1–7(3)–22 as related to this issue.

IDENTIFIER: NEI1–7(3)–24
COMMENT: *Threatened, Endangered, and Protected Species and Essential Fish Habitat* *Other Acts*—The subsection entitled "Other Acts" should be modified to read as follows: *Several federal laws, including the Marine Mammal Protection Act, the Migratory Bird Treaty Act, and the Bald and Golden Eagle Protection Act, also mandate the protection of certain species. Protected species that ~~have the potential~~ are known to occur on or in the vicinity of the site or ~~associated~~ in-scope transmission line ROWs* ***and may be affected by refurbishment activities or plant operational activities during the extended license term*** *should be discussed in the ER.* More than 800 North American bird species have been afforded legal protection under the MBTA, including all common songbirds, waterfowl, wading birds, and birds of prey. It should not be necessary for the ER to provide detailed information about every species with potential to occur. Detailed information should be required only for species that are known to occur and that may be adversely affected due to license renewal or refurbishment activities. In addition, consideration of transmission lines should be limited to those determined to be "in-scope" as describe in the GEIS (Sec. 3.1.1; page 3–3, lines 37 to 41).
NRC RESPONSE: The NRC disagrees with this comment to the extent that the applicant should not have to consider the potential occurrence of protected avian and other species. See NRC's response to comment NEI1–7(3)–22 as related to this issue. Again, it is not possible for the NRC to evaluate potential impacts on particular species or habitats *a priori*, without information on species and habitats that may potentially occur on or in the immediate vicinity of the site or within the applicant's in-scope transmission line ROWs. However, the NRC does not intend for an applicant to conduct either an exhaustive or overly conservative analysis of potential species occurrences or that new surveys be conducted. Rather, the NRC requests that applicants

utilize the best available information on species occurrence including any site-specific or regional surveys and credible reporting information available from Federal, State, and local agencies and organizations, coupled with best professional judgment in determining which species are known or have the potential to occur. The information requested is needed to assist the NRC in meeting its statutory obligations under Section 102(2) of NEPA and associated regulatory consultation requirements under other statutes and regulations. Providing the requested information is expected to result in a more efficient license renewal environmental review process for the NRC and industry alike. However, the "Other Acts" paragraph of Section 3.6 of RG 4.2 S1, Rev. 1, was revised to provide additional guidance to applicants and to clarify that data need only be provided based on available information from the National Marine Fisheries Service, U.S. Fish and Wildlife Service, State fish and wildlife agencies, and other knowledgeable organizations, which is consistent with the treatment of other environmental resources in RG 4.2 S1, Rev. 1.

11. Historic and Cultural Information (Section 3.7)

IDENTIFIER: NEI1–7(3)–25

COMMENT:

<u>*Historic and Cultural Information*</u>

Recommend the following changes in the event that applicants do not possess the requested photos and to clarify that the ER should only provide a discussion of historic and cultural resources present on-site since "identify" could be mistaken to imply showing the resources on a map.

"…*Plant and other historic maps show ownership, acreage, property boundaries, and the location of existing or former historic structures.* ***If available,*** *the ER should provide photos of the plant site before construction, preconstruction (showing land clearing), construction, and post-construction of the current facility*…

The ER should ***discuss*** ~~*identify*~~ *historic and cultural resources that are present on the site (especially within the area of potential affect)*…"

NRC RESPONSE:

The NRC agrees with the comment and has revised the text of Section 3.7 of RG 4.2 S1, Rev. 1, as suggested. Further clarifying changes have also been made to Section 3.7.

IDENTIFIER: NEI1–7(3)–26

COMMENT:

<u>*Historic and Cultural Resources*</u>

Implementing consultations and conducting investigations at sites that have been extensively disturbed and been operational for 20 years is an unwarranted burden in resources, finances, and time. The section should be changed as follows to reflect the appropriate level of consultation and investigation.

"*If the plant site has not been surveyed for historic and cultural resources, then the applicant should conduct reconnaissance or pedestrian surveys.* ***If cultural or historic resources that are included in, or eligible for inclusion in, the National Register, are believed present on site,*** *the applicant should initiate informal consultation and conduct investigations to assist in identifying onsite historic and cultural resources with a contractor approved by the State Historic Preservation Officer (SHPO) who meets the Secretary of Interior's standards. In consultation with the SHPO and appropriate American Indian tribes, the applicant should evaluate the significance of the historic and cultural resources and assess any effects continued operation of the plant may have on them through the license renewal period. Additionally, the applicant should identify, evaluate, and describe protection measures for historic and cultural resources through consultation with SHPO. The ER should include a summary of this information, as well as copies of correspondence with the SHPO, tribes, or members of the public the applicant used to assess historic and cultural resources within the area of potential effect*."

NRC RESPONSE:

The NRC disagrees with the comment. The NRC does not seek to impose an unwarranted burden on applicants and does not intend that applicants survey heavily-developed areas of nuclear power plant sites. However, the information and studies requested are needed to assist the NRC in meeting its statutory obligations under Section 102(2) of NEPA and in fulfilling its contingent regulatory consultation requirements under the National Historic Preservation Act and other laws relevant to historic and cultural resources. Further, historic and cultural resources (formerly historic and archaeological resources) remains a Category 2 issue, and an applicant is otherwise required under 10 CFR 51.53(c)(3)(ii)(K) to assess whether such resources would be affected. No change was made to RG 4.2 S1, Rev. 1, as a result of this comment.

12. Socioeconomics (Section 3.8)

IDENTIFIER: NEI1–7(3)–27
COMMENT: *Socioeconomics* -- Section 3.8, "Socioeconomics," should be deleted. Even though the GEIS designates socioeconomic impacts as a Category 1 issue, Section 3.8 in the draft Regulatory Guide instructs applicants to describe and discuss in the ER specific information concerning residential distribution of nuclear plant employees, recreational facilities located in the vicinity of the plant, and payments of taxes and other contributions to local jurisdictions near the plant. If no new and significant information has been identified regarding socioeconomics at a site, there is no need to describe socioeconomic resources because the GEIS already provides adequate information.
NRC RESPONSE: The NRC disagrees with the comment. See NRC's response to comment NEI1–7(3)–1 as related to the treatment of Category 1 issues. No change was made to RG 4.2 S1, Rev. 1, as a result of this comment.

IDENTIFIER: NEI1–7(3)–28
COMMENT: *Socioeconomics* If this section is not deleted as proposed, modify the section as follows based on the unavailability of private information*:* "*Describe public ~~and private~~ recreational facilities and tourist attractions located in the vicinity of the nuclear plant, including present and projected percentage of utilization* ***where available***."
NRC RESPONSE: The NRC agrees with the comment and has revised the text of Section 3.8 of RG 4.2 S1, Rev. 1, as suggested.

13. Human Health
(Section 3.9)

IDENTIFIER: NEI1–7(3)–29

COMMENT:

Electric Shock Hazards

The subsection titled "Electric Shock Hazards" in Section 3.9 should be moved to the subsection titled "Electric Shock Hazards" in Section 4.9 (page 43) and modified to read as follows:

"The applicant should determine whether any ~~sites or areas~~locations within the in-scope transmission line ROWs do not meet current National Electric Safety Code (NESC) clearance standards. In addition, the ER should identify any changes in the operation of in-scope transmission lines or maintenance of in-scope transmission line ROWs. The ER should include maps, photographs, or drawings indicating ~~the~~ locations of all sites that do not meet the NESC clearance standards."

Consideration of transmission lines should be limited to those determined to be "in-scope" as described in the GEIS (Sec. 3.1.1; page 3–3, lines 37 to 41).

NRC RESPONSE:

The NRC agrees in part with this comment and has revised the first sentence of the "Electric Shock Hazards" paragraph of Section 3.9 of RG 4.2 S1, Rev. 1, as suggested. The "Electric Shock Hazards" paragraph remains in Section 3.9.

14. Environmental Justice (Section 3.10)

IDENTIFIER: NEI1–7(3)–30
COMMENT: *Environmental Justice* The NRC should clarify what is meant by "migrant workers" (plant or agricultural) in the last sentence that states *"The ER should also include migrant workers as well as full-time residents and provide geographic information about the location of these populations and communities."*
NRC RESPONSE: The NRC agrees with the comment. The text of Section 3.10 of RG 4.2 S1, Rev. 1, was revised to add a definition of migrant workers based on descriptive information provided by the U.S. Bureau of the Census in guidance to 2010 Census partners. In order to characterize the current demographics in the vicinity of nuclear power plant sites, the NRC asks the assistance of applicants, as they are the most knowledgeable about unique workforce and population trends and workforce concentrations, including seasonal employment and population migration patterns.

15. Environmental Consequences of the Proposed Action and Mitigating Actions, General Guidance (Chapter 4)

IDENTIFIER: NEI1–7(3)–31

COMMENT:

General Guidance

The first 3 sentences in the 2nd paragraph of the subsection titled "General Guidance" in Chapter 4 should be modified to read as follows:

*"Of the remaining ~~19~~**20** environmental issues, ~~18~~**19** are Category 2 issues, which require plant-specific analyses. The following sections discuss information that the applicant should include in the ER to assist the NRC staff in evaluating the impacts of these ~~18~~**19** Category 2 issues. One issue (the **chronic** effects of electromagnetic fields) is not categorized, and the NRC staff addresses this issue separately in plants-specific supplements to the GEIS **without input from applicants**."*

NRC RESPONSE:

The NRC has revised the text of Section 4.0 of RG 4.2 S1, Rev. 1, to note that 17 issues are Category 2 and to make related changes consistent with the final revised GEIS and as described in the final rule, which revises Table B–1 in Appendix B to Subpart A of 10 Part 51. However, the phrase concerning input from applicants was not added. Regarding chronic effects of electromagnetic fields, applicants are required to provide in their ERs any new and significant information regarding the environmental impacts of license renewal of which the applicant is aware under 10 CFR 51.53(c)(3)(iv) to assist the NRC in its license renewal environmental reviews. This would include any new studies on such effects of which an applicant has commissioned or conducted or is otherwise aware. As such, inclusion of the phrase suggested by the commenter could cause confusion and could be seen as contradicting the requirement for applicants to divulge any new and significant information.

16. Land Use and Visual Resources (Section 4.1)

IDENTIFIER: NEI1–7(3)–32
COMMENT: *"Land Use and Visual Resources"* is a Category 1 issue that would be assessed in Chapter 5 of the ER if new and significant information existed. Therefore, it should be removed from the Environmental Consequences of the Proposed Action and Mitigating Actions section.
NRC RESPONSE: The NRC disagrees with the comment. See NRC's response to comment NEI1–7(3)–1 as related to the treatment of Category 1 issues. The NRC has combined several Category 1 land use and visual (aesthetic) issues associated with impacts of continued operations and refurbishment in order to facilitate their evaluation, instead of treating them separately as in the 1996 GEIS. Nevertheless, the NRC is not requiring applicants to evaluate the impacts on Category 1 issues in ERs, except as is required for any new and significant information as observed by the commenter. As noted in the NRC's response to NEI1-7(3)-1, however, the NRC is requesting that applicants provide a sufficiently detailed affected environment description for each Category 1 issue to provide the NRC with appropriate context and content to effectively conduct its National Environmental Policy Act (NEPA) review. In addition, such a description will expedite the NRC's environmental review as it will make the Chapter 4 analysis for each resource area in the ER consistent with the NRC's organization of the environmental impacts (consequences) in Chapter 4 of both the revised GEIS and plant-specific SEISs. No change was made to RG 4.2 S1, Rev. 1, or the revised GEIS as a result of this comment.

17. Air Quality
(Section 4.2)

IDENTIFIER: NEI1–7(3)–33

COMMENT:

Air Quality

NRC needs to clarify what triggers this assessment and the issue to be assessed. The revised Rule is very clear that refurbishment occurring in or near a nonattainment or maintenance area triggers the assessment and that vehicle emissions is the issue to be assessed. However, this draft regulatory guide appears to go beyond its legal boundary to require an applicant to assess cooling tower emissions regardless of refurbishment even though the GEIS concluded that cooling tower emission impacts would be small even under a worst case scenario.

Delete the final paragraph in section 4.2 of the DG4015.

NRC RESPONSE:

As presented in the revised GEIS, operating experience has shown that the potential air quality impacts from nuclear power plant operations, including cooling tower emissions, and impacts from refurbishment, have been small. With regard to the commenter's concern, recent analysis has shown that the worst-case emissions related to cooling tower drift droplets and particulate emissions at operating plants were also small. In addition, refurbishment activities have not resulted in exceedances in the *de minimis* thresholds for criteria pollutants in nonattainment and maintenance areas. NRC's analysis further shows that implementation of best management practices, including fugitive dust controls and the imposition of new and/or revised conditions in state and local air emissions permits, would ensure conformance with applicable State or Tribal Implementation Plans. On the basis of these considerations, the NRC has concluded that the air quality impact of continued nuclear plant operations during the license renewal term and refurbishment would be small for all plants, and has changed air quality from a Category 2 issue to Category 1, which has been renamed "Air quality impacts (all plants)." Consequently, the text in Section 4.2 of RG 4.2 S1, Rev. 1, requiring a detailed assessment of air quality impact issues by the applicant, was deleted and replaced with the following: "Impacts to air quality are evaluated in the GEIS and are considered to be generic (the same or similar at all plants), or Category 1. The applicant should discuss any new and significant information in the ER, if applicable; otherwise, air quality impacts do not need further assessment." In addition, Section 3.2 of RG 4.2 S1, Rev. 1, was updated and revised to clarify the scope of requested air quality information for the Category 1 issue.

IDENTIFIER: NEI1–7(3)–34

COMMENT:

Air Quality

To avoid confusion, recommend moving the subtitle, Impacts to Air Quality (Nonattainment and Maintenance Areas), to follow the regulatory basis for the discussion:

The GEIS reviews the following Category 2 issue, which requires a plant-specific analysis.

Table B–1 in Appendix B to Subpart A of 10 CFR Part 51 states the following:

"Air quality impacts of continued operations and refurbishment activities associated with the license renewal term are expected to be small. However, emissions during these activities could be a cause for concern at locations in or near air quality nonattainment or maintenance areas. The significance of the impact cannot be determined without considering the compliance status of each site and the activities that could occur. These impacts would be short-lived and cease after projects were completed."

Specifically, 10 CFR 51.53(c)(3)(ii)(F) requires the following:

"If the applicant's plant is located in or near a nonattainment or maintenance area, an assessment of vehicle exhaust emissions anticipated at the time of peak refurbishment work force must be provided in accordance with the Clean Air Act as amended."

NRC RESPONSE:

The text cited by the commenter in Section 4.2 of RG 4.2 S1, Rev. 1, requiring a detailed assessment of air quality impact issues by the applicant, was deleted and replaced with the following: "Impacts to air quality are evaluated in the GEIS and are considered to be generic (the same or similar at all plants), or Category 1. The applicant should discuss any new and significant information in the ER, if applicable; otherwise, air quality impacts do not need further assessment." In addition, Section 3.2 of RG 4.2 S1, Rev. 1, was updated and revised to clarify the scope of requested air quality information for the Category 1 issue. See NRC's response to comment NEI1–7(3)–33 as related to this issue.

IDENTIFIER: NEI1–7(3)–35

COMMENT:

<u>*Air Quality*</u>

Insert the reference for threshold emission levels (40 CFR 52.853(b)) in the first sentence of the paragraph beginning "The threshold emission levels serve…"

NRC RESPONSE:

The text cited by the commenter in Section 4.2 of RG 4.2 S1, Rev. 1, requiring a detailed assessment of air quality impact issues by the applicant, was deleted and replaced with the following: "Impacts to air quality are evaluated in the GEIS and are considered to be generic (the same or similar at all plants), or Category 1. The applicant should discuss any new and significant information in the ER, if applicable; otherwise, air quality impacts do not need further assessment." In addition, Section 3.2 of RG 4.2 S1, Rev. 1, was updated and revised to clarify the scope of requested air quality information for the Category 1 issue to include an updated reference to the threshold emission levels. See NRC's response to comment NEI1–7(3)–33 as related to this issue.

IDENTIFIER: NEI1–7(3)–36
COMMENT: *Air Quality* For clarity, reword item 2 under Information and Analysis Content as follows: "Identify the ~~positions~~ **locations** of nonattainment and maintenance areas relative to the plant…"
NRC RESPONSE: The text cited by the commenter in Section 4.2 of RG 4.2 S1, Rev. 1, requiring a detailed assessment of air quality impact issues by the applicant, was deleted and replaced with the following: "Impacts to air quality are evaluated in the GEIS and are considered to be generic (the same or similar at all plants), or Category 1. The applicant should discuss any new and significant information in the ER, if applicable; otherwise, air quality impacts do not need further assessment." In addition, Section 3.2 of RG 4.2 S1, Rev. 1, was updated and revised to clarify the scope of requested air quality information for the Category 1 issue. See NRC's response to comment NEI1–7(3)–33 as related to this issue.

18. Noise
(Section 4.3)

IDENTIFIER: NEI1–7(3)–37
COMMENT: *"Noise"* is a Category 1 issue that would be assessed in Chapter 5 of the ER if new and significant information existed. Therefore, it should be removed from the Environmental Consequences of the Proposed Action and Mitigating Actions section.
NRC RESPONSE: The NRC disagrees with the comment. See NRC's response to comment NEI1–7(3)–1 as related to the treatment of Category 1 issues. The NRC is not requiring applicants to evaluate the impacts on Category 1 issues in ERs, except as is required for any new and significant information as observed by the commenter. The NRC is, however, requesting that applicants submit a sufficiently detailed affected environment description of the Category 1 issue to provide the NRC with appropriate context and content to effectively conduct its National Environmental Policy Act (NEPA) review. In addition, such a description will expedite the NRC's environmental review as it will make the Chapter 4 analysis for each resource area in the ER consistent with the NRC's organization of the environmental impacts (consequences) in Chapter 4 of both the revised GEIS and plant-specific SEISs.

19. Geology and Soils (Section 4.4)

IDENTIFIER: NEI1–7(3)–38
COMMENT: *"Geology and Soils"* is a Category 1 issue that would be assessed in Chapter 5 of the ER if new and significant information existed. Therefore, it should be removed from the Environmental Consequences of the Proposed Action and Mitigating Actions section.
NRC RESPONSE: The NRC disagrees with the comment. See NRC's response to comment NEI1–7(3)–1 as related to the treatment of Category 1 issues. The NRC is not requiring applicants to evaluate the impacts on Category 1 issues in ERs, except as is required for any new and significant information as observed by the commenter. The NRC is, however, requesting that applicants submit a sufficiently detailed affected environment description of the Category 1 issue to provide the NRC with appropriate context and content to effectively conduct its National Environmental Policy Act (NEPA) review. In addition, such a description will expedite the NRC's environmental review as it will make the Chapter 4 analysis for each resource area in the ER consistent with the NRC's organization of the environmental impacts (consequences) in Chapter 4 of both the revised GEIS and plant-specific SEISs. No change was made to RG 4.2 S1, Rev. 1, or the revised GEIS as a result of this comment.

20. Hydrology
(Section 4.5)

IDENTIFIER: NEI1–7(3)–39

COMMENT:

Hydrology

For the *"Surface Water Use Conflicts (Plants with Cooling Ponds or Cooling Towers Using Makeup Water from a River with Low Flow)"* issue, recommend the following revision since water usage is ultimately dictated by each individual State to be protective of the ecosystem through its water appropriations permit system and the National Pollutant Discharge Elimination System as discussed in the Draft GEIS (pages 3–52 & A–12). Recommend rewording the language as follows:

"*No additional surface water conflict information is needed for **(1)** plants using once-through cooling systems **(2) plants** or not ~~specifically~~ **exclusively** using cooling towers or cooling ponds, **(3)** ~~or if thea~~ plant **that** take**s** its makeup water for the cooling towers or cooling ponds from a river with an annual flow greater than 3.15 × 10^{12} ft^3/yr (9 × 10^{10} m^3/yr), or **(4) plants whose water usage is ultimately dictated by each individual State through its water appropriations permitting system and/or the National Pollutant Discharge Elimination System permitting program**. The ER should explain the method used to determine the annual river flow **or reference permits associated with water appropriations,** and that no further information is needed with reference to these issues. If the plant does not meet the above conditions, the applicant should provide the information and analysis described below."*

NRC RESPONSE:

The NRC disagrees with the comment. The requested information will enable the NRC to meet its statutory obligations under Section 102(2) of NEPA and to specifically fulfill its responsibilities under 10 CFR 51.70(b) to independently evaluate and be responsible for the reliability of all information used in a SEIS and to provide evidence that the necessary environmental analyses have been conducted. As suggested by the commenter, plant water withdrawals may well indeed be subject to State water appropriation and/or National Pollutant Discharge Elimination System (NPDES) permitting requirements, which is relevant information applicants must already provide pursuant to 10 CFR 51.45(d). Regardless, the NRC must still perform an independent analysis in a plant-specific SEIS that considers an applicant's compliance with environmental quality standards and requirements as imposed by permitting and other authorities in accordance with 10 CFR 51.71(d). The NRC requests and requires the assistance of applicants in providing the necessary information in order to facilitate a more efficient license renewal environmental review process.

While the text of Section 4.5.1 of RG 4.2 S1, Rev. 1, was revised for clarity and editorial consistency, the NRC has not added the phrasing concerning water appropriations and NPDES permitting. In addition, the NRC has also removed the term "low flow" from the title of this and other related issues and the associated numerical definition from the discussion of the issues. The term "low flow" was used in the 1996 GEIS to define the difference between plants located on "small" rivers versus those on "large" rivers as related to annual river flow. The NRC has subsequently determined that the use of the terms in categorizing river flow and in directing industry as to which plants require an evaluation of water use conflicts is of little value, considering that only three plants still in operation would qualify as "large" river plants while all

others would be “small” or low flow river plants. Further, any river, regardless of size, can experience low flow conditions of varying severity during periods of drought and as further influenced by specific conditions in the affected watershed such as the effect of upstream diversions. As such, this remains a Category 2 issue requiring a site-specific analysis.

IDENTIFIER: NEI1–7(3)–40

COMMENT:

Hydrology

For the *“Groundwater Use Conflicts (Plants with Closed-Cycle Cooling Systems that Withdraw Makeup Water from a River)”* issue, it is recommended that the following language be inserted above the “Information and Analysis Content” section for consistency with other Category 2 issues related to a river and associated water conflicts, and to account for plants whose water usage are dictated by the applicable State:

“No additional groundwater water conflict information is needed for (1) plants that take its makeup water for closed-cycle cooling purposes from a river with an annual flow greater than 3.15×10^{12} ft^3/yr (9×10^{10} m^3/yr), ***or plants whose water usage is dictated by each individual State through its water appropriations permitting system and/or the National Pollutant Discharge Elimination System permitting program****. The ER should explain the method used to determine the annual river flow or reference permits associated with water appropriations, and that no further information is needed with reference to this issue. If the plant does not meet these conditions, the applicant should provide the information and analysis described below.”*

NRC RESPONSE:

The NRC disagrees with the comment. See NRC’s response to comment NEI1–7(3)–39 as related to this issue. While the text of Section 4.5.2 of RG 4.2 S1, Rev. 1, was revised to provide additional guidance to applicants and to improve clarity, the NRC has not added the phrasing concerning water appropriations and NPDES permitting.

IDENTIFIER: NEI1–7(3)–41

COMMENT:

Groundwater Use Conflicts (Plants with Closed-Cycle Cooling Systems That Withdraw Makeup Water from a River)

In this subsection, recommend the following modifications"

Modify the title to read as follows:

> *Groundwater Use Conflicts (Plants with Closed-Cycle Cooling Systems That Withdraw Makeup Water from a River* ***with Low Flow****)*

Modify the 1st paragraph to read:

This section applies to plants using cooling towers that withdraw makeup water from a river ***with low flow****.*

Modify the 1st sentence in the 1st paragraph in the subsection titled "Information and Analysis Content" to read:

If the plant withdraws cooling tower makeup water for a river ***with low flow****, the applicant should provide the following information and analyses to enable the NRC staff to assess the groundwater use conflicts during operation:*

NRC RESPONSE:

The NRC disagrees with the comment. While the text of Section 4.5.2 of RG 4.2 S1, Rev. 1, was revised slightly to improve clarity and editorial consistency, the term "low flow" has not been added. The NRC has removed the term "low flow" from the title of other related hydrologic issues and the associated numerical definition from the discussion of the issues. The term "low flow" was used in the 1996 GEIS to define the difference between plants located on "small" rivers versus those on "large" rivers as related to annual river flow. The NRC has subsequently determined that the use of the terms in categorizing river flow and in directing industry as to which plants require an evaluation of water use conflicts is of little value considering that only three plants still in operation would qualify as "large" river plants while all others would be "small" or low-flow-river plants. Further, any river, regardless of size, can experience low flow conditions of varying severity during periods of drought and as further influenced by specific conditions in the affected watershed such as the effect of upstream diversions. As such, this remains a Category 2 issue requiring a site-specific analysis.

IDENTIFIER: NEI1–7(3)–42

COMMENT:

Hydrology

For the *Groundwater Use Conflicts (Plants That Withdraw More Than 100 Gallons per Minute, Including Ranney Wells)* issue, it is stated that "*The Grand Gulf wells intercept most of their production from infiltration of Mississippi River water through the bottom of the river bed and have little or no impact on surrounding groundwater users and should not be considered further in ERs*". Since Grand Gulf is the only plant within the industry to utilize Ranney Wells and Regulatory Guide DG–4015 (RG 4.2 S1, Rev. 1) concludes that the wells have little or no impact, it is recommended that the reference to Ranney Wells be removed from this Category 2 issue, and that the issue be re-named *"Groundwater Use Conflicts (Plants That Withdraw More Than 100 Gallons per Minute)".*

NRC RESPONSE:

The NRC agrees with the comment and acknowledges that Grand Gulf is unique with regard to its use of Ranney wells at the present time. The text of Section 4.5.2 of RG 4.2 S1, Rev. 1, was revised to remove the references to Ranney wells and to clarify that the scope of this consolidated Category 2 issue is focused on plants that withdraw greater than 100 gpm of groundwater rather than on the use of Ranney wells, which were two separate issues in the 1996 GEIS.

IDENTIFIER: NEI1–7(3)–43

COMMENT:

Hydrology

For the *Groundwater Use Conflicts (Plants That Withdraw More Than 100 Gallons per Minute, Including Ranney Wells)* issue, recommend the following revision since water withdrawal quantities are ultimately dictated by each State through its groundwater permitting system to be protective of the ecosystem.

"…*If the applicant can provide withdrawal records or other evidence that the plant does not pump more than an annual average of 100 gpm (6 L/s) of groundwater,* ***or if groundwater usage is dictated through a State permitting system,*** *the ER should note this fact, and no additional information need be provided*."

NRC RESPONSE:

The NRC disagrees with the comment. The requested information will enable the NRC to meet its statutory obligations under Section 102(2) of NEPA and to specifically fulfill its responsibilities under 10 CFR 51.70(b) to independently evaluate and be responsible for the reliability of all information used in a SEIS and to provide evidence that the necessary environmental analyses have been conducted. As suggested by the commenter, plant water withdrawals may well indeed be subject to State groundwater permitting or appropriation requirements, which is relevant information applicants must already provide pursuant to 10 CFR 51.45(d). Regardless, the NRC must still perform an independent analysis in a plant-specific SEIS that considers an applicant's compliance with environmental quality standards and requirements as imposed by permitting and other authorities in accordance with 10 CFR 51.71(d). The NRC requests and requires the assistance of applicants in providing the necessary information in order to facilitate a more efficient license renewal environmental review process. No change was made to RG 4.2 S1, Rev. 1, as a result of this comment.

IDENTIFIER: NEI1–7(3)–44

COMMENT:

Hydrology

For the *"Groundwater Quality Degradation (Plants with Cooling Ponds at Inland Sites)"* issue, it is recommended that applicants be only required to assess the issue if the cooling pond is unlined. This is consistent with NRC's reference to unlined wastewater lagoons identified in 10 CFR 51.53(c)(3)(ii)(O) and would be consistent with the GEIS discussion that no groundwater contamination is anticipated from lined cooling ponds.

Under "Information and Analysis Content", modify the first sentence to read:
"*If the plant uses* ***unlined*** *cooling ponds and is not adjacent to salt marshes*…"

NRC RESPONSE:

The NRC disagrees with the comment. As reaffirmed in the revised GEIS, the impacts of groundwater quality degradation for plants using cooling ponds at inland sites could be small,

moderate, or large, depending on site-specific differences. Thus, it remains a Category 2 issue. Site-specific differences include such factors as water quality of the cooling ponds, site hydrogeologic conditions, and groundwater well locations, and pumping rates. These factors are ones that the NRC seeks information about in order to fulfill its responsibilities under 10 CFR 51.70(b) to independently evaluate and be responsible for the reliability of all information used in a SEIS and to provide evidence that the necessary environmental analyses have been conducted. The lining of ponds or other engineering solutions are specified in the GEIS as possible mitigation measures to the issue, and NRC's guidance in RG 4.2 S1, Rev. 1, specifically requests that applicants describe in their ERs those cooling pond characteristics such as liners or impermeable materials that would retard or prevent infiltration into local aquifers.

No change was made to RG 4.2 S1, Rev. 1, as a result of this comment.

IDENTIFIER: NEI1–7(3)–45

COMMENT:

Hydrology

For the *"Groundwater and Soil Contamination"* issue, the NRC needs to provide clarification regarding the applicability based on the wording below. It is not clear whether the applicant is required to assess the issue when they are using solvents, hydrocarbons, heavy metals, or other chemicals **and** have unlined wastewater lagoons, or required to assess when they only use solvents, hydrocarbons, heavy metals, or other chemicals.

- Page 30: *This section applies to plants that may have soil or groundwater contamination due to industrial practices involving the use of solvents, hydrocarbons, heavy metals, or other chemicals. Onsite sources may include lined or unlined lagoons, pipe and valve leakages, fuel spills, or other inadvertent incidents.*

- Page 30: Table B–1 states the following:

  Industrial practices involving the use of solvents, hydrocarbons, heavy metals, or other chemicals and unlined wastewater lagoons have the potential to contaminate site groundwater, soil, and subsoil. Contamination is subject to State- and Environmental Protection Agency (EPA)-regulated cleanup and monitoring programs.

- Page 30: Specifically, 10 CFR 51.53(c)(3)(ii)(O) requires the following:
  If the applicant's plant conducts industrial practices involving the use of solvents, hydrocarbons, heavy metals, or other chemicals and has unlined wastewater lagoons, the applicant shall assess the potential for contamination of site groundwater, soil, and subsoil. The applicant shall provide an assessment of dissolved chemical and suspended sediment discharge to the plant's wastewater lagoons in addition to National Pollutant Discharge Elimination System (NPDES) compliance data collected for submittal to the U.S. Environmental Protection Agency (EPA) or designated State agency. A summary of existing reports describing site groundwater and soil contamination should also be included.

NRC RESPONSE:

The NRC agrees in principle with this comment and has modified the scope and focus of this issue for clarity. While originally proposed as a new, separate Category 2 issue in the proposed rule, "Groundwater and soil contamination," further evaluation by the NRC and consideration of public comments reveals that potential effects on groundwater and soil quality from common industrial practices can be addressed generically (i.e., Category 1) as such industrial practices are common to industrial facilities and not unique to nuclear power plants. As supported by the analysis in the revised GEIS, the NRC concludes that the overall impact of industrial practices on groundwater use and quality from past and current operations is small for all nuclear power plants and not expected to change appreciably during the license renewal term. The final rule amends Table B-1 by renaming the 1996 GEIS issue, "Impacts of refurbishment on groundwater use and quality," as "Groundwater contamination and use (non-cooling system impacts)." The final rule further expands the scope of this issue to include the impacts analyzed in the proposed rule's Category 2 issue, "Groundwater and soil contamination," (see 74 FR 38122, 38135). The revised GEIS and final rule classify the "Groundwater contamination and use (non-cooling system impacts)" issue as Category 1.

The 1996 GEIS issue and the proposed rule issue were consolidated, as both issues consider common industrial activities and aspects of continued operations of a nuclear power plant (not directly related to cooling system effects) and their potential for groundwater use and quality impacts from spills and other contaminant releases. As consolidated, this new Category 1 issue evaluates the impacts of the industrial use of solvents, hydrocarbons, heavy metals, or other chemicals on groundwater, soil, and subsoil at nuclear power plant sites during the license renewal term; the issue also considers the impacts resulting from the use of wastewater disposal ponds and lagoons.

Thus, Section 4.5.2 of RG 4.2 S1, Rev. 1, was revised to delete "groundwater and soil contamination" as a Category 2 issue, along with its removal from the final rule at 10 CFR 51.53(c)(3)(ii)(O). Accordingly, Section 3.5 of RG 4.2 S1, Rev. 1, has been revised to request that applicants provide in their ERs a discussion of plant industrial practices that may have caused or could cause soil or groundwater contamination, as well as a description of any current or historical soil and/or groundwater contamination. While no longer a Category 2 issue, providing the information requested by RG 4.2 S1, Rev. 1, will expedite the license renewal environmental review process and will better enable the NRC to fulfill its responsibilities under 10 CFR 51.70(b) to independently evaluate and be responsible for the reliability of all information used in a SEIS and to provide evidence that the necessary environmental analyses have been conducted.

IDENTIFIER: NEI1–7(3)–46

COMMENT:

Hydrology

For the *"Groundwater and Soil Contamination"* issue, the "Information and Analysis Content" section needs to specify that information included in the assessment only relates to spills that were reportable to offsite agencies and that are still actively being remediated. If no remediation is occurring, then groundwater and soil are not being impacted and therefore this issue would not be applicable.

NRC RESPONSE:

NRC disagrees with this comment. As further described in NRC's response to comment NEI1–7(3)–45, Section 4.5.2 of RG 4.2 S1, Rev. 1, was revised to delete "Groundwater and soil contamination" as a Category 2 issue. Instead, the NRC has combined a previous Category 1 issue, "Groundwater use and quality" from Table B–1 of the proposed rule and analyzed in the 1996 GEIS with the issue of "Groundwater and soil contamination" to create a combined Category 1 issue, "Groundwater contamination and use (non-cooling system impacts)." Accordingly, Section 3.5 of RG 4.2 S1, Rev. 1, has been revised to request that applicants provide in their ERs a discussion of plant industrial practices that may have caused or could cause soil or groundwater contamination, as well as a description of any current or historical soil and/or groundwater contamination. The scope of this combined Category 1 issue is not rooted in regulatory triggers for reporting releases or in the magnitude of remediation required, but rather, on the need for license renewal environmental reviews to consider industrial practices at plant sites with the potential for groundwater and soil contamination during the period of extended plant operation.

While the NRC must consider an applicant's compliance with environmental quality standards and associated permitting requirements as prescribed by 10 CFR 51.71(d), license renewal environmental reviews must address the full spectrum of environmental impacts associated with operations over the license renewal term. This is essential to enable the NRC to meet its statutory obligations under Section 102(2) of NEPA and to specifically fulfill its responsibilities under 10 CFR 51.70(b) to independently evaluate and be responsible for the reliability of all information used in a SEIS and to provide evidence that the necessary environmental analyses have been conducted. Because some sites have had spills and releases to the environment, thus altering the affected environment, Section 3.5 requests information on all spills and releases and current and historical contamination, which may or may not have required reporting to regulatory agencies.

IDENTIFIER: NEI1–7(3)–47

COMMENT:

Hydrology

For the *"Groundwater and Soil Contamination"* issue, the NRC needs to clarify the association between the groundwater and soil contamination issue and the NPDES Permit.

NRC RESPONSE:

The NRC agrees in principle with this comment. See also NRC's response to comment NEI1–7(3)–45. Section 4.5.2 of RG 4.2 S1, Rev. 1, was revised to delete "Groundwater and soil contamination" as a Category 2 issue. Instead, the NRC has combined a previous Category 1 issue, "Groundwater use and quality" from Table B-1 of the proposed rule and analyzed in the 1996 GEIS with the issue of "Groundwater and soil contamination" to create a combined Category 1 issue, "Groundwater contamination and use (non-cooling system impacts)." Accordingly, Section 3.5 of RG 4.2 S1, Rev. 1, has been revised to request that applicants provide necessary information to assist the NRC in its license renewal environmental reviews. As revised, Section 3.5 does not separately request a copy of the applicant's NPDES permit, as NPDES permit considerations must be addressed in ERs in accordance with 10 CFR 51.45(d).

This does not otherwise affect NRC's obligation to specifically consider an applicant's compliance with environmental quality standards and requirements as imposed by permitting and other authorities in accordance with 10 CFR 51.71(d).

IDENTIFIER: NEI1–7(3)–48

COMMENT:

Hydrology

For the *"Radionuclides Released to Groundwater"* issue, recommend that the following language be added above the "Information and Analysis Content" section: "*If there has not been any inadvertent releases of radioactive liquid into the groundwater* ***that have not been remediated*** *or if monitoring wells have not identified any detectable concentrations above background, the ER should note this fact, and no further information need be provided."*

NRC RESPONSE:

The NRC disagrees with this comment. As some sites have had releases, thus altering the affected environment, which may or may not have resulted in regulatory involvement and active remediation, it cannot be considered generic to and small at every power plant and is, therefore, considered a Category 2 issue requiring a site-specific analysis. The information requested will assist the NRC in characterizing the affected environment with regard to groundwater resources and quality, and aid in license renewal environmental reviews.

This information is also needed for the NRC to meet its statutory obligations under NEPA, and specifically, to fulfill its responsibilities under 10 CFR 51.70(b) to independently evaluate and be responsible for the reliability of all information used in a SEIS, and to provide evidence that the necessary environmental analyses have been conducted. The NRC must also specifically consider an applicant's compliance with environmental quality standards and requirements, as imposed by permitting and other authorities in accordance with 10 CFR 51.71(d). As such, RG 4.2 S1, Rev. 1, provides clear guidance to applicants regarding the information required for NRC staff review to satisfy 10 CFR Part 51 requirements. However, in response to this comment, Section 4.5.2 of RG 4.2 S1, Rev. 1, has been revised to add the following to the bulleted list of information needs requested from applicants with regard to radionuclides released to groundwater: "For documented inadvertent releases of radionuclides into groundwater, include a description of any ongoing or completed remediation actions, and the residual activity remaining after the remediation was completed, if not ongoing."

IDENTIFIER: NEI1–7(3)–49

COMMENT:

Hydrology

Amend the second sentence under Information and Analysis Content as follows:
"…*The purpose of the* ***voluntary*** *initiative is to improve* ***a*** *nuclear ~~industry~~* ***power plant's*** *programs for preventing, detecting, and…*"

NRC RESPONSE:

The NRC agrees with the comment and has revised the text of Section 4.5.2 of RG 4.2 S1, Rev. 1, as suggested by the commenter.

IDENTIFIER: NEI1–7(3)–50

COMMENT:

Hydrology

For the *"Radionuclides Released to Groundwater"* issue, recommend the following change*:*

"*Develop a table and accompanying map showing the distribution of radionuclide concentrations across the site (e.g., tritium concentrations in picocuries per liter)* ***for concentrations detected above the ODCM LLD for environmental water samples****. A series of maps may be necessary to depict the concentration at depth.*"

NRC RESPONSE:

The NRC disagrees with the comment. The Offsite Dose Calculation Manual (ODCM) lower limits of detection (LLDs) are used by licensees to demonstrate compliance with NRC dose standards. In contrast, NRC seeks the best available information with respect to the impact of inadvertent releases of radioactive materials on groundwater quality to enable the NRC to meet its statutory obligations under Section 102(2) of NEPA. and specifically, to fulfill its responsibilities under 10 CFR 51.70(b) to independently evaluate and be responsible for the reliability of all information used in a SEIS and to provide evidence that the necessary environmental analyses have been conducted. As such, the NRC has routinely observed much lower (i.e., more sensitive) LLDs being used by licensees for their analysis of environmental water samples. The NRC staff performs an historical review of each applicant's radiological effluent and environmental monitoring data as part of its evaluation of the radiological impacts associated with plant operations during the license renewal term. The NRC staff has routinely observed that the LLDs used in reporting radionuclide concentrations in groundwater protection program monitoring wells are significantly lower than the LLDs required by the ODCM. Such data is routinely reported by licensees in either their annual radioactive effluent release report or the annual radiological environmental monitoring program report. Therefore, since radionuclide concentrations using more sensitive LLDs are routinely reported in publically available documents, the NRC believes that the data reported for this Category 2 issue should use the LLDs routinely used for the applicant's groundwater protection program. No change was made to RG 4.2 S1, Rev. 1, as a result of this comment. However, under the "Information and Analysis Content" section for this issue, the text in Section 4.5.2 of RG 4.2 S1, Rev. 1 was revised to provide additional guidance to applicants with respect to the intended meaning of "documented" inadvertent releases of radionuclides into groundwater.

IDENTIFIER: NEI1–7(3)–51
COMMENT: *Hydrology* For the *"Radionuclides Released to Groundwater"* issue, the last bullet on page 31 requires an applicant to include a table and map(s) depicting the distribution of detectable radionuclide concentrations across the site and with depth. NEI 07–07 does not require three-dimensional plume characterization of all detectable radionuclides in groundwater, particularly since the instances of groundwater contamination identified to date have not represented a risk to public health, safety, or the environment. Recommend deleting the last bullet on page 31.
NRC RESPONSE: The NRC disagrees with the comment. The NRC is not requesting that applicants perform three-dimensional modeling but requests that available information concerning radionuclide concentrations at depth be provided and depicted graphically in order to assist the NRC and facilitate its review. In response to this comment, Section 4.5.2 of RG 4.2 S1, Rev. 1, has been revised for clarity to note that applicants may provide a series of tables and maps to depict concentrations at depth, using available information, so that a three-dimensional plume characterization map is not required.

21. Ecology
(Section 4.6)

IDENTIFIER: EPA-3-3
***COMMENT*:** Section 4.6, Thermal Impacts on Aquatic Organisms (Plants with Once-Through or Cooling Ponds) states that "if the applicant's plant utilizes once-through cooling or cooling pond heat dissipation systems, the applicant shall provide a copy of the current Clean Water Act 316(b) determination and, if necessary, a 316(a) variance in accordance with 40 CFR Part 125, or equivalent State permits and supporting documentation." EPA recommends that this statement be revised to note that a 316(a) variance is only required if a facility cannot meet required water quality standard effluent limitations, and must be applied for every 5 years with permit renewal. A facility must be able to demonstrate that the requested thermal variance is more stringent than necessary to assure the propagation of a balanced, indigenous aquatic organism population.
NRC RESPONSE: The NRC disagrees with the comment. NRC's central purpose for issuing RG 4.2 S1, Rev. 1, is to assist applicants in providing complete information in their ERs so as to facilitate license renewal environmental reviews conducted by the NRC in accordance with 10 CFR Part 51. The NRC regulations at 10 CFR 51.53(c)(3)(ii)(B) require that applicants provide pertinent Clean Water Act compliance documentation, such as any 316(a) variance, for NRC review, where it may be applicable. While the NRC performs an independent analysis in a plant-specific SEIS that considers an applicant's compliance with environmental quality standards and requirements as imposed by permitting and other authorities in accordance with 10 CFR 51.71(d), it has no regulatory role in issuing Clean Water Act 316(a) variances or administration of 40 CFR Part 125 compliance. However, the text of Section 4.6.3 of RG 4.2 S1, Rev. 1, relevant to NRC's guidance to applicants, was revised to clarify that the NRC considers a "current" variance to be one coinciding with the plant's most recent NPDES permit renewal application.

IDENTIFIER: EPA-3-4
COMMENT: Section 4.6, Impingement and Entrainment of Aquatic Organisms (Plants with Once-Through Cooling Systems or Cooling Ponds) and Thermal Impacts on Aquatic Organisms (Plants with Once-Through Cooling or Cooling Ponds) both refer to a "current 316(a) demonstration" and "a current 316(b) demonstration" respectively. Some facilities claim 30 year old data as being "current." For this reason EPA suggests that the draft GEIS define the term "current" to coincide with the most recent NPDES permit application data which should be submitted every five years.

NRC RESPONSE:

The NRC agrees with the comment. The NRC shares EPA's concerns regarding the need for industry to provide relevant and valid data to facilitate and guide regulatory decision-making. The NRC revised the text of Section 4.6.3 of RG 4.2 S1, Rev. 1 in response to this comment to indicate that the NRC considers a "current" Clean Water Act 316(b) determination and 316(a) variance, respectively, to be ones coinciding with the plant's most recent NPDES permit renewal application.

IDENTIFIER: NEI1–7(3)–52

COMMENT:

General—To improve clarity within the section and for consistency with Table B–1 in Appendix B to Subpart A of 10 CFR Part 51, NRC should consider inserting subsections with titles into Section 4.6, as described below:

1. Insert a subsection number (4.6.1) into the title of the 1st existing subsection in Section 4.6 (on page 32), as follows:

4.6.1 *General Approach for Information and Analysis Content for All Ecological Issues*

2. Insert a subsection number (4.6.2) and a new title before the title of the 2nd existing subsection in Section 4.6 (on page 33), as follows:

4.6.2 *Terrestrial Resources*

Water Use Conflicts on Terrestrial Resources

This section applies to …

3. Insert a subsection number (4.6.3) and a new title before the title of the 4th existing subsection in Section 4.6 (on page 35), as follows:

4.6.3 *Aquatic Resources*

Impingement and Entrainment of Aquatic Organisms (Plants with Once-Through Cooling Systems or Cooling Ponds)

This section applies to …

4. Insert a subsection number (4.6.4) into the title of the 7th existing subsection in Section 4.6 (on page 38), as follows:

4.6.4 *Threatened, Endangered, and Protected Species and Essential Fish Habitat*
Table B–1 states the following: …

NRC RESPONSE:

The NRC agrees with the comment. The formatting and subsection structure of Section 4.6 of RG 4.2 S1, Rev. 1, was revised as suggested, and structural changes in format have been made throughout the document for consistency and to improve readability and use.

IDENTIFIER: NEI1–7(3)–53

COMMENT:

Ecology

Recommend the following revision to allow plants that may not have a requirement to conduct studies to utilize studies performed by outside agencies or organizations that can be relevant to the site.

"*Studies and monitoring programs. Briefly summarize any studies or monitoring programs that provide site-specific data* ***or data that may be relevant to the site*** *and explain environmental impacts…*"

NRC RESPONSE:

The NRC agrees with the comment and has revised the text of Section 4.6.1 of RG 4.2 S1, Rev. 1, as suggested by the commenter.

IDENTIFIER: NEI1–7(3)–54

COMMENT:

Ecology

Recommend either (1) deleting the language below since studies are typically required to be conducted in accordance with a specific permit due to public or regulatory concerns, and therefore will not be consistent across the industry, or (2) revising the language to account for concerns from the agency having oversight of a particular resource.

"*…~~If data are older than 5 years old, explain why the studies would or would not be relevant for assessing the effects of present and projected future plant operation over the term of license renewal. For example, demonstrate that both the potentially affected resources and the effect of the plant on them have remained and can be expected to remain unchanged over the term of license renewal.~~* OR

…If data are older than 5 years old ***and regulatory agencies have expressed concern regarding a particular resource,*** *explain why the studies would or would not be relevant for assessing the effects of present and projected future plant operation over the term of license renewal…*"

NRC RESPONSE:

The NRC disagrees with the comment. Current information on ecological and other resources or environmental conditions is essential to enable the NRC to provide assurance that impacts analyses and projections can be relied upon into the license renewal term. This is essential to enable the NRC to meet its statutory obligations under Section 102(2) of NEPA. and specifically, to fulfill its responsibilities under 10 CFR 51.70(b) to independently evaluate and be responsible for the reliability of all information used in a SEIS and to provide evidence that the necessary environmental analyses have been conducted. If site studies or monitoring data are older than five years, NRC's guidance gives applicants the opportunity to demonstrate that such studies continue to be valid for the purposes of license renewal environmental reviews.

No change was made to RG 4.2 S1, Rev. 1, as a result of this comment.

IDENTIFIER: NEI1–7(3)–55

COMMENT:

Ecology

For the *"Water Use Conflicts on Terrestrial Resources"* issue, recommend the following revision since water usage is dictated by each individual State through its water appropriations permit system and the National Pollutant Discharge Elimination System as discussed in the Draft GEIS (pages 3–52 & A–12) to be protective of the ecosystem.

"No additional surface water conflict information is needed for (1) plants using once-through cooling systems, (2) plants that do not specifically use cooling towers or cooling ponds, ~~or~~ (3) plants drawing makeup water for the cooling towers or cooling ponds from a river with an annual flow greater than 3.15 ×10^{12} ft^3/yr (9 × 10^{10} m^3/yr), ***or (4) plants whose water usage is dictated by each individual State through its water appropriations permitting system and/or the National Pollutant Discharge Elimination System permitting program."***

NRC RESPONSE:

The NRC disagrees with the comment. The requested information will enable the NRC to meet its statutory obligations under Section 102(2) of NEPA, and specifically, to fulfill its responsibilities under 10 CFR 51.70(b) to independently evaluate and be responsible for the reliability of all information used in a SEIS and to provide evidence that the necessary environmental analyses have been conducted. As suggested by the commenter, plant water withdrawals may well indeed be subject to State water appropriation and/or NPDES permitting requirements, which is relevant information applicants must already provide pursuant to 10 CFR 51.45(d). Regardless, the NRC must still perform an independent analysis in a plant-specific SEIS that considers an applicant's compliance with environmental quality standards and requirements as imposed by permitting and other authorities in accordance with 10 CFR 51.71(d). The NRC requests and requires the assistance of applicants in providing the necessary information in order to facilitate a more efficient license renewal environmental review process. While the text of Section 4.6.2 of RG 4.2 S1, Rev. 1, was revised for clarity and editorial consistency, NRC has not added the phrasing concerning water appropriations and NPDES permitting.

IDENTIFIER: NEI1–7(3)–56
COMMENT: *3. Show the Relationships Between Plant Operation and the Resource Attributes* Delete the line that immediately precedes the subsection titled "Water Use Conflicts on Terrestrial Resources," as follows: ~~*The GEIS reviews the following Category 2 issues, which require a plant-specific analysis:*~~ The phrase suggested for deletion is confusing because it is not needed if subsection headings are inserted, as was suggested in the preceding comment.
NRC RESPONSE: The NRC agrees with the comment and has deleted the sentence as suggested in Section 4.6.1 of RG 4.2 S1, Rev. 1.

IDENTIFIER: NEI1–7(3)–57
COMMENT: *Water Use Conflicts on Terrestrial Resources* Modify the 2nd paragraph in the subsection titled "Water Use Conflicts on Terrestrial Resources" to accurately reflect the language in proposed Table B–1 (74 FR 38117 at 38136; published 7/31/2009). The sentence should read as follows: *Table B–1 notes ~~that the impacts of surface water use on terrestrial resources are anticipated to be small or moderate. The table also notes~~ that "impacts on terrestrial resources in riparian communities affected by water use conflicts could be of moderate significance in some situations."*
NRC RESPONSE: The NRC agrees with the comment and has revised the text of Section 4.6.2 of RG 4.2 S1, Rev. 1, for consistency with the findings in Table B–1 of the final rule as follows: "Impacts on terrestrial resources in riparian communities affected by water use conflicts could be of moderate significance." In addition, the quoted text from 10 CFR 51.53(c)(3)(ii)(A) has also been revised for consistency with the final rule and for clarity as follows: If the applicant's plant utilizes cooling towers or cooling ponds and withdraws makeup water from a river, an assessment of the impact of the proposed action on water availability and competing water demands, the flow of the river, and related impacts on stream (aquatic) and riparian (terrestrial) ecological communities must be provided.

IDENTIFIER: NEI1–7(3)–58
COMMENT: *Ecology* For the *Impacts of Continued Plant Operations on Terrestrial Ecosystems* issue, recommend the following revision since (1) plants can only identify known activities, and (2) areas containing no terrestrial habitat need not be assessed. "*The applicant should describe any **known** activities associated with license renewal and continued operations, maintenance, and refurbishment that will disturb terrestrial habitat. If no known area will be disturbed **or if an area to be disturbed contains no terrestrial habitat (i.e., industrial plant areas),** the ER should note that fact and no further discussion of the issue is needed…*"
NRC RESPONSE: The NRC agrees in substance with the comment and has revised the text of Section 4.6.2 of RG 4.2 S1, Rev. 1, in a manner similar to that suggested.

IDENTIFIER: NEI1–7(3)–59
COMMENT: *Impacts of Continued Plant Operations on Terrestrial Ecosystems* The paragraph under the title "Information and Analysis Content" is unclear and should be modified to read as follows: *"The ER should follow the general approach for information and analysis content for all ecology issues as described at the beginning of this section. In addition, if a ~~license renewal~~ **refurbishment** activity will disturb any plant or wildlife habitat, the ER should describe ~~any land~~ **the habitat** that will be disturbed during transport and delivery of equipment, structures, or components; **in** material laydown area**s;** ~~or~~ **and in** construction **areas** associated with refurbishment. …"*
NRC RESPONSE: The NRC agrees in substance with the comment and has revised the text of Section 4.6.2 of RG 4.2 S1, Rev. 1, in a manner similar to that suggested.

IDENTIFIER: NEI1–7(3)–60
COMMENT: *Impingement and Entrainment of Aquatic Organisms (Plants with Once-Through Cooling Systems or Cooling Ponds)* The quoted text from 10 CFR 51.53(c)(3)(ii)(B) does not reflect the proposed changes

(74 FR 38117 at 38132; 07/31/2009) and should be modified to account for those changes. In addition, both the proposed regulatory text (in 10 CFR 51.53(c)(3)(ii)(B)) and the text in the Regulatory Guide (6th paragraph in the subsection titled "Impingement and Entrainment of Aquatic Organisms (Plants with Once-Through Cooling Systems or Cooling Ponds); page 35) should be modified to eliminate the requirement to include in the ER copies of supporting documentation for the 316(b) determination. Such documentation, which can be voluminous, would be available to the NRC and could be reviewed by the Staff during the on-site License Renewal Environmental Audit. If this review identifies the need for copies of specific documents, they can be requested by the Staff and provided at that time. It should be adequate to provide summaries of the supporting documentation in the ER.

Accordingly, the quoted text from 10 CFR 51.53(c)(3)(ii)(B) should be modified to read as follows:

"If the applicant's plant utilizes once-through cooling or cooling pond heat dissipation systems, the applicant shall provide a copy of current Clean Water Act 316(b) determinations … or equivalent State permits and ***summaries of*** *supporting documentation. If the applicant cannot provide these documents, it shall assess the impact of the proposed action on fish and shellfish resources resulting from ~~heat shock~~* ***thermal changes*** *and impingement and entrainment."*

Additionally, the text in the Regulatory Guide (6th paragraph in the subsection titled "Impingement and Entrainment of Aquatic Organisms (Plants with Once-Through Cooling Systems or Cooling Ponds); page 35) should be modified to read as follows:

"If the plant uses a once-through or closed-cycle cooling pond heat dissipation system and the applicant holds a current Clean Water Act Section 316(b) determination, the applicant should provide the NRC with copies of the determination, ***summaries of*** *supporting documentation, and relevant correspondence with the water quality permitting agency (EPA or permitting State agency). Additionally, the ER should describe any ~~potential~~ mitigation measures and state whether they will be* ***or have been*** *implemented."*

NRC RESPONSE:

The NRC agrees in part with this comment, namely, that consistency with the quoted rule language is needed. The text of Section 4.6.3 of RG 4.2 S1, Rev. 1, was revised for consistency with the final rule language. With regard to the other issues raised, the NRC disagrees. Although NPDES permitting has typically been sufficient to restrict and mitigate the potential effects of operations so that impacts remain small, not all plants undergoing license renewal have had recent reviews of their NPDES permits, and there are many site-specific operational, hydrologic, and biological aspects that could influence the potential for impacts. Therefore, the NRC requests that applicants identify any potential mitigation measures that have been identified.

Regarding the provision of summary information, the NRC is not requesting that applicants summarize relevant Clean Water Act 316(a) and 316(b) documentation, although they are free do so in their ER submissions. The NRC is requesting that existing supporting documentation already prepared for submission to regulatory agencies be made available. It is important that up-to-date evaluations of the extent of thermal and biotic changes in the aquatic environment be made and that current and historic supporting information be reviewed by the NRC to evaluate the level of effects to aquatic resources as part of its review. As the NRC is compelled to review such documentation or request it (if not provided as part of the ER submission), the NRC seeks

to make its expectations clear that such documentation be provided at the outset of the license renewal environmental review. With the exception of adding the phrase "or have been" as suggested, no other suggested changes have been made to the text of Section 4.6.3 in response to this comment.

IDENTIFIER: NEI1–7(3)–61

COMMENT:

Thermal Impacts on Aquatic Organisms (Plants with Once-Through Cooling Systems or Cooling Ponds)

The quoted text from 10 CFR 51.53(c)(3)(ii)(B) does not reflect the proposed changes (74 FR 38117 at 38132; 07/31/2009) and should be modified as follows to account for those changes and to eliminate the requirement to include in the ER copies of supporting documentation for the 316(b) determination:

"If the applicant's plant utilizes once-through cooling or cooling pond heat dissipation systems, the applicant shall provide a copy of current Clean Water Act 316(b) determinations and, if necessary, a 316(a) variance in accordance with 40 CFR Part 125, or equivalent State permits and ***summaries of*** *supporting documentation. If the applicant cannot provide these documents, it shall assess the impact of the proposed action on fish and shellfish resources resulting from ~~heat shock~~* ***thermal changes****."*

The text in the Regulatory Guide (6th paragraph in the subsection titled "Thermal Impacts on Aquatic Organisms (Plants with Once-Through Cooling Systems or Cooling Ponds); page 37) should also be modified to eliminate the requirement to include in the ER copies of supporting documentation for the 316(b) determination. Such documentation, which can be voluminous, would be available to the NRC and could be reviewed by the Staff during the on-site License Renewal Environmental Audit. If this review identifies the need for copies of specific documents, they can be requested by the Staff and provided at that time. It should be adequate to provide summaries of the supporting documentation in the ER.

Accordingly, the Regulatory Guide text should be modified as follows:

"If the plant uses a once-through or closed-cycle cooling pond heat dissipation system and the applicant holds a current NPDES permit that demonstrates that the plant meets State water temperature standards, or a current Clean Water Act Section 316(a) determination, the applicant should provide the NRC with copies of the determination, NPDES permit, ***summaries of*** *supporting documentation, and relevant correspondence with the water quality permitting agency (EPA or permitting State agency) to the NRC. Additionally, the applicant should describe any mitigation measures and state whether they will be or have been implemented."*

NRC RESPONSE:

The NRC agrees in part with the comment and disagrees in part. NRC agrees with the need to ensure consistency with the quoted language from the final rule, and the cited text in Section 4.6.3 of RG 4.2 S1, Rev. 1, has been revised to replace "heat shock" with "thermal changes" for consistency with the final rule language on this issue. However, as detailed in NRC's response to comment NEI1–7(3)–60, NRC disagrees with the comment that the rule

language as quoted in RG 4.2 S1, Rev. 1, be revised to permit that "summaries" of the requested supporting documentation can be provided by applicants, and no change was made on this point.

IDENTIFIER: NEI1–7(3)–62

COMMENT:

<u>*Ecology*</u>

For the *Impingement and Entrainment of Aquatic Organisms (Plants with Once-Through Cooling Systems or Cooling Ponds)* issue under the "Information and Analysis Content" section, recommend the following revision to clarify that the discussion is referring to the fish and shellfish population within the entire water body:

"Estimate the number of fish and shellfish lost to the water body ***(i.e., percentage loss as compared to entire population of lake, river, etc.)*** *because of impingement and entrainment…"*

NRC RESPONSE:

The NRC disagrees with the comment The NRC is requesting original impingement and entrainment loss data (e.g., counts and/or estimates) prepared for submission to EPA and/or the responsible State agency or otherwise available for assessing operational impacts on fish and shellfish at the plant in question. The NRC is not asking that new or additional data collection and analysis be performed, such as could be necessary to estimate population size in a water body in order to estimate percentage loss. No change was made to RG 4.2 S1, Rev. 1, as a result of this comment.

IDENTIFIER: NEI1–7(3)–63

COMMENT:

<u>*Ecology*</u>

For the *Thermal Impacts on Aquatic Organisms (Plants with Once-Through Cooling Systems or Cooling Ponds)* issue under the "Information and Analysis Content" section, the requirement in the second bullet to estimate, by taxa, the fish and shellfish affected by the thermal plume is speculative, particularly for pelagic species. Recommend deleting that requirement since the same information would be provided in the areal or volumetric estimate:

~~*"Estimate the number, by taxa, of fish and shellfish affected by and susceptible to the thermal effluent on a daily, monthly, and annual basis.*~~ *… Provide areal or volumetric estimates of thermally affected fish and shellfish habitat. Provide full documentation of analytical or modeling techniques to assess effects..."*

NRC RESPONSE:

The NRC disagrees with the comment The NRC considers the potential for thermal effects of

cooling water discharges, along with impingement and entrainment of aquatic biota, from once-through cooling systems to be one of the greatest concerns for aquatic resources. Therefore, it is considered important that adequate and up-to-date evaluations of the extent of thermal and biota changes in the aquatic environment be made and reviewed to evaluate the level of effects to aquatic resources as part of the license renewal environmental review. However, the NRC does not intend for an applicant to conduct either an exhaustive or overly conservative analysis for the purposes described. Rather, the NRC requests that applicants utilize the best available information on which to base its taxonomic estimates of affected fish and shellfish. The requested information will enable the NRC to meet its statutory obligations under Section 102(2) of NEPA, and specifically, to fulfill its responsibilities under 10 CFR 51.70(b) to independently evaluate and be responsible for the reliability of all information used in a SEIS and to provide evidence that the necessary environmental analyses have been conducted.

No change was made to RG 4.2 S1, Rev. 1, as a result of this comment.

IDENTIFIER: NEI1–7(3)–64

COMMENT:

Ecology

Recommend that references to *"current NPDES permit"* be changed to *"valid NPDES Permit"* to eliminate any misunderstanding that permits in the renewal process do not represent a current permit. According to 40CFR122, if a timely permit renewal application is submitted 180 days prior to expiration and the permitting agency has not re-issued the permit, then the plant continues to operate under its existing (or current) permit by law. Therefore, the plant would possess a valid NPDES permit.

NRC RESPONSE:

The NRC agrees with this comment. The NRC understands that administratively continued NPDES permits are valid for facility operations purposes. The term "current" had been used to date simply to denote the most recent discharge authorization issued to a nuclear power plant by the responsible permitting authority. However, the NRC has revised RG 4.2 S1, Rev. 1, to use the term "valid NPDES Permit," where appropriate, in response to this comment.

IDENTIFIER: NEI1–7(3)–65

COMMENT:

Ecology

For the *Thermal Impacts on Aquatic Organisms (Plants with Once-Through Cooling or Cooling Ponds)* issue under the *"Information and Analysis Content"* section, recommend the revision below to allow plants that have a valid NPDES permit or 316(a) determination with no associated mitigation measures to streamline the response associated with this issue.

"If a plant has a valid NPDES permit ***or 316(a) determination with no associated mitigation measures****,* ***then briefly summarize conditions established by the regulatory agency, the***

plant's compliance status with these conditions, *and a copy of the NPDES permit* ***or 316(a) determination****. No additional information need be provided."*

NRC RESPONSE:

The NRC agrees in substance with this comment. The text of Section 4.6.3 of RG 4.2 S1, Rev. 1, was revised in a manner similar to that suggested by the commenter, in response to other comments, and for consistency with the remainder of the subsection. In addition, clarifying text was added before the "Information and Analysis Content" subsection consistent with the structure of preceding discussions in the section. The preceding discussions already minimize the volume of supplementary information that applicants with a valid NPDES permit or 316(a) determination must submit. The revised text reads as follows:

> If a plant has a valid NPDES permit or current Section 316(a) variance determination with no associated mitigation measures, then the applicant should summarize the conditions established by the regulatory agency, the plant's compliance status with these conditions, and provide a copy of the valid NPDES permit and/or Section 316(a) variance determination. Otherwise, the information the applicant should provide for the review and analysis of the thermal impacts issue is outlined below.

IDENTIFIER: NEI1–7(3)–66

COMMENT:

Ecology

For the *Water Use Conflicts on Aquatic Resources* issue, recommend the following revision since water usage is ultimately dictated by each individual State through its water appropriations permit system and the National Pollutant Discharge Elimination System as discussed in the Draft GEIS (pages 3–52 & A–12) to be protective of the ecosystem.

"*No additional surface water conflict information is needed for (1) plants using once-through cooling systems, (2) plants not specifically using cooling towers or cooling ponds, ~~or~~ (3) plants drawing makeup water for the cooling towers or cooling ponds from a river with an annual flow greater than 3.15 × 10^{12} ft^3/year (9 × 10^{10} m^3/year),* ***or (4) plants whose water usage is ultimately dictated by each individual State through its water appropriations permitting system and/or the National Pollutant Discharge Elimination System permitting program."***

NRC RESPONSE:

The NRC disagrees with the comment. The requested information will enable the NRC to meet its statutory obligations under Section 102(2) of NEPA, and specifically, to fulfill its responsibilities under 10 CFR 51.70(b) to independently evaluate and be responsible for the reliability of all information used in a SEIS and to provide evidence that the necessary environmental analyses have been conducted. As suggested by the commenter, plant water withdrawals may well indeed be subject to State water appropriation and/or NPDES permitting requirements, which is relevant information applicants must already provide pursuant to 10 CFR 51.45(d). Regardless, the NRC must still perform an independent analysis in a plant-specific SEIS that considers an applicant's compliance with environmental quality standards and requirements as imposed by permitting and other authorities in accordance with

10 CFR 51.71(d). The NRC requests and requires the assistance of applicants in providing the necessary information in order to facilitate a more efficient license renewal environmental review process.

While the text of Section 4.6.3 of RG 4.2 S1, Rev. 1, was revised for clarity and editorial consistency with Table B–1 of the final rule and revised GEIS, the NRC has not added the phrasing concerning water appropriations and NPDES permitting. In addition, the NRC has removed the term "low flow" from this and other related issues and the associated numerical definition from the discussion of the issues. The term "low flow" was used in the 1996 GEIS to define the difference between plants located on "small" rivers versus those on "large" rivers as related to annual river flow. The NRC has subsequently determined that the use of the terms in categorizing river flow and in directing industry as to which plants require an evaluation of water use conflicts is of little value considering that only three plants still in operation would qualify as "large" river plants while all others would be "small" or low flow river plants. Further, any river, regardless of size, can experience low flow conditions of varying severity during periods of drought and as further influenced by specific conditions in the affected watershed such as the effect of upstream diversions. As such, this remains a Category 2 issue requiring a site-specific analysis.

IDENTIFIER: NEI1–7(3)–67

COMMENT:

Water Use Conflicts on Aquatic Resources

In this subsection, modify the 5th paragraph to read as follows: *"No additional surface water conflict information is needed for (1) plants using once-through cooling systems, (2) plants not ~~specifically~~* ***exclusively*** *using cooling towers or cooling ponds, or (3) plants drawing makeup water for the cooling towers or cooling ponds from a river with an annual flow greater than 3.15×10^{12} ft^3/yr (9×10^{10} m^3/yr)."*

NRC RESPONSE:

The NRC disagrees with the comment. The NRC intends for the issue to apply to plants using any combination of cooling ponds and cooling towers and other systems, so inclusion of the word suggested by the commenter would be contrary to the NRC's regulatory intent. However, the text of Section 4.6.3 of RG 4.2 S1, Rev. 1, was revised for clarity and editorial consistency with the other sections.

IDENTIFIER: NEI1–7(3)–-68

COMMENT:

Ecology

For the *"Threatened, Endangered, and Protected Species and Essential Fish Habitat"* issue, recommend that the following sentence in the "Information and Analysis Content" section for the Endangered Species Act be revised in order to be consistent with the language in 10 CFR 51.53(c)(3)(ii)(E) which specifies only *"Federal laws":*

"The ER should reference any letters and communications with Federal~~, *State, or local*~~ agencies regarding species and their critical habitat listed for protection and include copies of the communications in an appendix."

NRC RESPONSE:

The NRC disagrees with the comment. NRC's guidance does not seek to impose any additional documentation requirements on industry beyond those necessary to satisfy the scope of 10 CFR 51.53(c)(3)(ii)(E). The NRC is requesting the assistance of applicants in providing relevant documentation regarding the subject issues, especially as the U.S. Fish and Wildlife Service customarily coordinates with its State fish and wildlife agency counterparts on common issues of concern regarding threatened and endangered species and associated habitat.

No change was made to RG 4.2 S1, Rev. 1, as a result of this comment.

IDENTIFIER: NEI1–7(3)–69

COMMENT:

Ecology—Threatened, Endangered, and Protected Species and Essential Fish Habitat … Other Acts …Information and Analysis Content for Other Acts

Modify the 1st bullet in this subsection to read as follows:

*Reference any protected species that may be~~ found on or in the vicinity of the site or associated transmission line ROWs that may be~~ affected~~-~~by plant operation**s or activities associated with in-scope transmission line ROWs**.*

Consideration of transmission lines should be limited to those determined to be "in-scope" as described in the GEIS (Sec. 3.1.1; page 3-3, lines 37 to 41).

NRC RESPONSE:

The NRC disagrees with the comment. It is not possible to evaluate potential impacts on particular species or habitats *a priori* without information on species and habitats that may potentially occur on or in the immediate vicinity of the site or within the applicant's in-scope transmission line ROWs. The information requested specific to threatened, endangered, and other protected species is needed to assist the NRC in fulfilling its contingent regulatory consultation requirements under the ESA and other laws. Nevertheless, the text of Section 4.6.4 of RG 4.2 S1, Rev. 1, was revised to clarify that information need only be provided for in-scope transmission line ROWs.

The requested information will enable the NRC to meet its statutory obligations under Section 102(2) of NEPA, and specifically, to fulfill its responsibilities under 10 CFR 51.70(b) to independently evaluate and be responsible for the reliability of all information used in a SEIS and to provide evidence that the necessary environmental analyses have been conducted.

22. Historic and Cultural Resources (Section 4.7)

IDENTIFIER: NEI1–7(3)–70
COMMENT: *Historic and Cultural Resources* To be consistent with language elsewhere, reword the last sentence of the first bullet under Information and Analysis Content to: "…Such activities would include ground-disturbing activity, increases in traffic, and ~~audio~~ **noise** and visual intrusions."
NRC RESPONSE: The NRC agrees with the comment and has revised the text of Section 4.7 of RG 4.2 S1, Rev. 1, as suggested.

23. Socioeconomics (Section 4.8)

IDENTIFIER: NEI1–7(3)–71
COMMENT: *"Socioeconomics"* is a Category 1 issue that would be assessed in Chapter 5 of the ER if new and significant information existed. Therefore, it should be removed from the Environmental Consequences of the Proposed Action and Mitigating Actions section.
NRC RESPONSE: The NRC disagrees with the comment. See the response to NEI1–7(3)–1 as related to the treatment of Category 1 issues in RG 4.2 S1, Rev. 1, and the revised GEIS. The NRC is not requiring applicants to evaluate the impacts on Category 1 issues in ERs, except as is required for any new and significant information as observed by the commenter. The NRC is, however, requesting that applicants identify any such issues for each resource area in Chapter 4 of license renewal ERs, so as to be consistent with NRC's organization of the environmental impacts (consequences) chapters (Chapter 4) of the revised GEIS and plant-specific SEISs for license renewal. The NRC is merely providing clear direction to license renewal applicants in this regard, in order to help facilitate the preparation of SEISs for license renewal. No change was made to RG 4.2 S1, Rev. 1, as a result of this comment.

24. Human Health
(Section 4.9)

IDENTIFIER: NEI1–7(3)–72

COMMENT:

Human Health

Make the following editorial correction:

"*With regard to the public health effects of microbiological (thermophilic) organisms, Table B–1 states the following:*

These organisms are not expected to be a problem at most operating plants except possibly at plants using cooling ponds, lakes, or canals or ***that*** *discharge to rivers* ***with low flow****. Impacts would depend on site-specific characteristics*."

NRC RESPONSE:

The NRC agrees in part with the comment and disagrees in part. The NRC agrees with the editorial suggestion to insert the word "that" into the cited phrase in Section 4.9 of RG 4.2 S1, Rev. 1. However, the NRC has not inserted the phrase "with low flow." Any river, regardless of size, can experience low flow conditions of varying severity during periods of drought and as further influenced by specific conditions in the affected watershed such as the effect of upstream diversions. Thus, thermophilic organisms may be a concern under certain severe conditions on any river. Further, the NRC has also removed the term "low flow" from other related issues and the associated numerical definition from the discussion of the issues. The term "low flow" was used in the 1996 GEIS to define the difference between plants located on "small" rivers versus those on "large" rivers as related to annual river flow. The NRC has subsequently determined that the use of the terms in categorizing river flow and in directing industry as to which plants require an evaluation based on flow conditions is of little value considering that only three plants still in operation would qualify as "large" river plants while all others would be "small" or low flow river plants. In addition, the title of this issue in Section 4.9 of RG 4.2 S1, Rev. 1, was revised from "Microbiological organisms (public health) (plants using lakes or canals, or cooling towers, or cooling ponds that discharge to a small river)" to "Microbiological hazards to the public (plants with cooling ponds or canals or cooling towers that discharge to a river)" to improve clarity and consistency with the intended meaning of 10 CFR 51.53(c)(3)(ii)(G) as presented in the final rule.

IDENTIFIER: NEI1–7(3)–73

COMMENT:

Microbiological Hazards to the Public

Modify the 1st sentence in the 3rd paragraph in the subsection titled "Microbiological Hazards to the Public" to read as follows:

"Nuclear plants that use cooling ponds, lakes, or canals, or discharges into rivers with low flows (i.e., ~~*plants*~~***rivers*** *that have an annual average flow rate of less than* 3.15×10^{12} ft^3/yr (9×10^{10}

m^3/yr)) have a potential to enhance the concentration of thermophilic microorganisms."

The suggested change corrects an error of transcription.

NRC RESPONSE:

The referenced parenthetical sentence has been deleted in the final rule, so no changes need to be made to 4.2 S1, Rev. 1. See NRC's response to comment NEI1–7(3)–72 as related to this issue.

IDENTIFIER: NEI1–7(3)–74

COMMENT:

Human Health

For the *"Microbiological Hazards to the Public"* issue, recommend that the following language under the "Information and Analysis Content" section be revised as follows:

"If the applicant can show that the nuclear plant does not use cooling ponds, lakes, or canals, or ***does not*** *discharge~~s~~ into a rivers with low flows,* ***or that there are no public health agency concerns regarding this issue,*** *the ER should note this fact. No further information or analysis need be provided…"*

NRC RESPONSE:

The NRC disagrees with the comment. See also NRC's response to comment NEI1–7(3)–72 as related to this issue. As discussed in the revised GEIS, the magnitude of the potential public health impacts associated with thermal enhancement of thermophilic organisms could be small, moderate, or large, depending on plant-specific conditions. Thus, it remains a Category 2 issue. While no actual hazards to public health from enhancement of thermophilic microbiological organisms have been identified to date, changes in microbial populations and in the public use of water bodies might occur. Such factors cannot be assessed as part of the license renewal environmental review without current site-specific information. While, for example, the issuance of a public health advisory by a county health department would certainly be noteworthy and could comprise new and significant information, the absence of such a site-specific advisory does not mean that thermophilic organisms are not a concern.

No change was made to RG 4.2 S1, Rev. 1, as a result of this comment.

IDENTIFIER: NE1–7(3)–75

COMMENT:

Electric Shock Hazards

All documents quoted and cited in this section should be modified to limit consideration of transmission lines to those determined to be "in-scope" as described in the GEIS (Sec. 3.1.1; page 3–3, lines 37 to 41). Accordingly, Table B–1 in Appendix B to Subpart A of

10 CFR Part 51 should be modified to read as follows regarding electrical shock potential:

"Electrical shock potential is of small significance for transmission lines that are operated in adherence with the National Electrical Safety Code (NESC). Without a review of ~~each nuclear plant transmission line~~ conformance with NESC criteria ***by "in-scope" transmission lines at nuclear plants [as described in the GEIS (Sec. 3.1.1; page 3–3, lines 37 to 41)]****, it is not possible to determine the significance of the electrical shock potential."*

Similarly, 10 CFR 51.53(c)(3)(ii)(H) should be modified to read as follows ***[as described in the GEIS (Sec. 3.1.1; page 3-3, lines 37 to 41)]***

*"If the applicant's "in-scope" transmission lines ~~that were constructed for the specific purpose of connecting the plant to the transmission system~~****[as described in the GEIS (Sec. 3.1.1; page 3–3, lines 37 to 41)]*** *do not meet the recommendations of the National Electrical Safety Code for preventing electric shock from induced currents, an assessment of the impact of the proposed action on the potential shock hazard from the transmission lines must be provided."*

Also, the scope of the discussion of electric shock potential in Section 4.8.1.1 of the GEIS should be conformed to the description of "in-scope" transmission lines provided in the GEIS Section 3.1.1 (page 3–3, lines 37 to 41).

The draft Regulatory Guide, Section 4.9, should be modified in the subsection titled "Electric Shock Hazards" to clarify that applicants for license renewal need only address electric shock potential for "inscope" transmission lines (as described in the GEIS (Sec. 3.1.1; page 3–3, lines 37 to 41)). In particular, the first sentence in the subsection titled "*Information and Analysis Content"* should be modified to read as follows:

If the ***"in-scope" t****ransmission lines ~~that were built to connect the plant to the transmission system~~ meet current NESC clearance standards, the ER should demonstrate that fact.*

NRC RESPONSE:

The NRC agrees in substance with this comment to the extent that the discussion should be limited to in-scope transmission lines. The text of Section 4.9 of RG 4.2 S1, Rev. 1, and the issue finding in Table B–1 of the final rule were revised to state that the review for conformance with National Electrical Safety Code (NESC) criteria only applies to in-scope transmission lines. Table B–1 of the final rule was also revised to add a footnote for transmission line-related issues listed in the table and to define the in-scope portion of transmission lines subject to the final rule. As a result, the text of 10 CFR 51.53(c)(3)(ii)(H) was not revised to add a cross-reference to the GEIS as suggested by the commenter because the final rule is sufficiently clear in limiting the applicability of power infrastructure subject to license renewal environmental review. However, a sentence was added in the accompanying discussion in the "Electric Shock Hazards" subsection of Section 4.9 of RG 4.2 S1, Rev. 1, which notes that Sections 3.1.1 and 3.1.6.5 of the GEIS defines in-scope transmission lines that are within the scope of license renewal environmental reviews. Finally, the NRC has slightly revised Chapter 4, Section 4.9.1.1.5 of the GEIS (Electric Shock Hazards) to include a parenthetical cross-reference to Sections 3.1.1 and 3.1.6.5 of the GEIS, as suggested by the commenter.

IDENTIFIER: NEI1–7(3)–76
COMMENT: *Electric Shock Hazards* Not all states require conformance with the NESC–California, for example, requires utilities to meet General Order 95. The language in the Regulatory Guide, GEIS, and other license renewal related documents should allow for the use of other state-designated requirements, particularly in terms of modifications to meet NESC standards.
NRC RESPONSE: The NRC disagrees with the comment. Section 4.9 of RG 4.2 S1, Rev. 1, already allows for and directs applicants to identify where conformance to NESC clearance may not be appropriate to a particular plant's situation. However, the text of Section 4.9 of RG 4.2 S1, Rev. 1, under the "Information and Analysis Content" section for Electric Shock Hazards was revised to improve clarity by addition of the phrase "…(such as other governing standards)…."

25. Environmental Justice (Section 4.10)

IDENTIFIER: NEI1–7(3)–77

COMMENT:

Environmental Justice

For the Environmental Justice issue under *"Information and Analysis Content"* section, recommend the following changes since: (1) the plant may not be aware of concerns associated with continued plant operations until public meetings, and (2) records associated with subsistence consumption are not always documented by outside agencies (i.e., USFWS).

"*Based on information about minority and low-income populations and communities residing in the immediate vicinity of the plant site presented in Chapter 3 of this regulatory guide, identify potential impacts ~~and any concerns these~~* ***to*** *populations and communities ~~may~~* ***from*** *~~have about the~~ continued operation of the nuclear plant. Also discuss the potential for disproportionately high and adverse human health and environmental impacts.*

If information is available, d*escribe any observed subsistence consumption behavior patterns—specifically fish and wildlife consumption—by minority and low-income populations in the vicinity of the plant (see Section 4–4 of the Executive Order 12898). This subsistence consumption behavior could consist of hunting, fishing, and trapping of game animals and any other general food gathering activities (e.g., collecting nuts, berries, and other plant material) conducted by minority and low-income individuals in the vicinity of the plant*."

NRC RESPONSE:

The NRC disagrees in part with this comment. The information requested is needed to assist the NRC in meeting its statutory obligations under Section 102(2) of NEPA and in fulfilling its contingent policy review and consultation requirements under Executive Order 12898, "Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations." In 2004, the Commission issued its Policy Statement on the Treatment of Environmental Justice Matters in NRC Regulatory and Licensing Actions (69 FR 52040), which committed the NRC to the general goals of EO 12898 in part through application of its NEPA review process. NRC's internal procedures and the CEQ's 1997 guidance to Federal agencies, "Environmental Justice: Guidance Under the National Environmental Policy Act," directs agencies to seek meaningful input from low-income populations, minority populations, or American Indian tribes as to the scope of the NEPA analysis. In this regard, the NRC asks the assistance of applicants in identifying concerns, as they are likely to be the most knowledgeable of any concerns raised by minority and low-income populations and communities residing in the immediate vicinity of the plant (such as issues or concerns communicated through the plant's public affairs and/or environmental management departments or through local citizen advisory groups). Providing the information requested by RG 4.2 S1, Rev. 1, will facilitate a more efficient license renewal environmental review process. However, as also suggested by the commenter, the information discussion in Section 4.10 of RG 4.2 S1, Rev. 1, was revised to note that information on subsistence consumption patterns need only be provided to the extent that information is available to the applicant.

IDENTIFIER: NEI1–7(3)–78
COMMENT: *Environmental Justice … Minority and Low-Income Populations* In the 7th paragraph of the subsection titled "Minority and Low-Income Populations," the NRC's Office of Nuclear Reactor Regulation (NRR) Office Instruction, LIC-203, Revision 2, is cited. This document could not be found on the NRC Web site or in the ADAMS system. Industry requests that NRC make the cited guidance document publicly available. There is a Revision 1 to this document available.
NRC RESPONSE: NRC agrees with the comment. NRR Office Instruction LIC-203, Revision 2, "Procedural Guidance for Preparing Environmental Assessments and Considering Environmental Issues" was not available for public review when DG-4015 (draft RG 4.2 S1, Rev 1) was issued for public comment in July 2009. NRR Office Instructions are internal documents that define NRR administrative or business processes. Since LIC-203 only applies to NRC staff, reference to it was removed from RG 4.2 S1, Rev 1.

26. Cumulative Impacts (Section 4.11)

IDENTIFIER: NEI1–7(3)–79; OBIL–Entergy–4

COMMENT:

Two industry commenters expressed concern about the need to analyze cumulative impacts consistent with NEPA guidance. The primary comment is set forth below.

<u>*Cumulative Impacts*</u>

The 3rd paragraph of Section 4.11 states the following:

"Cumulative impact is a Category 2 issue and requires a plant-specific analysis. The CEQ defines cumulative impact in 40 CFR 1508.7. Cumulative impact analyses should consider new and continuing activities, such as license renewal, that are conducted, regulated, or approved by a Federal agency. The cumulative impacts analysis takes into account all actions, however minor, since impacts from individual minor actions may be significant when considered collectively over time. The goal of the analysis is to identify potentially significant impacts to improve decisions and move toward more sustainable development."

Applicants for nuclear plant license renewal should not be expected to analyze cumulative impacts in a manner consistent with the NEPA compliance guidance for Federal agencies published by the Council on Environmental Quality (CEQ). Applicants can assist the NRC in identifying past, present, and reasonably foreseeable future actions that may contribute to cumulative environmental effects in the vicinities of nuclear plants. However, regarding actions over which they have no control, applicants are not in the same position as the NRC for obtaining the information needed for an evaluation of cumulative impacts. This is especially true with respect to information about future actions that the applicant is not involved in when such information may not yet be available to the public. Accordingly, industry suggests that NRC limit the scope of cumulative impacts analyses required in a License Renewal ER to past, present and reasonably foreseeable future actions initiated and controlled by the applicant. If applicants were required to analyze the cumulative impacts of actions outside their control, the resulting analyses would be largely speculative.

NRC RESPONSE:

The NRC agrees in substance with this comment to the extent that applicants have a role in assisting NRC in identifying actions that may contribute to cumulative effects. The NRC disagrees that the scope of an applicant's plant-specific cumulative impacts assessment should be limited to actions initiated and controlled by the applicant. The NRC does not seek to impose an unwarranted burden on applicants and does not intend that applicants' cumulative impacts analyses be exhaustive and/or that they cover speculative actions of which the applicant could not be expected to have knowledge or insight; neither does the NRC expect that applicants include projects in the early planning stages nor projects that are not in the public domain. Nevertheless, the NRC requests and requires the assistance of applicants in identifying projects and proposals that could contribute to cumulative impacts, as they are the most knowledgeable of past, present, and future activities occurring in or proposed for areas in the immediate vicinity of their plants, regardless of what entity or person has undertaken or proposes such actions. In particular, applicants are uniquely positioned to assist the NRC with identifying reasonably foreseeable future actions as defined in RG 4.2 S1, Rev. 1, to the extent applicants are aware of

such proposals and/or information is available and obtainable with reasonable effort. NRC's guidance contained in RG 4.2 S1, Rev. 1, is intended to provide clear direction to applicants in limiting the scope of the cumulative impacts analysis based on information availability, geographic scope, timing, and whether an additive cumulative effect is likely to occur. The text of Section 4.12 of RG 4.2 S1, Rev. 1, was revised to improve clarity with regard to the scope of the requested cumulative impacts analysis.

IDENTIFIER: NEI1–7(3)–80

COMMENT:

Cumulative Impacts

NRC needs to reconcile the reference to Table 4.12-1 of the GEIS since there is no such table in the current or revised GEIS.

NRC RESPONSE:

The NRC agrees with the comment, and the text of Section 4.12 of RG 4.2 S1, Rev. 1, was revised to replace the reference to "Table 4.12–1" with "Section 4.13" in order to provide the correct section cross-reference to the cumulative impacts discussion in the revised GEIS.

IDENTIFIER: NEI1–7(3)–81

COMMENT:

Cumulative Impacts

Based on Section 4.8.6 of the Oyster Creek Supplemental Environmental Impact Statement (Supplement 28), NRC concluded that overall cumulative impacts ranged from SMALL to MODERATE. MODERATE is defined in 10 CFR 51 as effects that are sufficient to alter noticeably, but not to destabilize, important attributes of the resource. Therefore, the following sentence should be revised since Oyster Creek's overall cumulative impacts did not rise to the level of "significant".

"…*Several recent environmental analyses for license renewal applications have found that overall cumulative impacts in the region of influence of the power plant were significant (e.g., ~~the Oyster Creek plant in New Jersey and~~ the Susquehanna plant in Pennsylvania)*."

NRC RESPONSE:

The NRC agrees with the comment, and the text of Section 4.12 of RG 4.2 S1, Rev. 1, was revised in part to delete the word "significant" in the sentence and to clarify that cumulative impacts on aquatic resources at the Oyster Creek plant were found by the NRC to range from small to moderate.

27. Uranium Fuel Cycle (Section 4.13)

IDENTIFIER: NEI1–7(3)–82
COMMENT: *"Uranium Fuel Cycle"* is a Category 1 issue that would be assessed in Chapter 5 of the ER if new and significant information existed. Therefore, it should be removed from the Environmental Consequences of the Proposed Action and Mitigating Actions section.
NRC RESPONSE: The NRC disagrees with the comment. See NRC's response to NEI1–7(3)–1as related to the treatment of Category 1 issues in RG 4.2 S1, Rev. 1. The NRC is not requiring applicants to evaluate the impacts on Category 1 issues in ERs, except as is required for any new and significant information as observed by the commenter. The NRC is, however, requesting that applicants identify any such issues for each resource area in Chapter 4 of license renewal ERs so as to be consistent with NRC's organization of the environmental impacts (consequences) chapters (Chapter 4) of the revised GEIS and plant-specific SEISs for license renewal. The NRC is merely providing clear direction to license renewal applicants in this regard in order to help facilitate the preparation of SEISs for license renewal. No change was made to RG 4.2 S1, Rev. 1, as a result of this comment.

28. Assessment of New and Significant Information (Chapter 5)

IDENTIFIER: NEI1–7(3)–83

COMMENT:

Assessment of New and Significant Information

For the *Assessment of New and Significant Information* issue, make the following change since an issue could be considered "new" but not "significant."

"*For each impact* ***associated with an issue determined to be significant,*** *describe mitigation measures that were considered and those that could be implemented."*

NRC RESPONSE:

The NRC disagrees with the comment. The NRC intends that identified issues be included only if they are "new" and "significant" within the context of the definition provided in Section A.2 of RG 4.2 S1, Rev. 1, which has been revised to provide additional guidance to applicants. For clarity, this is separate from the determination that the NRC must make as to the significance of environmental impacts under NEPA and NRC's regulations for implementing NEPA. In order to meet the requirements of 10 CFR 51.53(c)(3)(iii), the applicant's ER must consider alternatives for reducing adverse impacts for all Category 2 issues and specifically, include an analysis that considers alternatives available for reducing or avoiding adverse environmental effects (i.e., mitigation). Section A.2 of RG 4.2 S1, Rev. 1, provides additional guidance to applicants in this regard. This analysis is already being requested of license renewal applicants. For new and significant information, the NRC requests assistance from applicants in identifying potential mitigation measures to enable the NRC to make a determination as to the intensity (i.e., small, medium, and large) of any new impact. This analysis is essential to the NRC's assessment as to significance (as used in NEPA) and whether the new and significant information provides a seriously different picture of the environmental impacts of the proposed action than previously considered, such as an environmental impact finding different from that codified in Table B-1. This will enable the NRC to meet its statutory obligations under Section 102(2) of NEPA, and specifically, to fulfill its responsibilities under 10 CFR 51.70(b) to independently evaluate and be responsible for the reliability of all information used in a SEIS and to provide evidence that the necessary environmental analyses have been conducted. No change was made to RG 4.2 S1, Rev. 1, as a result of this comment, except that a cross-reference to Section A.2 of the guide has been added to Chapter 5 of RG 4.2 S1, Rev. 1.

29. Mitigation
(Section 6.2)

IDENTIFIER: NEI1–7(3)–84
COMMENT: *Mitigation* The text of Section 6.2, "Mitigation," reads as follows: *This section should summarize in tabular form any mitigation measures considered for implementation in this ER.* It is unclear why Section 6.2 needs to include mitigation measures that were considered but rejected in Chapter 4. Consider modifying Section 6.2 to read as follows: *"This section should summarize in tabular form any mitigation measures ~~considered for implementation~~**identified** in this ER **that the applicant commits to implement**."*
NRC RESPONSE: The NRC disagrees with the comment. In order to meet the requirements of 10 CFR 51.53(c)(3)(iii), the applicant's ER must consider alternatives for reducing adverse impacts for all Category 2 issues and specifically, include an analysis that considers alternatives available for reducing or avoiding adverse environmental effects (i.e., mitigation). This analysis is already being requested of license renewal applicants. Section A.2 of RG 4.2 S1, Rev. 1, provides additional guidance to applicants in this regard. The NRC requests that applicants provide a single summary of all relevant and reasonable mitigation measures that could reduce or avoid adverse effects, regardless of the applicant's intention to implement them. No change was made to RG 4.2 S1, Rev. 1, as a result of this comment.

30. Alternatives for Reducing Adverse Impacts (Section 7.2)

IDENTIFIER: NEI1–7(3)–85; RMD–NEI2–4; OBIL–Entergy–5

COMMENT:

Three industry commenters raised similar issues related to alternatives for reducing impacts. The primary comment is set forth below.

Alternatives for Reducing Adverse Impacts

Section 7.2 is redundant to discussions throughout Section 4 "*Environmental Consequences of the Proposed Action and Mitigating Actions"* of the ER and Section 6.2 of Regulatory Guide DG-4015 (RG 4.2 S1, Rev. 1) and should be deleted in its entirety since applicants are already required to consider mitigation alternatives in Section 4 and summarized in Section 6.2 such as cooling or intake modifications for reducing adverse impacts for all Category 2 license renewal issues.

NRC RESPONSE:

The NRC disagrees with the comment. As indicated in NRC's response to comment NEI1–7(3)–84, Section 6.2 of RG 4.2 S1, Rev. 1, requests that applicants provide a standalone summary of mitigation measures for license renewal-related environmental impacts under the proposed action, which are to be assessed by the applicant in accordance with Chapter 4 of RG 4.2 S1, Rev. 1. In comparison to Chapter 4, which provides guidance on evaluating impacts of the proposed action and mitigations, Chapter 7 directs applicants to assess the impacts of alternatives to the proposed action beginning with Section 7.1, which addresses replacement power alternatives such as coal-fired generation. Section 7.2 requests that applicants evaluate any other alternatives that could be implemented as a whole to reduce environmental impacts associated with implementation of the proposed action. This section specifically asks for a comparative analysis of the potential impact of such alternatives across all affected environmental resources, in a similar fashion to that performed for the proposed action. No change was made to RG 4.2 S1, Rev. 1, as a result of this comment.

31. Energy Alternatives and No-Action Alternative (Sections 7.1 and 7.3)

IDENTIFIER: NEI1–7(3)–86
COMMENT: *Energy Alternatives and No-Action Alternative* These sections should also reference the discussion of alternative generating sources in Section 2, “Proposed Action and Description of Alternatives.”
NRC RESPONSE: The NRC agrees with the comment, and the text of Sections 7.1, 7.2, and 7.3 of RG 4.2 S1, Rev. 1, was revised to provide cross-references to Section 2.6 of the Guide.