

## **NRC STAFF RESPONSES TO COMMENTS OF THE NUCLEAR ENERGY INSTITUTE (NEI) ON DRAFT RS-002, "PROCESSING APPLICATIONS FOR EARLY SITE PERMITS"**

NOTE: This document reproduces the Nuclear Energy Institute (NEI) comments provided by letter dated March 31, 2003, verbatim. The staff's response follows each NEI comment. Many of the NEI comments refer to "SRP" sections, although the comments in fact refer to sections of draft RS-002, "Processing Applications for Early Site Permits," which is a review standard and not a standard review plan (SRP). All section numbers in the U.S. Nuclear Regulatory Commission (NRC) responses herein refer to sections in RS-002 unless otherwise specified.

### **A. Section 1.0**

1. No Comments

### **B. Section 2.0**

1. The characterization of the ESP as a "partial construction permit" suggests a much broader meaning than is intended by references to an ESP as a partial CP or CP in Sections 52.21 and 52.37. We recommend that the guidance be modified to reflect that not all requirements in Part 50 applicable to construction permits are applicable to early site permits; *i.e.*, that generally the requirements in Part 50 related to the site parameters would be applicable, while most (if not all) of the design-related requirements would not be applicable.

*Staff response: The staff believes that the statements made regarding "partial construction permit" in the section referenced in the comment are consistent with Title 10, Part 52 of the Code of Federal Regulations (10 CFR Part 52). The staff will, however, modify the section to eliminate the reference to "partial construction permit" because this reference is not necessary for the discussion in the text. The staff believes that a general statement regarding applicability of 10 CFR Part 50 as recommended in the comment could be misinterpreted and is not necessary. Applicability of specific requirements of 10 CFR Part 50 is discussed in RS-002.*

2. The statement in the first paragraph "obviating the need for extensive review ..." suggests that at COL there will likely be some siting issues addressed. This may not be accurate, especially for an ESP based on a specific design. In those instances, all siting issues may have been resolved at the ESP stage.

*Staff response: The staff will modify the RS-002 text referenced in the comment to more clearly be consistent with the finality provisions of 10 CFR 52.39.*

### **C. Section 3.0**

1. No Comments

**D. Section 4.0**

1. §4.1(2)(e) - States the PM will develop a review schedule and provide it to the involved technical branches and the other involved NRC staff. Section 4.1(2)(e) should be modified to reflect that the applicant should also be provided a copy of the schedule.

*Staff response: The staff will modify the text in RS-002 to indicate that the project manager should inform the applicant of the staff's major review milestones and progress toward those milestones. The staff will not necessarily provide detailed schedules developed for internal staff use to the applicant.*

2. §4.1(2)(h) – NEI considers all correspondence issued by the NRC to the NEI ESP Task Force's generic items to be sufficient "precedent" that should be made available to and considered by the appropriate technical branches involved in the ESP review.

*Staff response: In developing the final RS-002, the staff will appropriately consider the letters issued by the NRC as noted in the comment. Some or all of these letters may be referenced in RS-002. The existing text referenced in the comment refers to licensing precedent, which letters cannot provide.*

3. §4.4(2) Fn. 2 – The second footnote to this section addresses the PPE concept stating: "Should the NRC determine this approach is acceptable, guidance to the staff on review of an application that includes a PPE will be provided in the final version of this document." The final version of the Review Standard should reflect the endorsement of the PPE approach at least to the extent documented in the NRC's correspondence to NEI dated February 5, 2003 (ESP-6). At least two applications will be well into review by the time the final version is issued, and both will be utilizing the PPE approach. Thus, some internal guidance to the staff reviewers is needed at the time of the first application submittal, i.e., June 2003.

*Staff response: The staff plans to discuss and allow for the plant parameter envelope (PPE) approach in the final RS-002, consistent with the staff's letter to NEI dated February 5, 2003. Recognizing that early site permit (ESP) applications will be received before the final RS-002 is issued, the staff plans to issue guidance to staff reviewers of the ESP applications to address the PPE concept, as well as a number of other areas that warrant additional guidance beyond that available to the staff in the draft RS-002 dated December 23, 2002.*

4. §4.6 - Indicates IMC 2501 provides guidance for inspections at the ESP stage. Comments on IMC 2501 have been separately provided. NEI hereby incorporates by reference its comments on IMC 2501 (attached) provided to NRC on February 21 for discussion at our March 5 public meeting and requests that these comments be addressed as part of this review.

*Staff response: In revising IMC 2501, the staff has considered NEI's comments on that document as appropriate. The staff will not specifically address comments on that document as*

part of its consideration of comments on the draft RS-002. However, the staff will review NEI's comments on IMC-2501 for potential applicability to RS-002.

**E. Attachment 1 (ESP Review Process figure)**

1. No comments

**F. Attachment 2 (Scope and Associated Review Criteria for the Site Safety Assessment)**

1. SRP §2.3.5 is modified by Note 2 stating: "Calculations for specific receptor locations such as the limiting residence, cow, garden, etc., will be evaluated at the COL stage." Applicants may be able to provide bounding evaluations of these receptor locations for review. Note 2 should be modified to state that to the extent such bounding evaluations are provided in ESP applications, this issue should be resolved at ESP subject only to confirmation at COL that the actual locations are within these bounding evaluations.

*Staff response: The staff will modify the text in Note 2 (which will be moved to guidance section 2.3.5) to state that, to the extent such bounding evaluations are provided in ESP applications, this issue should be resolved at the ESP stage subject to confirmation at the combined license (COL) stage that the actual receptor locations are in fact bounded by those determined in the ESP bounding evaluations. The staff will also note that this resolution would be subject to confirmation, at the COL stage, that the calculational methodology used for this confirmation is consistent with that employed at the ESP stage. For ESP applications that do not provide a full evaluation of atmospheric transport and diffusion of routine releases, those portions not addressed at the ESP stage will be evaluated at the COL stage.*

2. SRP §2.5.2 is modified by a comment identifying additional applicable guidance as "Regulatory Guide 1.165." Since this RG is already referenced in SRP §2.5.2, it should not be considered "additional guidance."

*Staff response: The comment is correct, and the staff will delete the reference in the "Scope and Associated Review Criteria" table at the beginning of Attachment 2 to Regulatory Guide 1.165.*

3. SRP §2.5.4 is modified by a comment identifying additional applicable guidance as "Draft Regulatory Guides DG-1101, DG-1105, and DG-1109." These draft guides should not be identified as additional applicable guidance until they have completed the appropriate public input process. Further, when these are approved as acceptable guidance, they should be included in more than just SRP 2.5.4. DG-1101 may also be appropriate for 2.5.1, 2.5.2, 2.5.3, and 2.5.5. DG-1105 may also be appropriate for 2.5.1, 2.5.2, and 2.5.5. DG-1109 may also be appropriate for 2.5.2 and 2.5.5.

*Staff response: The staff has determined that draft regulatory guides or other draft documents may be cited as guidance sources as long as they are available to the public. The draft Regulatory Guides cited in the comment are applicable and will be retained in Section 2.5.4. The staff will evaluate these documents as possible reference sources for Sections 2.5.1, 2.5.2, 2.5.3, and 2.5.5.*

4. SRP §13.3 is modified by a comment identifying additional applicable guidance including “NUREG-0737 Supp. 1, Regulatory Issue Summary 2001-16, NUMARC/NESP-007 Rev 2, and NUREG/CR-4831.” These documents should be discussed, as applicable to an ESP, in the newly drafted SRP. The relevant guidance should be discussed in both the Acceptance Criteria and the Evaluation Findings sections.

*Staff response: The staff will remove all references shown as applicable to Section 13.3 in the Comment/Additional Guidance column of the table at the beginning of Attachment 2. The documents referenced in NEI's comment are not directly related to evaluation of emergency planning (EP) information in ESP applications. While these documents deal with EP issues, they are only remotely related to EP information that would be included in ESP applications; and it is not necessary to identify them in RS-002. The other documents currently shown in the table as applicable to Section 13.3 are already referenced in Section 13.3, so they need not be cited in the table.*

5. SRP §13.6 is modified by Note 5 stating: “The Commission is considering whether security requirements should be revised for its various types of licensees. The NRC staff will develop guidance for this subject with regard to ESPs in the future.” The applicants need some guidance now as to what is expected to address §100.21(f). At the moment, there appears to be only a need for a statement that site characteristics are such that adequate security plans and measures can be developed (to address §100.21(f)).

*Staff response: The staff issued letters dated May 6, 2003 to all three prospective ESP applicants to provide them guidance on meeting 10 CFR 100.21(f). The staff recognizes the need to provide guidance for future, as yet unidentified, ESP applicants and will determine and implement an appropriate method for doing so.*

6. SRP §15.0 is modified by Note 3 stating: “Applicable sections of Chapter 15 of NUREG-0800 will be the subject of major revision in the future. Because of the significance of the revision, a markup of the section is not provided in this version of the Early Site Permit Review Standard, but guidance is expected to appear in the final version.” The final version will be too late. At least two applications will be well into review by the time the final version is issued, and the applicants need to know now what Evaluation Findings will need to be made. The ESP pilot applicants must be advised promptly regarding those section(s) of Chapter 15 the Staff considers applicable. NEI’s correspondence to the NRC for generic item ESP-7, and its attachment, is hereby incorporated by reference for consideration in the revision of these sections of the review standard.

*Staff response: On April 11, 2003, the staff issued, for interim use and public comment, draft Section 15.0, “Radiological Consequences of Design Basis Accidents,” of RS-002. This section contains guidance on accident analysis for ESP applications. This guidance (subject to revision if deemed appropriate as a result of public comments) will be included in the final version of RS-002. Prospective ESP applicants can use the draft guidance. The staff considered, in its development of the draft guidance, NEI correspondence dated December 20, 2002 on generic item ESP-7 and its attachment, as well as the staff’s response to that correspondence. The*

staff will consider the additional NEI correspondence on this generic item dated April 10, 2003 in development of the final RS-002.

7. Note 6 suggests that, if the proposed ESP site is adjacent to or near an existing operating reactor or materials facility, some unidentified information is expected in the applicant's SSAR. If this is correct, an SRP section should be provided now to identify the expected information. If this is not correct, then no discussion is needed in Attachment 2. Attachment 3 adequately addresses Section 4.5 of NUREG-1555.

*Staff response: The site safety assessment does not require discussion of responsibilities related to radiation protection/dosimetry/site monitoring as they pertain to an ESP site. Note 6 was intended to provide a cross-reference to the location of such information in the environmental impact statement (EIS). Because Note 6 is not necessary and appears to be confusing to users, the staff will remove it from Attachment 2.*

8. Note 6 – It is not clear why there are separate discussions for when the ESP applicant and the other facility licensee are and are not the same. There really is no difference. The licensee is responsible for any dose due to the licensed radiation sources and compliance with Part 20. The separation of the discussions is unnecessary and if the note is retained, the discussions should be simplified. This note is also included in Attachment 3.

*Staff response: The staff will delete Note 6 to Attachment 2 as discussed in response to comment F.7.*

9. Note 7 suggests that the staff is expecting to get quality assurance information for review as part of the ESP application. As acknowledged by the NRC in its February 3 letter to NEI on ESP-3, Part 52 does not require QA programs to be described in ESP applications. Further, only a small subset of SRP sections discuss quality controls, e.g., see SRP 2.4.12, 2.5.4.5, 2.5.4.12, and 2.5.5.4, and the NRC staff has indicated it does not expect a quality assurance program description. Thus, if additional information is needed with regard to the quality controls related to information in other specific sections related to site characteristics, the specific information needed should be identified in the related SRP section, not in a generic Chapter 17 program description-type SRP.

*Staff response: On April 11, 2003, the staff issued, for interim use and public comment, a new section 17.1.1 of draft RS-002. This section provides guidance on the staff's expectations for implementation of quality assurance (QA) controls in support of an ESP application. As a result of the inclusion of this new section, Note 7 is no longer needed, and the staff will delete it from Attachment 2.*

*The staff believes that a separate review standard section for quality assurance is needed. The staff, in reviewing the ESP applications, needs review guidance on how QA is to be addressed. The guidance in the draft Section 17.1.1 is consistent with the staff's letter to NEI dated February 3, 2003, regarding QA, which notes that ESP applicants are not required to submit QA program descriptions with their applications. However, the staff will revise Section 17.1.1 to clearly state this fact.*

*The staff must have reasonable assurance at the ESP stage of the reliability and integrity of data that would affect the design or operation of future safety-related structures, systems, and components (SSCs). The staff will use Section 17.1.1 of draft RS-002 as guidance to examine the adequacy of the applicant's QA measures. The staff will then evaluate any weaknesses identified for their effect on the integrity and reliability of data supporting the ESP application.*

10. SRP 14.3.1 is not identified as applicable to ESPs. However, the 1996 draft revision of the SRP identifies it as applicable. Was this a deliberate omission, i.e., please confirm that SRP 14.3.1 will not be used to review ESP applications?

*Staff response: The staff confirms that Section 14.3.1 is not applicable to the ESP review. Although the section makes reference to the ESP, the criteria and guidance in the section focus on site information used in support of design certification and COL.*

**G. Attachment 3 (Scope and Associated Review Criteria for Environmental Report)**

Note 1, p. 12 – See comment F.7, above.

*Staff response: The staff will clarify Note 1 to Attachment 3. The licensee of the existing facility is responsible for ensuring that the radiation dose to members of the public from licensed radiation sources is within the applicable requirements of 10 CFR Parts 19 and 20 in all cases. However, if the ESP applicant and the existing facility licensee are not the same, the ESP applicant must provide the impact analysis with respect to the construction worker doses as discussed in Section 4.5 (Radiation Exposure to Construction Workers) of NUREG-1555.*

**H. Attachment 4 (SER Template for ESP Applications)**

1. See comment D.3, above.

*Staff response: As noted in the staff's response to NEI's comment D.3, the staff plans to discuss and allow for the PPE approach in the final ESP review standard, consistent with the staff's letter to NEI dated February 5, 2003. The safety evaluation report (SER) template will address the possibility of an applicant using the PPE approach.*

2. Page 1 of Attachment 4 includes Section 1.1, Introduction. This section of the draft SER should also have a paragraph to identify the Redress Plan review [if applicable]. This may be appropriate in the paragraph identifying the Environmental Report (if it is to be discussed in the Environmental Impact Statement).

*Staff response: As noted in 10 CFR 52.25(a), the staff's review of the site redress plan will be addressed in the EIS. The staff agrees that it is appropriate to refer to the site redress plan (if submitted) in the SER, consistent with referring to the environmental report (ER) in the SER. The staff will provide language on this subject in Attachment 4 to RS-002.*

*The staff notes that an ESP applicant must have the appropriate water-related permits if the applicant should wish to perform activities allowed under 10 CFR 50.10(e)(1). The NRC relies on these permits to ensure that the water resource is managed appropriately. Specifically, in*

*the case of discharges to navigable waters, the NRC defers to the authority granted to the U.S. Environmental Protection Agency and the States in the Clean Water Act.*

3. Other General Comments

- a. The NRC should consider adding an EIS template as an attachment.

*Staff response: The NRC is currently developing a template for an EIS that addresses the environmental impacts of constructing and operating a nuclear plant on a site referenced in an ESP application.*

- b. The NRC should consider adding an ESP permit template as an attachment.

*Staff response: The ESP Review Standard is analogous to SRPs such as NUREG-0800 or NUREG-1555. SRPs do not include the form and content of an ESP or an ESP permit template because the permit or license is the result of the SRP reviews and a decision by the Commission as to what limits and conditions apply to the document. Further, the form and content of an ESP would depend on application-specific considerations (e.g., whether a PPE approach is used or not). After receipt and evaluation of the pilot ESP applications, the staff will consider development of a form and content document for ESPs similar to that provided in SECY-00-0092 for a combined license.*

**I. Comments on NUREG-0800 Standard Review Plan (“SRP”) Annotations**

1. SRP General - When considering appropriate review and acceptance criteria (as identified in the SRPs) for an ESP, it is important to acknowledge the purpose of an ESP and its associated findings. The ESP safety finding addresses the requirement that the site characteristics have been appropriately identified. There is no finding related to the acceptability of the design of structures, systems, and components (SSCs). Thus, any review or acceptance criteria based on review of SSCs is not pertinent since the SSC design is not approved via an ESP. Acceptance criteria for design reviews will be evaluated as appropriate under Part 52, Subpart B or Subpart C.

*Staff response: The staff considers part of the comment to be an inaccurate generalization. The regulations at 10 CFR 52.17(a)(1) require that, “The assessment must contain an analysis and evaluation of the major systems, structures, and components of the facility that bear significantly on the acceptability of the site under the radiological consequence evaluation factors identified in §50.34(a)(1) of this chapter.” Therefore, the staff does not plan to change RS-002 to address this comment.*

2. SRP General – Several of the SRPs contain items that indicate that they are to be reviewed at the COL stage. Examples include SRPs 2.1.2, 2.2.1, 2.2.3, 2.3.4, 2.3.5, 2.4.1, 2.4.2, 2.4.4, 2.4.5, 2.4.6, 2.4.7, 2.4.9, 2.4.11, 2.4.12, 2.5.1, 2.5.2, 2.5.4, 2.5.5, and 3.5.1.6. The staff should ensure that complete SRP type guidance is developed for the COL stage

*Staff response: The staff is considering appropriate guidance for the COL stage.*

3. SRP General - The SRPs should be revised to include guidance for “review” of previously approved information relative to a site with a previously considered facility. The SRP should include consideration of the resolution of Early Site Permit Task Force Issue ESP-20, Practical Use of Existing Site/Facility Information.

*Staff response: The staff will incorporate guidance or a reference in an appropriate location of RS-002 to address the staff's position on ESP Task Force Issue ESP-20.*

4. SRP General - The SRPs should be revised to reflect resolution of Early Site Permit Task Force Issue ESP-11, Criteria for determining ESP Duration (10-20 years).

*Staff response: The staff will incorporate guidance or a reference in an appropriate location of RS-002 to address the staff's position on ESP Task Force Issue ESP-11.*

5. SRP General - The phrase “a nuclear power plant or plants ‘of specified type’ that might be constructed on the proposed site” is used in various locations in the SRP section markups provided. The words “of specified type” are unnecessary and do not account for PPE-based ESP applications. To provide for review of ESP applications that either use of the PPE approach or provide specific design information, we recommend eliminating the words “of specific type” wherever this phrase is used.

*Staff response: The phrase referenced in the comment responds to the regulations at 10 CFR 52.17(a)(1)(i), which state that the application should specify the number, type, and thermal power level of the facilities for which the site may be used. To address the PPE approach, while retaining the item from the regulations, the staff will modify the phrase to read as follows: “a nuclear power plant or plants of specified type (or as defined by a PPE)... .”*

6. SRP General – Review Standard guidance is needed relative to determining the “anticipated maximum levels of radiological and thermal effluents each facility will produce” [as set forth in 52.17(a)(1)(iv)] during normal operation of a plant or plants to be located at the ESP site and demonstrating compliance with 10CFR20, 10CFR50, Appendix I, and 40CFR190 for the SSAR portion of the ESP Application.

*Staff response: Adequate evaluations of maximum radiological and thermal effluents performed in the ER will support compliance with 10 CFR 52.17(a)(1)(iv), so the site safety assessment does not require a separate discussion on these subjects. Guidance on calculating effluents is available from NUREG-1555 and its references.*

7. SRP 2.1.1, Section I, Areas of Review, indicates the “location, distance, and orientation of structures... with respect to highways, railroads, and waterways which traverse or lie adjacent to the exclusion area are reviewed...” and Section III, Review Procedures, indicates the reviewer should check the layout and orientation of structures. This section will require additional guidance to address applications based on a plant parameter envelope since details of location, distance and orientation may not yet be decided.



*Staff response: The staff will revise Section 2.1.1 by deleting “orientation of structures...” in two separate sentences in Section I, Areas of Review, leaving the sentences to read, “The location of a nuclear power plant...” and, “The location and distance of a nuclear power plant... .” The staff will replace “...the orientation of plant structures...” with “...the plant location...”, in the fourth paragraph of Section III, Review Procedure (page 2.1.1-3). The section will state that applicants may choose to provide orientation of structures if such information is available.*

8. SRP §2.1.1 – Given current heightened security practices, we recommend that the UTM coordinates and the latitude and longitude information not be provided in the ESP document.

*Staff response: The staff requires the information noted in the comment for its review, so the question is whether the information should be protected from public release. Currently, the latitude and longitude information for every domestic nuclear power plant and spent fuel facility is listed in the U.S. Air Force Area Planning Guide. This information is used by military pilots to identify and locate these facilities in their flight plans. Use of plant position information is intended to minimize the likelihood of potential hazards that may be created by flying too close to the facilities. Elimination of this information would not prevent an independent determination of the coordinates from publicly available sources, such as U.S. Geological Survey topological maps, as well as through observation and the use of global positioning devices. Therefore, the staff sees no compelling reason to exclude this information from the ESP application, and the staff does not plan a change to RS-002 to address this comment.*

9. SRP §2.1.1 does not include the Part 20 references for the Acceptance Criteria that were added in the 1996 draft revision (see quoted material below). Thus, it is not clear that Part 20 will be an acceptance criterion for the information in SAR §2.1.1. The review standard should be revised to include this Part 20 acceptance criterion.

*The acceptance criteria for site location and description are based on meeting the relevant requirements of the following sections of Title 10 CFR: Part 20, "Standards for Protection Against Radiation," Subpart D, "Radiation Dose Limits for Individual Members of the Public;" Part 100, "Reactor Site Criteria;" and, Part 50, "Domestic Licensing of Production and Utilization Facilities," §50.34, "Contents of Applications, Technical Information." The relevant requirements of these regulations are:*

*10 CFR 20.1301 effectively places limits on the annual average releases in gaseous and liquid effluents at the boundary of the restricted area by placing limits on the exposure an individual would receive if continually present at the boundary of the restricted area. (10 CFR 20.1003 defines restricted area.)*

*Staff response: Section 2.1.1 provides guidance to address the consequences in the unlikely event of a serious release of radioactive material as a result of a potential nuclear power plant accident. Therefore, this section refers to 10 CFR Part 100, Subpart B, and 10 CFR 50.17.*

*Reference to 10 CFR Part 20 in Section 2.1.1 would be inappropriate because it addresses normal, not accident, releases.*

*Part 20 is referenced in the acceptance criteria in NUREG-1555, "Environmental Standard Review Plan," Section 5.4.2, "Radiation Doses to Members of the Public," and in Section 5.4.3, "Impacts to Members of the Public." These sections provide the guidance to estimate individual and collective doses to members of the public due to radioactive gaseous and liquid effluents from the plant in the course of normal plant operation. Therefore, these sections refer to 10 CFR Part 20.*

10. SRP 2.1.2, Section II, Acceptance Criteria, was revised with regard to acceptable activities unrelated to operation within the exclusion area. One description of such activities was revised from "represent no hazard..." to "have no potential for being a hazard...". This change seems to introduce an unwarranted, additional restriction in that no potential for being a hazard is considered to be more restrictive than "represent no hazard." The original wording is more appropriate and this proposed wording should not be adopted. However, 10CFR100.3 states "Activities unrelated to operation of the reactor may be permitted in an exclusion area under appropriate limitations, provided that no significant hazards to the public health and safety will result." Neither the original words nor the proposed words agree with the Part 100 requirement.

*Staff response: Use of the original NUREG-0800 wording of "representing no hazard..." is not significantly less restrictive and is acceptable for use in RS-002. The introduction of the word "potential" (i.e., "have no potential for being a hazard...") stemmed from the absence of information about a specific plant to be constructed on the site. In other words, the onus of the word "potential" is on the lack of information of the plant, rather than on any aspect of the hazard itself. In the safety review of a license application for a specific plant, evaluation of a hazard and the plant design features exposed to that hazard can lead to a finding of "representing no hazard..." (or "no significant hazards..." according to 10 CFR Part 100). However, when plant design information is not known, it is more appropriate to say that a particular condition or event has "no potential for being a hazard..." In any event, the key concept is to identify events and conditions that are deemed to present an undue threat to the safe operation of a plant, such that there would be a "significant hazard to the public health and safety...". The above notwithstanding, the staff will ensure the wording in RS-002 is appropriately consistent with 10 CFR Part 100.*

11. SRP 2.1.3, Section I Areas Of Review – the reference to Position C.3. of Reg Guide 4.7 appears to be incorrect; population density is the subject of Position C.4. This comment also applies to Section II.6 (page 2.1.3-3) and Section IV (page 2.1.3-7).

*Staff response: The staff agrees and will change the reference cites in Section 2.1.3 that are noted in the comment to Position C.4.*

12. SRP 2.2.1; Reference 3 should be updated from Draft Regulatory Guide DG-1087 to RG 1.78 Rev. 1. Also Reference 10, "Project 485, Aircraft Considerations, Pre-application Site Review, Boardman Nuclear Plant, October 1973," is referred to for useful guidance in the review of the hazard of military

aviation. The NRC should provide or reference a more recent and readily retrievable guidance document to aid in assessing potential hazards. Military aircraft have changed significantly since 1973 as to possibly make the use of this guidance obsolete.

*Staff response: The staff will update the citation to Reference 3 in Section 2.2.1, will remove Reference 10, and will add two recent references to replace Reference 10. These references are:*

*NUREG/CR-2859, "Evaluation of Aircraft Crash Hazards Analyses for Nuclear Power Plants," June 1982, and*

*DOE-STD-3014-96, "Accident Analysis for Aircraft Crash into Hazardous Facilities," October 1996.*

13. SRP 2.2.1 does not include the 1996 draft revision Reference 14. Thus, the acceptability of that method to address propane bulk storage is no longer clear.

*Staff response: The staff will add the reference noted in the NEI comment to Section 2.2.1 of RS-002.*

14. SRP 2.2.1, Section II Acceptance Criteria – the reference to 10CFR100.20 seems to be incomplete in that §100.20 identifies factors to be considered when evaluating sites while §100.21 identifies acceptance criteria for proposed sites. The review standard should reference the applicable portions of Part 100 or alternatively "Part 100 Subpart B."

*Staff response: The staff will add a reference to 10 CFR 100.21 to the acceptance criteria in Section 2.2.1.*

15. SRP 2.2.1 identifies Part 100 as an acceptance criterion but does not include the associated (and requisite) evaluation finding relative to compliance with Part 100. Such a finding should be included in Section IV, Evaluation Findings.

*Staff response: The staff will address compliance with 10 CFR Part 100 in Subsection IV of Section 2.2.1.*

16. SRP 2.2.1, Section IV (Evaluation Findings) - In Section II (Acceptance Criteria, page 2.2.1-2), references to 10CFR50.34 were replaced with references to 10CFR52.17. In Section IV (Evaluation Findings, page 2.2.1-5) one reference to 10CFR50.34 was replaced with a reference to 10CFR52.17; however, the reference in the first sentence in Section IV was not changed. A cross reference to 10CFR52.17 seems to be most correct and would be more consistent with the other changes in SRP 2.2.1. Although 10CFR52.17 does contain references to specific subsections in 10CFR50.34, a reference to 10CFR52.17 in the SRP seems to be more descriptive since all subsections of 10CFR50.34 are not applicable to an ESP.

*Staff response: The staff agrees that 10 CFR 52.17 is the best reference in the cases cited in the comment and will incorporate these comments into Section 2.2.1.*

17. SRP 2.2.1, Section IV – the language in the sample SER conclusions differ from 10CFR100.21; specifically [review standard] “...which have the potential for affecting safety-related structures ...” vs. [10CFR100.21(e)] “... site parameters established such that potential hazards ... will pose no undue risk to the type of facility proposed ...”. The review standard sample SER findings should parallel regulation language as much as possible.

*Staff response: The staff will make appropriate text changes in Section 2.2.1 to address this comment and ensure consistency with 10 CFR 100.21.*

18. SRP 2.2.3, Section II Acceptance Criteria - the reference to 10CFR100.20 seems to be incomplete in that §100.20 identifies factors to be considered when evaluating sites while §100.21 identifies acceptance criteria for proposed sites. The review standard should reference the applicable portions of Part 100 or alternatively “Part 100 Subpart B.”

*Staff response: The staff will reference both 10 CFR 100.20 and 10 CFR 100.21 in Subsection II of Section 2.2.3 as discussed in the comment.*

19. SRP 2.2.3 identifies Part 100 as an acceptance criterion but does not include the associated (and requisite) evaluation finding relative to compliance with Part 100. Such a finding should be included in Section IV, Evaluation Findings.

*Staff response: The staff will include 10 CFR Part 100 in the evaluation findings in Section 2.2.3.*

20. SRP 2.3.1 indicates design basis tornado parameters should be based on Regulatory Guide 1.76. This review standard should be updated to include the SECY-93-087 staff recommendations to employ a maximum tornado wind speed of 483 km/hr (300 mph) in the design of evolutionary and passive ALWRs. In its SRM dated July 21, 1993, the Commission approved the staff's position and the 1996 draft revision of the SRP provided for the use of such a standard 300 mph maximum tornado wind speed (per SECY 93-087).

The standard was based on an NRC staff re-evaluation of tornado data (discussed in NUREG/CR-4661) which concluded that 300 mph was an acceptable tornado design-basis for states east of the Rocky Mountains. While SECY-93-087 was addressing ALWR issues, the determination of a design basis tornado for a specific area of the United States is not design specific. Rather, the data and conclusions are location specific. Thus, the tornado occurrence data and evaluation is appropriate for use for the ESP applications as developed considering a recurrence interval of  $10^{-7}$  per year for states east of the Rocky Mountains (as indicated in SECY-93-087). The 300 mph acceptance criteria has already been evaluated and accepted by the staff as an appropriate design basis tornado, and thus, it should be included in the guidance provided in the Review Standards for ESP reviews. Note that all designs currently under consideration

by the ESP applicants (including certified designs) are based on this 300 mph criterion. Further, the Staff has accepted previously accepted this criterion as indicated in the ABWR Final Safety Evaluation quoted below.

NUREG-1503, the ABWR FSE states:

*SSAR Section 3.3.2 specifies that all seismic Category I structures exposed to tornado forces are designed to resist a maximum tornado wind speed of 483 km/hr (300 mi/hr) and translational wind velocity of 97 km/hr (60 mi/hr). This also implies a maximum tangential velocity of 386 km/hr (240 mi/hr). Also specified is a simultaneous atmospheric pressure drop to 13.8 kPa (2.00 lbf/in<sup>2</sup>) at the rate of 8.3 kPa/sec (1.20 lbf/in<sup>2</sup>/sec) and the radius of maximum tornado is 45.7 m (150 ft). In SECY-93-087, the staff recommended that the Commission approve its position to employ a maximum tornado wind speed of 483 km/hr (300 mph) in the design of evolutionary and passive ALWRs. In its SRM dated July 21, 1993, the Commission approved the staff's position. On the basis of this evaluation, the staff concludes that the ABWR design meets the Commission-approved staff recommendation for design basis tornado and is acceptable. This resolved Outstanding Issue 4 of the DSER (SECY-91-153).*

Additionally, the use of RG 1.76 is not consistent with the EPRI/NRC agreement regarding interim regulatory guidance that resulted in merging Regions I and II into a single region that retains the characteristics of Region II. (Ehlert, G. W to Fox, J and J. Baechler, Memorandum Subject Telephone Conversation with J. Lee of NRC, November 1991).

*Staff response: The subject of the applicable section of SECY-93-087 is design-basis tornado for design of advanced light-water reactors (ALWRs). The staff does not agree that acceptance of a given design-basis tornado wind speed for design of ALWRs means that this speed is acceptable for all sites that might be the subject of an ESP. Site parameters are postulated for a design certification [10 CFR 52.47(a)(iii)] and are not required to bound every site on which an applicant might seek to construct a nuclear power plant of certified design.*

*SECY 93-087 states: "The staff expects that use of these criteria will not preclude siting the ALWR plant designs on most sites in the United States. However, should an actual site hazard exceed the design envelope in a certain area, the COL applicant would have the option of performing a site specific analysis to verify that the design is still acceptable for that site."*

*The documented basis for the tornado-related conclusions in SECY-93-087 is NUREG/CR-4661, which shows 10<sup>7</sup>/yr tornado wind speeds above 300 miles per hour (mph) in some parts of the United States. A letter dated March 25, 1988, from NRC to the ALWR Utility Steering Committee, Subj: ALWR Design Basis Tornado, provided the staff's interim position on design basis tornado wind speed on a site-specific basis. This letter also cited design-basis tornado wind speeds higher than 300 mph in some parts of the United States.*

ESP applicants are not required to use Regulatory Guide 1.76 (although they may do so, because Regulatory Guide 1.76 is a staff-accepted approach). ESP applicants may use any design-basis tornado wind speeds that are appropriately justified. However, the staff does not believe that citing SECY-93-087 (or any document related to design certification) is adequate justification for use of 300 mph. Rather, the applicant must conduct a technical evaluation of site-specific data.

The staff will revise Section 2.3.1 appropriately to be consistent with the staff's position on this issue and the discussion provided in this response.

21. SRP 2.3.2 – The purpose of item 4 of Section III is not clear. There is no “review of the adequacy of the design of SSCs” for an ESP application.

*Staff response: Subsection III of Section 2.3.2 will be modified to clarify that the ESP applicant should provide and justify values of meteorological site characteristics. The guidance will indicate that the NRC staff will review the acceptability of characteristics the applicant submits. The site characteristics should also include any other meteorological site characteristics related to potential facility operation considerations (such as heat dissipation) that may have an impact on safety issues such as fogging and icing. To the extent that the applicant provides appropriate bounding information about the SSCs and facility operation in its ESP application, this issue should be resolved at the ESP stage, subject to confirmation at the COL stage that the actual SSCs and facility operation are within the bounding parameters and values specified at the ESP stage.*

22. SRP 2.3.3 Sections II, III, & IV (also, SRP 2.3.4 Sections II, III, & IV and SRP 2.3.5 Sections II & III) reference the reviewer to Regulatory Guide 1.23. Regulatory Guide 1.23 cites 10CFR100.10 (not applicable to new applications) and a non-existent 10CFR50 Appendix D as part of its regulatory authority. This should be corrected.

*Staff response: The staff will modify references to Regulatory Guide 1.23 in Sections 2.3.3, 2.3.4, and 2.3.5 of RS-002 to note the correct cite to 10 CFR Part 100 and to note the correct reference to 10 CFR Part 51 in lieu of Appendix D to 10 CFR Part 50.*

23. SRP 2.3.4; Section II, IV, and VI - These sections identify various Regulatory Guides, some of which are applicable only when Alternate Source Term (AST) is not used (i.e., RGs 1.5, 1.25, & 1.77). According to Regulatory Guide 1.183, much of this guidance has been superseded when an applicant uses AST and TEDE. The Regulatory Guide listings and discussions should be updated to incorporate AST guidance.

*Staff response: The regulatory guides cited in the comment have been superseded, and the staff will delete references to them from Section 2.3.4. The staff will modify Section 2.3.4 to indicate which Regulatory Guides can be used to meet the criteria in 10 CFR 50.34(a)(1) with regard to radiological doses for applicants who do or do not use the alternate source term (AST). For light-water reactors, applicants choosing to use the AST may use Regulatory Guide 1.183 as guidance. However, the NRC does not have a similar reference for non-light-water reactors. The NRC will consider developing such guidance in the future.*

24. SRP 2.3.4 –The new reference (DOE/TIC-27601, 1984) being added to sections 2.3.2 and 2.3.3 should also be included in SRP 2.3.4.

*Staff response: The staff agrees and will add the reference noted in the comment to Section 2.3.4.*

25. SRP 2.3.4 – Section III provides a new alternative for X/Q values at greater than 2 hours for the LPZ: “a sliding window approach using hourly meteorological data” is allowed in lieu of the existing guidance to assume a logarithmic relationship. This is a somewhat vague description of this new methodology. Please provide a reference that describes this method, or a precedent, or additional discussion for application of this method.

*Staff response: The term “sliding window” refers to calculation of running mean relative concentration (X/Q) values for periods varying from 1 to 720 hours in duration. For control room X/Qs, the ARCON96 computer code referenced in Regulatory Guide 1.183, “Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors,” uses a general procedure for calculating running mean X/Qs from hourly values and selecting the 95<sup>th</sup> percentile X/Qs for various averaging periods. The procedure is described in Sections 3.6, 3.7 and 3.8 of NUREG/CR-6331, Rev.1, “Atmospheric Relative Concentrations in Building Wakes”. Note, however, that the procedures used for calculating the hourly X/Qs in ARCON96 apply to control room habitability assessments. The sliding window concept has also been applied to dose calculations in the dose calculation procedure described in Section 4.1.5 of Regulatory Guide 1.183.*

*The existing draft text in Section 2.3.4 reflects staff acknowledgment of the existence of such a methodology as a possible alternative to a methodology based on the logarithmic relationship. However, calculations made on a direction dependent basis would need to factor in use of principles that apply to dispersion as a function of direction. Regulatory Guide 1.145, “Atmospheric Dispersion Models for Potential Accident Consequence Assessments at Nuclear Power Plants,” discusses a direction-dependent approach. The staff will consider developing guidance for this method in the future for application to the low population zone (LPZ).*

26. SRP 2.3.4 Section II, Acceptance Criteria, item 2, the 2<sup>nd</sup> paragraph refers to a series of accident specific regulatory guides whose guidance would appear to be superseded by RG 1.183 which is not referenced. This section should be revised to clarify which RGs are appropriate. This comment is also applicable to Section IV.

*Staff response: The staff agrees that revisions are needed to some of the reference citations in Section 2.3.4 to regulatory guides, and the staff will modify the section to indicate the appropriate regulatory guides that can be used to meet the criteria in 10 CFR 50.34(a)(1) with regard to radiological doses for light-water reactors. These references are Regulatory Guides 1.23, 1.78, 1.145, and 1.183. The staff plans to develop guidance for non-light-water reactors using lessons learned from review of the initial ESP applications.*

27. SRP 2.3.4 Section III, Review Procedures, Item #4, Cumulative Frequency Distribution of X/Q: The following paragraph, as presented in the 1996 draft revision, would appear to remain applicable for ESP where a specific reactor

technology has been specified. “For an application referencing a certified standard design, the reviewer verifies that measured site-related meteorological parameters for the proposed site have been used to derive site-specific X/Q values and that these values are consistent with *(or bounded by)* those identified in the site parameter envelope for the certified design.” (Italicized insert added.) This review procedure, as modified by the italicized phrase, should be retained for the ESP review standard. This comment is also applicable to Section IV.

*Staff response: The staff agrees with the comment and will add guidance similar to that referenced in the comment to Subsections III and IV of Section 2.3.4. An ESP application that references a certified design will need to demonstrate that the calculational methodology used for the confirmation discussed in the NEI comment is consistent with that employed for the design certification.*

28. SRP 2.3.5 – 10CFR100.21(c)(1) should be identified as a reference and/or acceptance criterion for the site because this is the appropriate review standard for this requirement and finding.

*Staff response: The staff agrees and will add reference(s) in Section 2.3.5 accordingly.*

29. SRP 2.3.5 –The new reference (DOE/TIC-27601, 1984) being added to sections 2.3.2 and 2.3.3 should also be included in SRP 2.3.5.

*Staff response: The staff agrees and will add reference(s) in Section 2.3.5 accordingly.*

30. SRP 2.3.5 – Section I, Areas of Review, states: “... identification of release points, release characteristics, and locations of specific receptors of interest will be addressed at the combined license (COL) stage.” This seems inconsistent with the Section II, Acceptance Criteria, identified expectation for a description of the release characteristics as identified in item 1 of the information to be provided in the safety assessment (also in items 2 & 4 of Section III, Review Procedures). This also seems inconsistent with the RS-002 stated intent to utilize the Chapter 15 SRP for review at the ESP stage. Both of the latter statements indicate intent to review “release characteristics” at the ESP stage. Thus, the “Areas of Review” statement of intent to review “release characteristics” at the COL stage should be revised to be consistent with the actual intent.

*Staff response: The staff agrees and will modify Section 2.3.5 to state that, to the extent that relevant and sufficient evaluations are provided in ESP applications, this issue should be resolved at the ESP stage. The staff will also note that this resolution would be subject to confirmation at the COL stage that the calculational methodology used for this confirmation is consistent with that employed at the ESP stage. For ESP applications that do not provide a full evaluation of atmospheric transport and diffusion of routine releases, those aspects not addressed at the ESP stage will be evaluated at the COL stage.*

31. SRP 2.3.5 Section I. Areas of Review, item 5 (Points of routine release of radioactive material to the atmosphere, the characteristics of each release mode, and the location of potential receptors for dose computations) of the 1996 draft



revision was removed, and a paragraph substituted indicating that this information will be addressed at the COL stage. If a reactor technology is selected or bounded at the ESP stage, then item 5 from the 1996 draft revision could remain applicable. This comment is also applicable in Section II, Acceptance Criteria, and applies to the deletion of the Technical Rationale for the same reasons. Similarly, in Section II, the deletion of items 1 and 3 and modification to item 2 under Acceptance Criteria from the 1996 draft revision, should remain applicable to the ESP stage based on the same rationale presented hereinabove.

*Staff response: The staff agrees and will modify Subsections I and II of Section 2.3.5 to address the specific concerns noted in the comment. The staff will add Item 5 in Subsection I and the supporting technical rationale from the 1996 draft revision to NUREG-0800 to Section 2.3.5. The text will also be modified to state that, to the extent relevant and sufficient evaluations are provided in ESP applications, this issue should be resolved at the ESP stage. The staff will also note that this resolution would be subject to confirmation at the COL stage that the calculational methodology used for this confirmation is consistent with that employed at the ESP stage. For ESP applications that do not provide a full evaluation of atmospheric transport and diffusion of routine releases, those aspects not addressed at the ESP stage will be evaluated at the COL stage.*

32. SRP 2.3.5 Section III, Review Procedures, Item 1 Atmospheric Dispersion Models - The third paragraph should be modified to permit consideration of this at the ESP stage depending upon the applicant's selection of a reactor technology or bounding parameters.

*Staff response: The staff agrees and will modify Subsection III of Section 2.3.5 to address the comment. The revised text will state that, to the extent relevant and sufficient evaluations are provided in ESP applications, this issue should be resolved at the ESP stage. The staff will also note that this resolution would be subject to confirmation at the COL stage that the calculational methodology used for this confirmation is consistent with that employed at the ESP stage. For ESP applications that do not provide a full evaluation of atmospheric transport and diffusion of routine releases, those aspects not addressed at the ESP stage will be evaluated at the COL stage.*

33. SRP 2.3.5. Based on the above and other changes made in this SRP, it appears that the evaluation of atmospheric transport and diffusion from specific release points cannot be addressed at the ESP stage. This section should be clarified to address how the review would be conducted for a selected or bounded reactor technology.

*Staff response: The staff recognizes that evaluation of atmospheric transport and diffusion from specific release points may or may not be addressed at the ESP stage, depending on information provided by each applicant. Accordingly, the staff will modify Section 2.3.5 to state that, to the extent relevant and sufficient evaluations are provided in ESP applications, this issue should be resolved at the ESP stage. The staff will also note that this resolution would be subject to confirmation at the COL stage that the calculational methodology used for this confirmation is consistent with that employed at the ESP stage. For ESP applications that do*

*not provide a full evaluation of atmospheric transport and diffusion of routine releases, those aspects not addressed at the ESP stage will be evaluated at the COL stage.*

34. SRP 2.3.5 – Section III, Review Procedures, does not include the 1996 draft revision to item 1 which indicates the Staff no longer uses the NUREG-0324 model, but now uses a model described in NUREG/CR-2919. Since NUREG/CR-2919 supersedes NUREG-0324, this 1996 draft revision should be included.

*Staff response: The staff will revise Subsection III of Section 2.3.5 to cite the final report, NUREG/CR-2919, which supersedes the draft report, NUREG-0324.*

35. SRP 2.4.1, Section I, Areas of Review, indicates the review “consists of comparing the independently verified or derived hydrologic design bases (see subsequent sections of 2.4) with the critical elevations of safety-related structures and facilities.” Since the “critical elevations” is design information that is not approved at the ESP stage, this is an inappropriate area of review for the ESP stage. The appropriate focus for NRC would be review of the applicant’s information “to determine the site characteristic (which must be accommodated in the design) has been appropriately determined.” This is consistent with the markup of Section IV, Evaluation Findings.

*Staff response: The staff agrees with the comment and will modify Subsection I of Section 2.4.1 accordingly.*

36. SRP 2.4.1 Section II B. (Acceptance Criteria) – The statement “Special precautions are required if a reactor is to be located on a site where significant quantities of radioactive effluent might accidentally flow into nearby streams or rivers or might find access to groundwater” is a quote from 10CFR100.10(c)(3). 10CFR100.10(c)(3) is not applicable to applications after 01/10/97. Acceptance Criteria language should agree with applicable regulations (e.g. 10CFR100 Subpart B). The above referenced ‘requirement’ is not contained in 10CFR100 Subpart B.

*Staff response: The staff agrees with the comment and will replace the text in Subsection II of Section 2.4.1 cited in the comment with reference(s) to 10 CFR 100.20(c)(3) in Subpart B, which is applicable.*

37. SRP 2.4.1, Section II.B.1, Acceptance Criteria, indicates the “description and elevations of safety-related structures, facilities, and accesses thereto should be sufficiently complete to allow evaluation of the impact of flood design bases.” However, at the ESP stage, there is no requirement to evaluate the impact of the flood design basis, only to identify the flood design basis. Thus, SRP 2.4.1 should be modified to reflect that a PPE-based ESP application that does not include evaluation of the impact of the flooding design basis would nonetheless still be sufficient for the ESP approval. This is consistent with the markup of Section IV, Evaluation Findings.

*Staff response: Section 2.4.1 is intended to provide a description of the surface and subsurface hydrologic characteristics of the site. Comparisons between site hydrologic characteristics and design parameters, including those identified by PPEs, will be addressed in sections 2.4.1 through 2.4.7, 2.4.9, and 2.4.11 through 2.4.13 of RS-002. The staff will modify Section 2.4.1, Subsection II.B.1, Acceptance Criteria, to remove the discussion on evaluation of the "description and elevations of safety-related structures, facilities, and accesses." Instead, Section 2.4.1 will be limited to a detailed hydrologic description of the site.*

38. SRP 2.4.1, Section II.B.1, Acceptance Criteria, needs to be revised to make it suitable for an ESP process that would include items such as comparing the PPEs for maximum flood and ground water level with the site characteristics for flood and ground water or determining if the established site grade provides flood protection and are areas requiring flood protection identified. We recommend the staff use examples like these when modifying SRP 2.4.1 to reflect use of the PPE approach.

*Staff response: The comparisons cited in the above comment will not be addressed in Section 2.4.1 of RS-002 but instead will be addressed in sections 2.4.1 through 2.4.7, 2.4.9, and 2.4.11 through 2.4.13 of RS-002. The staff will modify these sections to address comparisons between site hydrologic characteristics and design parameters (including those identified by PPEs).*

39. SRP 2.4.2, Section V.I, References, is revised to remove ANSI N170 as a reference and replace it with ANSI/ANS 2.8-1992. However, RG 1.59 (which endorses ANSI N170-1976) is retained as a reference. Thus, the status of ANSI N170-1976 as an acceptable method is not clear. See also SRP 2.4.3, 2.4.4, and 2.4.5. However, in SRP 2.4.7, the reference was retained as ANSI N170 and not revised/updated to ANSI/ANS 2.8-1992.

*Staff response: ANSI/ANS 2.8-1992 supersedes ANSI N170-1976. Therefore, the staff will remove references to ANSI N170-1976 throughout RS-002. The staff will modify references in RS-002 to Regulatory Guide 1.59 to indicate that ANSI/ANS 2.8-1992 should be used instead of ANSI N170-1976.*

40. SRP 2.4.2, Section VI, References - References 9, 10 & 13 could be deleted since their text references were deleted in Section III, Review Procedures (page 2.4.2-7).

*Staff response: The staff agrees that References 9, 10, and 13 are not needed and will delete them from Section 2.4.2.*

41. SRP 2.4.2 (editorial only) - Sample statements in Section IV, Evaluation Findings, have several m/s units in the second and third paragraphs of the sample text that should be cubic meters/sec or m<sup>3</sup>/s. Also, the "3 19" in the reference to "the 3 19 Corps of Engineers" appears to be superfluous (second paragraph of the sample statements).

*Staff response: The staff agrees with the comment and will correct the text in Section 2.4.2 accordingly.*

42. SRP 2.4.3 Section II (Acceptance Criteria) - 10CFR100.21 states : “Applications for site approval for commercial power reactors shall demonstrate that the proposed site meets the following criteria: . . . (d) The physical characteristics of the site, including meteorology, geology, seismology, and hydrology must be evaluated and site parameters established such that potential threats from such physical characteristics will pose no undue risk to the type of facility proposed to be located at the site”. Language in the SRP markups is “Meeting this requirement provides a level of assurance that structures, systems, and components important to safety for a nuclear power plant or plants of specified type that might be constructed on the proposed site could be designed to withstand . . .” The SRP wording should conformed to the regulation. Currently the SRP language focuses on the future acceptability of SSC design while the Part 100 language focuses more on the acceptability of the site. (This comment also applies to SRP 2.4.1, 2.4.2, 2.4.5).

*Staff response: Although the emphasis of the two statements differ, both statements quoted above concern the potential impact of natural hazards on facilities located at the site. The staff will ensure that the language in Sections 2.4.1, 2.4.2, 2.4.3, and 2.4.5 of RS-002 is consistent with 10 CFR 100.21.*

43. SRP 2.4.3 - See related SRP 2.4.2 comment regarding reference revision of ANSI N170 to ANSI/ANS 2.8-1992.

*Staff response: See staff response to NEI comment I.39.*

44. SRP 2.4.3 - References to RG 1.29 and RG 1.102 in Section II, Acceptance Criteria, (page 2.4.3-4) should be omitted since they are applicable only to design reviews at COL.

*Staff response: The staff agrees and will delete the references noted in the comment from Section 2.4.3.*

45. SRP 2.4.3, pages 2.4.3-6 & 2.4.3-23 - The Reference number sequence of 16, 18 and 19 listed in paragraph 5 on page 2.4.3-6 is incorrect. The correct references are 17, 19 and 20.

*Staff response: The staff will correct the reference numbers in Section 2.4.3 as noted in the comment.*

46. SRP 2.4.4 (page 2.4.4-8) – “12 km (39 ft)” should be “12 m (39 ft)”

*Staff response: The staff will correct this typographical error in Section 2.4.4.*

47. SRP 2.4.4 - See related SRP 2.4.2 comment regarding Reference revision of ANSI N170 to ANSI/ANS 2.8-1992.

*Staff response: See staff response to comment I.39.*

48. SRP 2.4.5 - See related SRP 2.4.2 comment regarding Reference revision of ANSI N170 to ANSI/ANS 2.8-1992.

*Staff response: See staff response to comment I.39.*

49. SRP 2.4.7 - See related SRP 2.4.2 comment regarding Reference revision of ANSI N170 to ANSI/ANS 2.8-1992.

*Staff response: See staff response to comment I.39.*

50. SRP 2.4.7 - References to RG 1.102 in Section II, Acceptance Criteria, (page 2.4.7-3) should be omitted since it is applicable only to design reviews at COL.

*Staff response: The staff agrees with the comment and will delete references to Regulatory Guide 1.102 from Section 2.4.7.*

51. SRP 2.4.7 - References to RG 1.27 are not consistent in Section II, Acceptance Criteria. It is removed on page 2.4.7-3, but retained on page 2.4.7-5.

*Staff response: The staff will delete reference to Regulatory Guide 1.27 in Section 2.4.7.*

52. SRP 2.4.7 (page 2.4.7-7) Section IV Evaluation Findings – the example findings language uses the phrase “...there will be no adverse effects at the site due to ice ...” instead of the 10CFR100.21(d) language “site parameters established such that potential threats from such physical characteristics will pose no undue risk to the type of facility proposed to be located at the site.” The term “no undue risk” from Part 100 should be used instead of “no adverse impacts.”

*Staff response: The staff agrees with the comment and will modify Subsection IV of Section 2.4.7 accordingly to be more clearly consistent with the language in 10 CFR Part 100.*

53. SRP 2.4.11, Section 1, item 7:  
This item identifies an excessive range for ESP review. The maximum value should be the value of interest for determining if the site is suitable. The application may cover a spectrum of potential reactor designs including passive plants that require no safety related cooling water. It is suggested that the data for specific operating cases should be the data requested such as the following items, which would be provided in PPEs:

- (i) Minimum Essential (UHS) cooling water flow
- (ii) Normal flow
- (iii) Shutdown flow

*Staff response: The staff will clarify, consistent with the intent of the comment and the intent of the cited text in draft RS-002, that the availability of water supply must be sufficient to meet the needs of a plant or plants that might be located at the site, and that those needs may be defined by a PPE if an applicant uses that approach. Specifically, those needs include the*

*maximum required essential cooling water flow, as well as the maximum required flow for normal plant needs at power and shutdown.*

54. SRP 2.4.12, Section I, Areas of Review, indicates the areas reviewed include the “hydrodynamic effects of groundwater on safety-related structures and components.” However, at the ESP stage, there is no attempt to evaluate the impact of the groundwater design basis through review of the design, only to identify the design basis. Thus, the identified review of the effects on the “structures and components” is not appropriate at the ESP stage. This change is consistent with the text changes in other sections of this review standard.

*Staff response: The staff agrees and will delete the phrase cited in the comment from Subsection I in Section 2.4.12.*

55. SRP 2.4.12, Section II, Acceptance Criteria, lead in paragraphs for 2.4.12.1 and 2.4.12.2 are now the same and the second one can be omitted.

*Staff response: Paragraph 2.4.12.1 requires a description of the regional and local aquifers, sources, and sinks. This paragraph also requires the applicant to describe the type of groundwater use, wells, pump and storage facilities, and the flow requirements of a nuclear power plant. Paragraph 2.4.12.2 requires a description of the present and projected local and regional groundwater uses, including a description of existing uses in terms of amounts, water levels, location, drawdown, etc. These uses include more than just those for the projected nuclear power plant, which is the information required in Section 2.4.12.1. The staff does not plan to change the text in Section 2.4.12 to address this comment.*

56. SRP 2.4.12, Section VI, References, should be further modified to omit documents no longer used in the text.

*Staff response: The staff will reevaluate the references in the Section 2.4.12 reference list for applicability, will consider adding citations in the text for any that are applicable but not currently cited in the text, and will delete from the reference list any found to be unnecessary.*

57. SRP 2.4.13, Section IV Evaluation Findings (page 2.4.13-7) - The draft finding “Based on these considerations, the staff concludes that a nuclear power plant of the type specified by the applicant that might be constructed on the site would be capable of meeting the requirements of 10 CFR Parts 52 and 100 with respect to potential accidental releases of radioactive liquid effluents.” This type of finding focuses on the potential acceptability of a plant design rather than the acceptability of the site. The finding should focus on the acceptability of the site characteristics; for example, “... the staff finds the site characteristics are acceptable to ensure liquid effluent radiological consequences will be within regulatory limits for a reactor design which fits within the established site characteristics.” The finding wording should be compatible with 10CFR52.39 and 10CFR52.79(a)(1).

*Staff response: The staff agrees with the comment and will modify Subsection IV of Section 2.4.13 accordingly.*

58. SRP 2.5.4, Section I, Areas of Review, indicates that the “safety-related excavation” plans (item 5) will be reviewed. While the safety impact of appropriate backfill is evident; it is not clear what part of digging a hole is “safety-related.” The scope of activities involved in “safety-related excavation” should be clarified.

*Staff response: Backfill may be safety-related, whereas excavation itself is not. The staff will clarify Item 5 under Subsection I of Section 2.5.4 accordingly.*

59. SRP 2.5.4, Section I, Areas of Review, indicates that the “safety-related excavation and backfill plans and engineered earthwork analysis and criteria” (item 5) will be reviewed. SRP 2..5.4 should be modified to reflect that this area would be reviewed at the COL stage.

*Staff response: The staff agrees with the comment and will note in the text that item 5 under Subsection I of Section 2.5.4 will be addressed at the COL stage.*

60. SRP 2.5.4, Section I, Areas of Review, indicates that the “operating basis earthquake” (item 9) will be evaluated. This is not consistent with the 1997 revision of SRP 2.5.2 which removed section 2.5.2.7 on the OBE review. This review standard should be similarly updated to reflect the appropriate SSE-based ground motion reviews. The OBE is also mentioned in item 2 of the interface discussions and in item 2.5.4.9 of the Acceptance Criteria section (note this item specifically refers to the non-existent SRP section 2.5.2.7). The OBE is also discussed in Sections III and IV.

*Staff response: The staff agrees with the comment and will delete references to the “operating basis earthquake” (OBE) from RS-002.*

61. SRP 2.5.4, Section I, Areas of Review, indicates that the “techniques and specifications to improve subsurface conditions” (item 12) will be reviewed. Because this area involves safety-related design and construction activities not conducted under an ESP, SRP 2..5.4 should be modified to reflect that this area would be reviewed at the COL stage..

*Staff response: The staff agrees and will note in the text that item 12 under Subsection I of Section 2.5.4 will be addressed at the COL stage.*

62. SRP 2.5.4, Section II, Acceptance Criteria, and Section III, Review Procedures, for subsection 2.5.4.3 indicate that the locations of the safety-related facilities should be shown on a plot plan. SRP 2.5.4 should be modified to reflect that for those ESP applicants whose application is based on the PPE approach, the specific locations of the safety-related structures may not be known at the ESP stage.

*Staff response: The staff agrees with the comment and will modify Section 2.5.4 consistent with the comment. The text will also state that, where safety-related structure locations are not provided, the applicant should provide a bounding footprint for such structures.*

63. SRP 2.5.4, Section II, Acceptance Criteria, for subsection 2.5.4.3 indicates that “geologic maps and photographs of the excavations for the facilities” should be provided. There will be no excavations prior to the issuance of an ESP, thus these maps and photographs cannot be provided in an ESP application.

*Staff response: The staff agrees with the comment and will delete text in Section 2.5.4 calling for this type of information, or the staff will revise the text to state that the information will be needed at the COL stage.*

64. SRP 2.5.4, Section II, Acceptance Criteria, and Section III, Review Procedures, for subsection 2.5.4.5 indicate that several types of data related to backfill and earthwork analysis should be provided. There will be no backfill or earthwork analysis under an ESP. These activities for safety-related facilities are not related to site acceptability, and can begin only after a COL is issued or an LWA approves such activities. Thus, these areas should be reviewed at the COL stage.

*Staff response: The staff agrees with the comment and will delete text in Section 2.5.4 calling for this type of information, or the staff will revise the text to state that the information will be needed at the COL stage.*

65. SRP 2.5.4, Section II, Acceptance Criteria, and Section III, Review Procedures, for subsection 2.5.4.11 indicate that the discussion of criteria and design methods for safety-related facility stability will be reviewed. There will be no safety-related facility design evaluations under an ESP. These activities for safety-related facilities are not related to site acceptability, and can begin only after a COL is issued or an LWA approves such activities. Thus, these areas should be reviewed at the COL stage.

*Staff response: The staff agrees with the comment and will delete text in Section 2.5.4 calling for this type of information, or the staff will revise the text to state that the information will be needed at the COL stage.*

66. SRP 2.5.4, Section II, Acceptance Criteria, and Section III, Review Procedures, for subsection 2.5.4.12 indicate that the discussion of techniques to improve subsurface conditions for safety-related facilities will be reviewed. There will be no safety-related facility design or construction activities under an ESP. These safety-related design activities are not related to site acceptability, and are conducted at the COL stage. Thus, these areas should be reviewed at the COL stage.

*Staff response: The staff agrees with the comment and will delete text in Section 2.5.4 calling for this type of information, or the staff will revise the text to state that the information will be needed at the COL stage.*

67. SRP 2.5.4, Section III, Review Procedures, indicates that the “design criteria” are reviewed. There will be no safety-related facility design activities under an ESP. These safety-related design activities are not related to site acceptability, and are



conducted at the COL stage. Thus, these areas should be reviewed at the COL stage.

*Staff response: The “design criteria” cited in the comment do not pertain to safety-related facility design, but rather to the extent and content of the site investigations, such as borings, trench logs, seismic investigations, and laboratory test results. The staff agrees the statement is confusing and will clarify it.*

68. SRP 2.5.4, Section III, Review Procedures, indicates that an “analysis of the design” of complex subsurface conditions or seismic Category I earth or rock fill dams will be reviewed. There will be no safety-related design activities under an ESP. These safety-related design activities are not related to site acceptability, and are conducted at the COL stage. Thus, these areas should be reviewed at the COL stage.

*Staff response: The staff agrees with the comment and will delete text in Section 2.5.4 calling for this type of information, or the staff will revise the text to state that the information will be needed at the COL stage.*

69. SRP 2.5.4, Section IV, Evaluation Findings, indicates that the “design analyses” are reviewed for “adequate margins of safety.” There will be no safety-related design analyses under an ESP. These safety-related design activities are not related to site acceptability, and are conducted at the COL stage. Thus, these areas should be reviewed at the COL stage.

*Staff response: The staff agrees with the comment and will delete text in Subsection IV of Section 2.5.4 calling for this type of information.*

70. SRP 2.5.4 identifies Part 100 as an acceptance criterion but does not include the associated (and requisite) evaluation finding relative to compliance with Part 100. Such a finding should be included in Section IV, Evaluation Findings.

*Staff response: The staff agrees with the comment and will add a reference to compliance with 10 CFR Part 100 in Subsection IV of Section 2.5.4.*

71. SRP 2.5.5, Section I, Areas of Review, indicates that the “design criteria and design analysis” (Subsection 2.5.5.2) and the “properties of borrow material, compaction and excavation specifications” (Subsection 2.5.5.4) will be reviewed. These areas should be reviewed at the COL stage since no safety-related design specifications or analysis will be prepared at the ESP stage. Treatment in this manner is consistent with the Review Standard statement: “...complete stability and safety analyses are necessary but not at the early site permit stage.”

*Staff response: The staff agrees with the comment and will delete text in Section 2.5.5 calling for this type of information, or the staff will revise the text to state that the information will be needed at the COL stage.*

72. SRP 2.5.5 refers to the review of the OBE in Section I, Areas of Review, in item 2 of the interfaces discussions and in Section II, Acceptance Criteria. These

references to the OBE should be reviewed for consistency with the 1997 revision of SRP 2.5.2 which removed section 2.5.2.7 on the OBE review.

*Staff response: See staff response to comment I.60.*

73. SRP 2.5.5, Section II, Acceptance Criteria, for subsection 2.5.5.1 indicate that the margin of safety of the safety-related slope design will be reviewed. These safety-related design activities are not related to site acceptability, and are conducted at the COL stage. Treatment in this manner is consistent with the Review Standard statement: "...complete stability and safety analyses are necessary but not at the early site permit stage." Thus, these areas should be reviewed at the COL stage.

*Staff response: The staff agrees with the comment and will delete text in Section 2.5.5 calling for this type of information, or the staff will revise the text to state that the information will be needed at the COL stage.*

74. SRP 2.5.5, Section III, Review Procedures, for subsection 2.5.5.2 indicate that the margin of safety and safety factors of the safety-related slope design will be reviewed. These safety-related design activities are not related to site acceptability, and are conducted at the COL stage. Treatment in this manner is consistent with the Review Standard statement: "...complete stability and safety analyses are necessary but not at the early site permit stage." Thus, these areas should be reviewed at the COL stage.

*Staff response: The staff agrees with the comment and will delete text in Section 2.5.5 calling for this type of information, or the staff will revise the text to state that the information will be needed at the COL stage.*

75. SRP 2.5.5, Section III, Review Procedures, for subsection 2.5.5.4 indicate that the "specifications and quality control techniques to be used during construction are reviewed..." These safety-related construction activities are not related to site acceptability, and are conducted at the COL stage. Thus, these areas should be reviewed at the COL stage.

*Staff response: The staff agrees with the comment and will delete text in Section 2.5.5 calling for this type of information, or the staff will revise the text to state that the information will be needed at the COL stage.*

76. SRP 2.5.5 identifies Part 100 as an acceptance criterion but does not include the associated (and requisite) evaluation finding relative to compliance with Part 100. Such a finding should be included in Section IV, Evaluation Findings.

*Staff response: The staff agrees and will add reference to compliance with 10 CFR Part 100 in Subsection IV of Section 2.5.5.*

77. SRP 3.5.1.6, Section IV, Evaluation Findings, - The final sentence of the sample SER conclusions does not make sense. It appears that a couple of thoughts have been run together.

*Staff response: The text referenced in the comment contains a typographical error. It will be revised to include the word “and” between “applicant” and “meets.”*

78. SRP 3.5.1.6, Section V, References, - References 3 and 6 are not used and perhaps should be omitted to prevent confusion.

*Staff response: References 3 and 6 are appropriate and will remain. The staff will revise the text in Section 3.5.1.6 to include citations to these references.*

79. SRP 13.3, Section IV, Evaluation Findings, item 2, indicates the review will consider the applicable criteria of RG 1.101 and NURREG-0696; however, these two documents are not referenced in Section II, Acceptance Criteria, or in Section III, Review Procedures. The findings should be consistent with the acceptance criteria and review procedures.

*Staff response: The acceptance criteria, review procedures, and evaluation findings will be revised to ensure internal consistency within Section 13.3.*

#### **J. Comments on the NRC Selection of Applicable ESRP Sections of NUREG-1555**

1. ESRP General - ESP applicants have been referring to the SRP and ESRP in the drafting of their ESP applications. We remain concerned at the disconnect between the ESRP and the Part 52/ESP context and our understanding that the staff does not plan to provide specific mark-ups of existing ESRP guidance to support NRC staff reviews of ESP applications. In particular, several ESRP sections would require design information that would not be available at the ESP stage review, unless a specific design is identified. We expect that interim guidance and training provided to the NRC staff reviewers will clarify that such design information is not required for ESP.

*Staff response: When the staff developed the Environmental Standard Review Plan (ESRP - NUREG-1555, March 2000), it ensured that the ESRP provides guidance for conducting the environmental review of various licensing actions, including ESPs, in a thorough and disciplined manner. In late 2002, a workshop was held among the NRC staff and its contractors who would be involved in environmental reviews for an ESP application. Participants reviewed the currency and completeness of the ESRP, identified how to use it during the staff's review of the expected ESP applications, and considered the implications of an ESP application employing the PPE approach instead of a specific design to the staff's review. Training was provided to participants on use of the ESRP in review of an ESP application, including one that might use the PPE approach. As a result of this workshop, the staff concluded the following:*

- *The guidance in the ESRP is sufficiently up-to-date to support the review of ESP applications.*
- *It is unnecessary to mark up and segregate portions of the ESRP guidance specifically for ESP reviews.*
- *The robustness of the EIS for an ESP will depend on the level of detail and analyses provided in the application.*

- *The ESRP guidance should be clarified in certain areas to support review of an ESP application (as was done in Attachment 3 to draft RS-002).*
- *The PPE approach can serve as the foundation for an ER. PPE values do not necessarily have to provide a one-to-one replacement for design-specific values, but they must provide sufficient information for the staff to develop a reasonable estimate of impacts on specific environmental resources.*

*Based on the above considerations, the staff does not plan to perform detailed markups on the ESRP to support ESP reviews. The NRC and its contractor staff tasked to perform the environmental assessments for the ESP applications have been trained on using the guidance in the ESRP and draft RS-002, and on how the ESP applicants propose to apply the PPE approach in their ESP applications. Staff reviewers understand the need to adapt the ESRP review guidance to accommodate the PPE concept. The staff plans to add an introductory page to Attachment 3 to RS-002 to outline the staff's approach to reviewing those ESP applications employing the PPE approach. In addition, where appropriate the staff is planning to modify Attachment 3 to address certain public comments on draft RS-002, and the staff's responses to those comments, as discussed herein.*

2. ESRP General - When considering appropriate review and acceptance criteria (as identified in the ESRPs) for an ESP, it is important to remember the purpose of an ESP and its associated findings. The ESP environmental finding is only that the environmental consequences of a reactor built as identified in the application will be acceptable. There is no finding related to the acceptability of the design of structures, systems, and components (SSCs). Thus, any review or acceptance criteria based on review of SSCs is not pertinent since the SSC design is not approved via an ESP. Acceptance criteria for design reviews will be appropriate under Part 52, Subpart B or Subpart C evaluations.

*Staff response: As stated in the staff's response to NEI comment J.1, the NRC and its contractor staff tasked to perform the environmental reviews for the ESP applications have been trained both on using the guidance in the ESRP and draft RS-002 and on incorporating the PPE concept in their reviews. They are knowledgeable of the guidance in the ESRP and have extensive background in performing National Environmental Policy Act (NEPA) reviews. To the extent design information is needed to evaluate the environmental impacts of operation or the consequences of accidents associated with the ER, applicants using the PPE approach may provide PPE values in lieu of specific design information on SSCs, provided sufficient information is provided in the ER to support the staff's independent environmental assessment.*

3. ESRP General – With regard to transmission systems, the ESRPs should be revised to account for the restructured utility market. Often, the applicant does not own the transmission lines, and does not control the design of the towers, corridors, or other associated systems or the right of ways. The ultimate decision as to what modifications to transmission facilities will be necessary is at the discretion and control of the transmission system owner or operator pursuant to rules promulgated by the Federal Energy Regulatory Commission.

*Staff response: With regard to issues arising from a restructured utility market, the staff views the guidance in NUREG-1555 related to electric power transmission systems as still current. If there are new activities associated with the transmission of electricity (that would be related to a new facility to be located on the site), those activities are within the scope of the review of the ESP application.*

4. ESRP General – Many Part 100 references in the ESRP are to the old criteria of 100.10 or 100.11. These are not applicable for new applications such as an ESP application and should be consistently updated throughout the ESRP. Examples of ESRP criteria of NUREG-1555 that may need revision to accommodate use of plant parameter envelopes and other concerns follow.

*Staff response: In ESRP Sections 2.5.1, 2.5.4, 6.4, and 7.1, there is either a reference to 10 CFR 100.10 without a corresponding reference to 10 CFR 100.20, or there is a reference to 10 CFR 100.11 without a corresponding reference to 10 CFR 100.21. The staff will note, in Attachment 3 to RS-002, the appropriate 10 CFR Part 100, Subpart B references for review of an ESP application.*

5. ESRP 2.3.2, Water Use
  - a. Data and Information Needs calls for a “water-use diagram” flow rates from various systems with likely water use requirements. Flow rates “to and from” the various systems may not be available, per se, at the ESP stage; however, bounding values will be established for the maximum water consumption requirements for the key water use services.
  - b. This section also calls for “water consumption during periods of minimum water availability.” This would be implicitly considered in the review and establishment of maximum water consumption values that are provided in the PPE. Further, the ESRP calls for operational monthly variance in water use, based on plant status. Such information would not be specified at the ESP stage. The maximum consumption values will provide a sufficient basis for judging site suitability at the ESP stage in that these bounding water use requirements would be compared with the most limiting water supply site characteristics, thereby evaluating and demonstrating site suitability. At the COL stage, the applicant will confirm that the plants actual water use requirements are bounded by the values specified and reviewed at the ESP stage.
  - c. It is recommended that this ESRP section’s information be revised to recognize the data availability at the ESP stage and address the possible use of bounding PPE water use requirements for evaluating water use environmental impacts. It is also recommended that the Review Procedures and Evaluation Findings be revised to recognize and distinguish between the ESP and COL stage reviews.

*Staff response: The staff expects water use diagrams in an ESP application employing the PPE approach to be simple. The PPE provides a basis for defining a simple water budget diagram*

of water in, water out, and consumptive loss (e.g. evaporation). Flow rates through various water subsystems of the plant are not expected at the ESP stage.

The ESP assessment can rely on the estimate of bounding maximum water use. However, in lieu of information on patterns of seasonal variability, the maximum water use value will be compared to the estimate of the water supply during conditions of the local environment's period of minimum water supply. An ESP applicant may elect to define the patterns of seasonal or monthly water use variation, in the cases in which periods of maximum water demand are not coincident with periods of minimum water supply.

6. ESRP 2.5.4, Environmental Justice On February 11, 1994, President Clinton issued Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations*, 3 CFR 859 ("Executive Order"). The President also issued an accompanying "Memorandum for the Heads of All Departments and Agencies," *Memorandum on Environmental Justice*, dated February 11, 1994, 30 Weekly Comp. Pres. Doc. 279 (February 14, 1994) ("Presidential Memorandum").

Since that time, the NRC has developed guidance regarding the application of the environmental justice concept, as articulated in the Executive Order, to the NRC's licensing process, and has now issued two major decisions regarding its application in the NRC licensing process. By letter dated December 20, 2002, the Nuclear Energy Institute (NEI) requested that the NRC reconsider the application of the Executive Order in the context of the licensing of facilities under Title 10 of the Code of Federal Regulations and issue a Policy Statement to clearly articulate the Commission's expectations regarding the NRC's implementation of the Executive Order and to guide the NRC staff in its revision of its regulatory guidance accordingly.

An analysis of the Executive Order and the NRC's subsequent actions was provided to the NRC with that letter. The analysis demonstrated that the Executive Order does not provide a legal basis for contentions based on environmental justice allegations to be litigated in NRC licensing proceedings. Rather, the NRC should evaluate the environmental impacts of a proposed action consistent with the dictates of the National Environmental Policy Act. The issue under NEPA is not whether a particular major federal action has a disproportionate impact on minority or low-income populations, but whether there are significant adverse impacts, regardless of the population affected. If there are any adverse environmental impacts, they must be resolved in a non-discriminatory manner. The NRC's implementation of the Executive Order cannot lead to a different result.

NEI pointed out that this issue has immediate implications to the three companies currently preparing early site permit applications for submittal in 2003, and to every other applicant for a license from the NRC. Compliance with current NRC guidance will require the expenditure of significant NRC and license applicant resources. As a result, NEI's December 20 letter respectfully requested that the Commission address this issue as promptly as possible.

In a letter to NEI dated February 10, 2003, the Chairman of the NRC advised NEI that “[t]he Commission recognizes that it could benefit from a more comprehensive assessment of, and guidance on, its approach to the consideration of environmental justice matters.” Accordingly, the NRC staff was advised that it should “develop and propose a draft policy statement on the treatment of environmental justice matters in NRC licensing” for the Commission’s consideration that would take into consideration the comments in NEI’s December 20, 2002, letter.

As a result, it would not represent a wise use of resources for ESP applicants to provide, and NRC staff to commit the resources to review information responsive to current NRC staff guidance until the NRC staff has provided a draft policy statement to the Commission and the Commission has affirmed the current NRC staff approach or has issued a policy statement directing if environmental justice matters should be treated in NRC licensing proceedings, and if so, how.

Until and unless the Commission issues a policy statement that alters current NRC practice, it is expected that ESP applicants will address environmental justice consistent with current staff guidance. However, we recommend in the meantime that the staff focus its resources on the reassessment of current NRC policy as directed by the Commission, and not on review of ESP applications based on guidance that is the focus of this reassessment.

*Staff response: The ESRP reflects current NRC policy on environmental justice. The Commission has directed the NRC staff to develop a draft policy statement on the treatment of environmental justice matters in NRC licensing. The NRC will make any changes regarding environmental justice matters available to the public after completion of that assessment. Until and unless such changes are made and are determined to be applicable to previously submitted ESP applications, the staff will use the existing ESRP guidance in its review of ESP applications.*

7. ESRP 3.3.1, Water Consumption

- a. Data and Information Needs. See Comment above regarding the use of bounding water use values from the PPE.
- b. Section III, Review Procedures directs the Staff to perform “simple mass balance computations to ascertain whether the reported flow rates are consistent for each plant-operating mode.” This section also calls for water consumption variations by month. As noted earlier, details regarding water use variance with plant status will not be available at the ESP stage but that bounding water use values will be compared with limiting water supply site characteristics. It is recommended that this ESRP section be revised considering the expectations for the ESP stage review and likely activities at the COL stage review.
- c. Evaluation Findings for this section would provide a “description of the flow path of water” from water sources through each major plant water system to points of discharge. Such design detail would not be available

at the ESP stage review, unless a specific design is identified. SRP 3.3.1 should be modified to reflect that bounding water use values provide adequate basis for evaluating site suitability. The same concept applies to this section's findings regarding flow diagrams, operational water use variance, and seasonal differences. See Comment 6.b, above.

*Staff response: See staff response to comment J.5.*

8. Section 3.4.1 (Cooling System) Description and Operational Modes
  - a. Data and Information Needs. Similar to ESRP 2.3.2 and 3.3.1, the guidance seeks levels of design and operational detail that would not be available at the ESP stage of review. This sections calls for system descriptions, anticipated operational modes, estimated time periods of operation in each mode; and heat dissipation on a operational mode basis. See Comment 5.a, above.
  - b. Section II, Acceptance Criteria lists Part 52.17(a)(1)(v) as an acceptance criterion. No other guidance is provided in the ESRP section to assist the reviewer as to how this acceptance criterion would be applied and it is too general to be helpful. Pursuant to previous comment, this criterion appears to need additional clarification as to what is acceptable for the ESP stage review.
  - c. Review Procedures call for the reviewer to ensure adequacy of information regarding "operational modes," verify water use with previous Staff analyses (ESRP 3.3.1), analyze the overall cooling system design such that it is "consistent with good engineering design," identify non-emergency modes, etc. This level of review cannot be accomplished at the ESP stage review in the absence of specific detailed design information. We recommend. that this Section's goals be modified to reflect what is required for a site suitability review.

*Staff response: Based on consideration of the NEI PPE Worksheets submitted on February 7, 2003, the staff expects to assess the environmental impacts of multiple types of cooling systems. Applicants should provide, as appropriate, different simplified flow schematics for each of the potential cooling system types (such as natural draft cooling towers, mechanical cooling towers, and once-through cooling systems) for the proposed site so that the staff can assess the environmental impacts of each type. Applicants may use simplified assumptions of expected water flows into and out of these different systems.*

9. ESRP 3.4.2, Component Descriptions
  - a. Data and Information Needs call for intake structure drawings; description of "trash racks" and "traveling screens," etc.; and intake system performance requirements for "operational modes" identified in the ESRP 3.4.1 review. Similarly, for discharge systems, this section seeks drawings of the outfall structure; its location relative to the receiving body and water surface; and again, performance characteristics by



“operational mode” identified in the ESRP 3.4.1 review. See Comment 5.a, above.

- b. It is likely that as part of the evaluation of limiting site characteristics and the comparison with bounding plant requirements, certain potential design approaches may be eliminated and some may be identified as preferred, i.e., the “proposed action” in a given category of service. In such cases, ESP applications may include conceptual drawings showing general arrangements and key features important to the environmental impact review will likely be available. For example, the application may identify the preferred (proposed) effluent discharge as a free outfall pipe. The application would likely provide maximum discharge flow rates, discharge configuration relative to the receiving body of water, and a possibly a conceptual (non-design) drawing providing sufficient information to support the environmental effects analysis. The applicant’s environmental effects analysis would support an overall assessment of the nature and extent of any adverse impacts to the environment. This ESRP should be revised to reflect possible review of this level of information.
- c. The information described in Comment J.8.b, above, would also be sufficient to assess alternative design approaches to the preferred (proposed) approach. At the COL stage review, the final design would be reviewed against the conceptual design described and evaluated at the ESP stage. If the final design were bounded by the ESP stage conceptual description, then no further review would likely be needed. To the extent some elements of environmental impact could not be considered at the ESP stage, these aspects would be evaluated at the COL stage.
- d. Review Procedures, as in the case of ESRP 3.4.1, call for a broad range of relatively detailed design review activities that cannot, as written, literally be satisfied at the ESP stage in the absence of specific detailed design information. Examples include:
  - (i) Evaluate temperature rise across the condenser
  - (ii) Analyze the applicant’s estimates of average monthly discharge temperatures
  - (iii) Compare the cooling system descriptions with similar plants
  - (iv) Ensure that the proposed systems are consistent with good engineering practice
  - (v) If necessary, conduct “independent analyses to ensure that performance characteristics are accurately described”

This ESRP should be revised to reflect a review of the expected level of information.

- e. The ESP application will provide bounding values for important parameters in order to support an assessment of site suitability. Consistent with discussion elsewhere regarding the ESP interface with COL, ESRP 3.4.2 should make it clear that the COL applicant will provide additional detail as appropriate to support staff needs to confirm the system description and performance as it pertains to environmental impact. It is the industry's expectation that at COL, the final design would be compared with the conceptual design as described at the ESP stage. If the ESP stage parameters continue to bound the final design values, then the conclusions reached at ESP stage regarding the nature and extent of adverse environmental impacts would be remain valid.
- f. We recommend that ESRP 3.4.2 be reviewed and updated to appropriately distinguish between information requirements and required review findings at the ESP vs. COL stage.

*Staff response: Based on consideration of the NEI PPE worksheets submitted on February 7, 2003, and the description in the comment of the level of information to be provided for these matters in an ESP application that uses a PPE approach, the staff believes that the level of detail proposed will be sufficient to allow the staff to perform an environmental impact assessment to support an ESP review. Note that additional detailed information might help to resolve issues concerning certain impact assessment requirements (e.g., intake design information might bound impacts associated with the impingement and entrainment losses of aquatic species) at the ESP review stage.*

#### 10. ESRP 3.5: Radioactive Waste Management System

- a. Unless sufficient specific design information is presented in the ESP, it is unlikely that an application could comply with this section as written. Discussion or guidance should be provided relative to the possible use of a bounding approach. Without the source terms that are typically provided in this section, the subsequent impact assessments requested in Section 5.4 cannot be accomplished. This comment is somewhat generic in that the ESRP guidance needs to be updated to reflect alternative approaches, i.e. PPE concept.

*Staff response: The NRC and its contractor staff tasked to perform the environmental reviews for ESP applications have been trained on how the PPE approach will be applied and have determined that, for most of the review areas in the ESRP, an acceptable analysis can be performed using the PPE approach. For example, with regard to ESRP Section 3.5, the NRC will evaluate the radioactive effluent release source terms (both liquid and gaseous) and potential release points provided by an applicant using the PPE approach. Reviewers of ESRP Section 5.4.2 (Radiation Doses to a Member of the Public) will use this information to review the applicant's calculation of maximum individual and population doses based on PPE effluent source terms, and will perform an independent evaluation. Finally, the reviewer of ESRP Section 3.5 will compare the calculated maximum individual and population doses determined*

*in ESRP Section 5.4.2 to the design objective guidelines in 10 CFR Part 50, Appendix I. If the PPE approach is used in an ESP application, a COL applicant referencing that ESP will need to provide a detailed description of the liquid and gaseous radioactive waste management and effluent control system at the COL stage.*

11. ESRP 3.8, Transportation of Radioactive Materials – Generic industry and NRC discussion of this topic (ESP-8) is expected to establish a bounding approach for addressing fuel cycle and transportation impacts in ESP applications. RS-002 should be modified and interim guidance/training should be provided for NRC reviewers to reflect the outcome of these generic industry and NRC interactions.

*Staff response: The NRC staff is aware of the issues under discussion with NEI regarding fuel cycle and transportation impacts. The NRC staff plans to respond to NEI's letter dated May 7, 2003, concerning NEI Task Force Issue ESP-8. The staff's letter will be referenced in Attachment 3 to RS-002.*

12. ESRP 4.4.3, Environmental Justice Impacts -- See comment J.6 on ESRP 2.5.4.

*Staff response: See NRC staff response to comment J.6.*

13. ESRP 5.3.2.1, (Discharge System) Thermal Description and Physical Impacts
  - a. In general, the environmental impact of the bounding cooling water concept (as proposed in the ESP application) must be evaluated by the applicant. This section is largely applicable in describing the approach to this review. Maximum expected flow rates for the proposed cooling system discharge method would be established along with maximum estimated temperatures in the receiving water body, as well as an assessment of the thermal plume's bounding impact to the receiving water body. However, as with other sections, some qualifications to distinguish the ESP review are considered appropriate. For Example:
    - (i) Data and Information Needs seeks "detailed drawings" of the discharge structures and discharge flow rates and temperatures as a "function of operating conditions." Per comments above, such detailed design and operational information would not be available at the ESP stage. However, as discussed above, certain types of information will be available and used in the ESP application. This information will be sufficient for making a determination on site suitability at the ESP stage review.

*Staff response: The staff does not anticipate that detailed drawings will be submitted with ESP applications following the PPE format. An applicant, however, may wish to provide more detailed information with the objective of achieving additional issue resolution and finality at the ESP stage.*

14. ESRP 5.4, Radiological Impacts of Normal Operation - See Comment 10.a, above.

*Staff response: The staff will review the typical pathways identified in an ESP applicant's ER for reasonableness using ESRP Section 5.4.1. Using effluent release source terms provided by the applicant, based either on a specific plant design or the PPE approach, the staff will independently evaluate maximum individual doses and total collective doses to the population and compare them to any calculations provided by the applicant in the ER using ESRP Section 5.4.2. These doses will then be compared to the design objective guidelines in 10 CFR Part 50, Appendix I. Finally, as part of ESRP Section 5.4.3, the NRC will evaluate whether the estimated maximum individual dose for all pathways (including direct radiation) for all units on the site are within the limits found in 40 CFR Part 190 as referenced in 10 CFR 20.1301(d).*

15. ESRP 5.7, Uranium Fuel Cycle Impacts –Generic industry and NRC discussion of this topic (ESP-8) is expected to establish a bounding approach for addressing fuel cycle and transportation impacts in ESP applications. RS-002 should be modified and interim guidance/training should be provided for NRC reviewers to reflect the outcome of these generic industry—NRC interactions.

*Staff response: See NRC staff response to NEI comment J.11.*

16. ESRP 5.8.3, Environmental Justice Impacts -- See comment J.6 on ESRP 2.5.4.

*Staff response: See NRC staff response to NEI comment J.6.*

17. ESRP 7.2, Severe Accidents – As written, this section requires specific information and interface that cannot be provided until a specific design is selected. The outcome of generic industry—NRC discussion of this topic (ESP-12) is expected to establish an option for ESP applications in lieu of ESRP requested design dependent evaluations. RS-002 should be modified to reflect the outcome of generic industry—NRC interactions on ESP-12, and appropriate interim guidance and training should be provided to the NRC staff to support pilot ESP application reviews.

*Staff response: The NRC staff and its contractor staff tasked to perform the environmental reviews for the ESP applications are aware of the interactions between NRC and NEI on severe accidents. The staff expects to use the guidance provided in the ESRP and the staff's letter dated February 12, 2003 (Subject: Resolution of Early Site Permit Topic 12 (ESP-12), NEPA Consideration of Severe Accident Issues) for its environmental evaluation of severe accidents. The staff also plans to respond to NEI's additional letter on this subject dated April 28, 2003. Attachment 3 to RS-002 will reference both staff response letters.*

18. ESRP 7.4, Transportation Accidents – Generic industry and NRC discussion of this topic (ESP-8) is expected to establish a bounding approach for addressing fuel cycle and transportation impacts in ESP applications. RS-002 should be modified and interim guidance/training should be provided for NRC reviewers to reflect the outcome of these generic industry—NRC interactions.

*Staff response: See NRC staff response to NEI comment J.11.*

19. Section 9.1: This section addresses the “no action” alternative. Section I of this ESRP, Areas of Review, states “The scope of the review directed by this plan

includes a determination of the forecast energy consequences if the project is not completed. The depth and extent of the input to the environmental impact statement (EIS) should include a description of the alternative and the expected results from taking no action. In performing this review, the reviewer may rely on the analysis in the applicant's ER and/or State or regional authorities' analyses concerning the need for power and energy supply alternatives. The reviewer should ensure that the analysis of the need for power and alternatives is reasonable and meets high quality standards." Further the "Data and Information Needs" section indicates that this review is dependent on the "need for power" analyses that have been identified as not applicable to the ESP application review. Thus, this alternative is directly related to the "need for power" which 10 CFR 52.17(a)(2) clearly indicates is not required at the ESP stage. NEI recommends that the review standard be modified to indicate that ESRP Section 9.1 is, like Section 8 on Need for Power, not applicable guidance for review of ESP applications.

*Staff response: Analysis of the no action alternative is required for all NRC environmental impact statements [10 CFR Part 51, Subpart A, Appendix A(4)]. An important element of the no action alternative analysis for a proposed new nuclear power plant is the need for power, as discussed in ESRP Section 9.1. However, an applicant for an ESP need not include a need for power analysis in its environmental report [10 CFR 52.17(a)(2)]. Additionally, an EIS prepared by the NRC as part of its review of an ESP application need not include an assessment of the benefits (e.g., need for power) of the proposed action [10 CFR 52.18; 10 CFR 52.21]. Therefore, the NRC has reached the following conclusions:*

- *ESRP Section 9.1 is applicable guidance for review of an ESP application because the no action alternative must be considered in the EIS prepared as part of the review of the application.*
- *In accordance with the requirements of 10 CFR 52.18 and 10 CFR 52.21, the portions of ESRP Section 9.1 dealing with the need for power are applicable to the review of an ESP application only in those cases in which an applicant elects to include the information for consideration at the time of the ESP review.*

*The staff will revise Attachment 3 to RS-002 to reflect this position.*

20. Section 9.2: See Attachment 2, "Industry White Paper on Why Evaluation of Alternate Energy Sources Should Not Be Required for ESP."

*Staff response: By letters dated June 2, 2003, the NRC staff informed prospective ESP applicants that the Commission has determined that an ESP applicant need not include an assessment of alternative energy sources in its ER. The NRC's position on this issue will be articulated in an upcoming proposed rulemaking. The staff will modify Attachment 3 to RS-002 to reflect this Commission direction.*

21. Section 9.3 – Interim guidance and training should be provided to NRC staff reviewers regarding review of ESP applicant evaluations of alternative sites. In this regard, we agree in part and disagree in part with the conclusions in the

staff's March 7 letter to NEI on generic topic ESP-18A, Alternative Site reviews for ESP. In particular,

- The pilot ESP applicants and other companies seeking ESPs at existing nuclear sites will provide for NRC review an evaluation of other existing nuclear sites within the region of interest defined by the applicant. As indicated in the staff's letter, this is consistent with NEPA case law indicating that "a federal agency, acting on a private entity's permitting request, may limit its review of alternatives with due regard for the proposal before it."
- However, we do not agree with the NRC staff view in its March 7 letter that the applicant is obligated to "demonstrate, in its environmental report, that its bases for limiting its alternative site analysis are reasonable." NEPA case law already provides the basis for limiting the consideration of alternative sites to other existing nuclear sites in the region of interest. Likewise, we do not agree that the applicant "must demonstrate the reasonableness of confining the region of interest."

NEPA requires only that the NRC make a determination, based on the evaluations presented in the ER, as to whether the applicant's conclusion is reasonable (or not unreasonable), i.e., that there is no obviously superior site within the applicant's region of interest to the one proposed in the ESP application.

We believe the principles outlined above are consistent with the NRC's obligations under NEPA and should form the basis for interim guidance and training to be provided the NRC staff concerning alternative site reviews for ESP.

*Staff response: The NRC staff and its contractor staff tasked to perform the environmental reviews for the ESP applications are aware of the interactions between NRC and NEI on evaluation of alternative sites. The staff notes NEI's disagreement with its March 7, 2003 position letter. The staff expects to be able to use the guidance provided in the ESRP and in the NRC letter dated March 7, 2003 for its environmental evaluation of alternative site reviews. The staff will reference the NRC letter in Attachment 3 to RS-002.*

22. Section 9.4: Alternative plant systems are more appropriately deferred until the COL stage, because the discussion depends on 1) the selection of a vendor design, and 2) the design of individual components of the system. At the ESP stage, it is unlikely that a design will have been selected, and 10 CFR 52.17 allows a discussion of design parameters.

*Staff response: ESRP Section 9.4.1 calls for a review of alternative heat dissipation systems considered feasible for the proposed plant site. ESRP Section 9.4.2 calls for review of alternative circulating water systems considered feasible for the proposed plant site. In accordance with 10 CFR 52.17(a)(1)(v), an ESP application should describe the type of cooling systems, intakes, and outflows that may be associated with each facility. For ESP applications that do not specify a facility type, the applicant should specify postulated design parameters or appropriate PPE information. The staff will conduct the alternatives analyses called for in ESRP Sections 9.4.1 and 9.4.2 using the preceding information in the application. To the*

*extent the information is not provided, the staff will develop a reasonable set of assumptions that will be used for the analyses called for in ESRP Sections 9.4.1 and 9.4.2.*

*ESRP Section 9.4.3 calls for review of alternative corridor routes and alternatives to proposed system design, construction, and maintenance practices. See response to comment J.3 for further information.*