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March 31, 2003

VIA – E-MAIL (esprs@nrc.gov) and
FIRST CLASS MAIL

Director, New Reactor Licensing Project Office
Office of Nuclear Reactor Regulation
Mail Stop O-4D9A
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: Exelon Comments on U. S. NRC Draft Review Standard for Early Site Permit Applications, RS-002

References:

(1) Notice of Availability of Draft Review Standard for Early Site Permit Applications, 68 FR 1, January 2, 2003
(2) U.S. NRC Draft Review Standard for Early Site Permit Applications, RS-002

Dear Sir or Madam:

Through the publication of reference (1), the U.S. NRC identified the availability for interim use and requested public comment on the draft document identified in reference (2) (hereinafter referred to as "RS-002").

As the NRC is aware, Exelon Generation Company, LLC, ("EGC") is a participant in a Nuclear Energy Institute ("NEI") task force, which has been interacting with the NRC staff over the past year to resolve generic issues associated with the preparation of an ESP application. EGC has worked with the NEI task force in its preparation of comments on RS-002 with said comments having been provided to the NRC by NEI under separate cover. A copy of NEI's comments is enclosed herewith for your convenience. EGC fully endorses NEI's comments on RS-002.

In addition to its endorsement of the NEI comments on RS-002, EGC desires to reinforce one point made by NEI in its commentary on RS-002. The NRC has advised that it does not intend to finalize RS-002, including the incorporation of information learned through the NRC interactions with the NEI task force, until well after the June 2003 date that EGC indicated it would submit its ESP application. Accordingly, EGC requests that in the period between its ESP application submittal and finalization of RS-002, the NRC prepare and issue to individual NRC ESP application reviewers specific interim guidance reflective of the understandings developed between the NRC and the NEI task force.

EGC appreciates the opportunity to submit comments on RS-002 and commends the NRC's efforts to promote the efficacy of ESP application review. If you have any questions or concerns regarding the foregoing, please contact me.

Sincerely,

Marilyn C. Kray
Vice President, Project Development

Enclosure

cc: James Lyons, Office of Nuclear Reactor Regulation
Michael Scott, Office of Nuclear Reactor Regulation / NRLPO

NUCLEAR ENERGY INSTITUTE

Dr. Ronald L. Simard
SENIOR Director, NEW PLANT DEPLOYMENT
NUCLEAR GENERATION DIVISION

March 31, 2003

Mr. James E. Lyons
Director, New Reactor Licensing Project Office
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: Industry Comments on Draft ESP Review Standard (RS-002)

PROJECT NUMBER: 689

Dear Mr. Lyons:

We appreciate the NRC staff efforts to develop guidance for review of ESP applications, and the opportunity to provide input to the process. The enclosure provides industry comments for NRC staff consideration on the sections of the staff's Draft ESP Review Standard (RS-002) that were made available on
December 26, 2002.

In parallel with NRC staff development of RS-002, we have met regularly since April 2002 to discuss generic issues associated with ESP applications and reviews. We note that several important issues affecting the information to be provided in ESP applications and the focus of NRC staff reviews were not resolved prior to issuance of the draft ESP Review Standard. Some remain under discussion at this time, including NEPA review of severe accident impacts, fuel cycle impacts and radiological consequence analyses appropriate for ESP.

Moreover, we understand that RS-002 will not be finalized and re-issued until the end of 2003, well after the expected submittal of the first three ESP applications by Exelon, Entergy and Dominion. As we have emphasized in our public meetings, the

situation underscores the importance that NRC reviewers are provided adequate interim guidance and training to support efficient review of ESP applications, particularly with respect to use of the plant parameters envelope approach. This interim guidance and training would be expected to reflect the understandings and expectations documented on various topics via our exchange of ESP issue resolution letters.

The staff's mark-up of the Standard Review Plan (NUREG-0800) is expected to be particularly helpful in clarifying the focus of NRC staff safety review in the Early Site Permit context. However, we remain concerned that similar mark-ups of existing Environmental SRP (NUREG-1555) guidance will not be provided to bridge the significant disconnect between the ESRP and the Part 52/ESP context. Of particular concern is the numerous ESRP acceptance criteria related to the design of structures, systems, and components (SSCs). Guidance to NRC staff reviewers must clearly identify a focus for ESP on evaluation of the environmental impacts, and not on review and approval of SSC design information.

Several sections of the draft ESP Review Standard have not yet been released for stakeholder comment. These include draft sections on quality assurance, emergency planning, security, site missiles and aircraft hazards, and design basis accident radiological consequence analyses. The industry will provide separate comments on those sections. We request that they be completed and released as quickly as possible to support finalization of applicant submittals.

If you have any questions about the enclosed comments on draft RS-002, please contact me (202-739-8128 or rls@nei.org) or Russ Bell (202-739-8087 or rjb@nei.org).

Sincerely,

Original Signed By:

Ronald L. Simard

Enclosure

c: Ronaldo V. Jenkins, NRC/NRR
NRC Document Control Desk

Enclosure

INDUSTRY COMMENTS ON DRAFT ESP REVIEW STANDARD RS-002

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.

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.

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.

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.

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.

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.

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.

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."

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.

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.

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)).

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.

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.

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.

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.

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?

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

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

H. Attachment 4 (SER template for ESP Applications)

1. See comment D.3, above.

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).

3. Other General Comments

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

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

Enclosure

INDUSTRY COMMENTS ON DRAFT ESP REVIEW STANDARD RS-002

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.

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

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.

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).

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.

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.

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.

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.

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.)*

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.

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).

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.

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.

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."

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.

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.

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.

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."

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.

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/in2) at the rate of 8.3 kPa/sec (1.20 lbf/in2/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).

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.

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.

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 superceded when an applicant uses AST and TEDE. The Regulatory Guide listings and discussions should be updated to incorporate AST guidance.

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.

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.

26. SRP 2.3.4 Section II, Acceptance Criteria, item 2, the 2nd 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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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).

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^3/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).

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).

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

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.

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.

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

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

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

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

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.

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.

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."

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

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.

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.

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

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).

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.

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.

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.

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..

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.*"

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.

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.

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.

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.

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.

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.

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

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.

J. **Comments on the NRC selection of applicable ESRP sections of NUREG-1555.** [Note that the items presented in this section are based on a limited review and are not intended to be fully comprehensive. The NRC staff should utilize the information contained in this section to spur further thought, changes and interim guidance/training for NRC reviewers consistent with the concepts presented.]

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

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

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.

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

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.

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

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.

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.

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.

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

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.

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.

Attachment 1 to Industry Comments on Draft ESP RS-002

Industry Comments on IMC-2501 - Nuclear Reactor Inspection Guidance, ESP Phase (10/08/02)

Per the NRC staff's request during our Jan. 29, 2003, public meeting, we are providing specific comments on IMC-2501 for discussion at our March 5 public meeting and as input to staff revision of the document.

IMC-2501 currently contains a number of statements regarding QA requirements for ESP. We understand that IMC-2501, in particular, Section 2501-05.05, will be revised to reflect the following staff views: (1) that the staff does not hold that ESP applicants are required to have an Appendix B program, (2) that QA program descriptions are not required to be included in ESP applications or reviewed by the NRC, and (3) that Appendix B will be used by NRC staff as a guide for assessing the quality of site safety analysis information.

In revising IMC-2501, we strongly recommend the staff avoid use of the language from its Feb. 3 letter on ESP-3 to the effect that quality controls applied to ESP activities associated with site safety should be "equivalent in substance" to the controls described in Appendix B. This language is at best confusing and at worst in conflict with the staff's position that an Appendix B program is not required for ESP. Prior to the Feb. 3 letter, both we and the NRC staff had used alternative language to describe QA requirements and expectations for ESP. First, in its Dec. 5 position statement, the staff said that they intend to "asses the ESP applicant's QA program to ensure that the appropriate QA elements are in place in order to (1) to establish a baseline for future use during the COL process, and (2) to assess any potential impacts on the staff's findings." In its Feb. 3 letter, the staff clarified that the phrase "'baseline for use' refers to the need for the staff to determine that QA measures applied to information submitted for review at the ESP stage are adequate, such that the staff can accept the use of this information, as embodied in an ESP, in support of a later CP, OL or COL application." The industry agrees with this description. Similarly, the NRC's Feb. 3 letter indicated agreement with the industry's description in our Dec. 20, 2002, ESP-3 resolution letter. Item seven of the NEI letter stated that, "Because of the finality of the issues resolved as part of the ESP process, the staff must have confidence in the site safety analysis information in order to make its conclusions. It is expected that the NRC staff will review the applicant's quality processes and sources of information to develop the necessary confidence in ESP information."

Both of these descriptions have been accepted by both the industry and the NRC, and both are preferable to describe the nature of NRC staff QA reviews of ESP application information. Both the earlier NRC and industry descriptions are clearer and thus preferable to the "equivalent in substance" language in the staff's Feb. 3 letter because the earlier descriptions place the focus of NRC review on the appropriateness of the analysis methodology, data sources and results, not on whether quality processes used are equivalent to those of Appendix B.

Other Comments on IMC-2501

1. Section 2501-01, PURPOSE, states: "...The ESP phase is implemented when the NRC receives formal notification under 10 CFR Part 52 of an applicant's intention to apply for an ESP."

The NRC may not receive formal notification of an applicant's intent to apply for an ESP since there is no requirement for applicants to notify NRC of such intent. It is desirable, a good

practice, policy, etc., but there is no requirement. The ESP phase should begin when the NRC either receives formal notice of intent to apply for an ESP or receives an application.

2. Section 2501-01, PURPOSE, states: "...It continues until the ESP expires after 20 years or a combined operating license or construction permit is issued."

The statement assumes the ESP applicant requests a 20-year ESP. The phrase "after 20 years" should be deleted since the ESP could be for a period as short as 10 years.

3. Section 2501-03, DEFINITIONS, defines "Quality Assurance Program/QA Commitments" in 03.10 as the information required by 10 CFR 50.34(a)(7).

Because a QA program description is not a requirement for ESP, this definition should be revised as follows: The terms QA Program and QA Commitments relate to the quality processes and controls implemented by the ESP applicant.

4. Section 2501-05, item 05.02, states "the application will be reviewed according to 10CFR Part 50 Appendix B, as required by 10CFR Part 52.18."

To be correct, the following should be added to the end of this statement: "if the QA program or description thereof is included in the application and the applicant has committed to using App. B for at least a portion of the application." As discussed above, NRC review in accordance with Appendix B is not a requirement for ESP.

5. Section 2501-05, item 05.03, states "ESP Phase Inspection Guidance, Enclosure 1 to IMC-2501, provides guidance which may be applicable during inspections, audits, or site visits."

None of the guidance documents in Enclosure 1 to IMC-2501 are currently available for review or use. We understand that the referenced guidance are currently being developed and will be available to ESP applicants and the public prior to their first use by the NRC.

6. Section 2501-05, item 05.05.a, states "the applicable criteria of 10 CFR 50 Appendix B are those criteria which can directly relate to the pedigree or genesis of any safety-related or risk-significant structure, system, or component (SSC)."

The stated purpose of Appendix B is to establish "quality assurance requirements for the design, construction, and operation of those structures, systems, and components. The pertinent requirements of this appendix apply to all activities affecting the safety-related functions of those structures, systems, and components; these activities include designing, purchasing, fabricating, handling, shipping, storing, cleaning, erecting, installing, inspecting, testing, operating, maintaining, repairing, refueling, and modifying." The identified guidance inappropriately expands the scope of Appendix B to "risk-significant SSCs" and anything related to the "pedigree or genesis of any safety-related SSC."

7. Section 2501-05, item 05.06, discusses a Limited Work Authorization that might be issued under §50.10(e)(1) and states "This may include extension of previously permitted activities subject to 10 CFR Part 50, Appendix B, such as the continuance of site exploration..."

The indication that site exploration activities are subject to Appendix B is not consistent with the statements in 10 CFR Part 100, 100.23(b) and Appendix A (section II) which indicate the

geological, seismological, and engineering characteristics investigations required by 100.23(c) and Appendix A are "within the scope of investigations permitted by §50.10(c)(1)." The activities permitted by §50.10(c) are identified therein as "other pre-construction monitoring to establish background information related to the suitability of the site or to the protection of environmental values." These activities have not previously been considered to be within the scope of Appendix B activities.

8. We agree with Section 2501-05, item 05.05, where it states: "the quality and pedigree associated with those parts of the ESP application not applicable to Appendix B will be reviewed to recognized industry codes and standards."

Attachment 2 to Industry Comments on Draft ESP RS-002

Industry White Paper on Why Evaluation of Alternate Energy Sources Should Not Be Required for ESP

Background

In carrying out its responsibilities under NEPA with respect to license applications for nuclear plants, NRC review of alternatives has typically included consideration of need for power, alternate energy sources and alternate sites.

For the special case of Early Site Permits, Subpart A of Part 52 clarifies the NRC's implementation of NEPA with respect to consideration of need for power and alternatives to the proposed action. In particular, Section 52.18 states that the EIS "need not include an assessment of the benefits (for example, need for power) of the proposed action, but must include an evaluation of alternative sites."

Discussion

The industry has long understood the meaning of the example in Section 52.18 to include the review of alternative sources of energy, thereby focusing evaluation and review of alternatives on alternate sites – the only type of alternatives evaluation that can be meaningfully performed at ESP.

The rulemaking record provides no insight with respect to the Commission's intent when it approved the language of Section 52.18. Presumably, the Commission recognized that consideration of need for power would not be appropriate or meaningful at time of ESP because an ESP application does not involve or imply an intent or commitment to actually build a nuclear plant, i.e., need for power is not a prerequisite for ESP. Indeed, it is possible that the ESP may never be exercised in a COL application to build a actual nuclear plant. The object of an ESP is to establish the suitability of a site for a future nuclear plant that might be built when and if a need for power is identified and market conditions are conducive.

Moreover, it is likely that the Commission recognized that any evaluation and review of need for power at ESP would be highly speculative given the difficulty in forecasting the market for electricity over the 10 to 20-year term of an ESP, which is also renewable for another 20 years. Accordingly, we believe that Part 52 reflects this logic by eliminating the "need for power" review for an ESP.

While Section 52.18 does not explicitly address the NRC staff's traditional evaluation of alternate energy sources, logic and sound policy reasons lead to the same conclusion: that ESP applications need not and should not include evaluations of alternate sources. ESPs do not imply a commitment to build a nuclear plant or any other kind of plant. An ESP merely provides the option to build a nuclear plant when the decision to build new generating capacity is made. Possible alternative source evaluations provide no useful information in determining if the proposed site is suitable for a nuclear power plant.

Moreover, NEPA requires only consideration of alternatives that are consistent with the business purpose of an applicant – in this case, an ESP applicant – to establish the suitability of a site for a future nuclear plant. Thus, ESP applicants should not be required to evaluate the relative merits of other generating sources in terms of national policy, commercial viability, environmental impact, etc., as specified in Environmental SRP 9.2.

Furthermore, ESRP 9.2 reflects the inextricable link of alternative sources with a need for power. In particular,

- ESRP 9.2.1 calls for review of "projected demand for electrical energy identified in ESRP 8.4" and "analyses concerning the need for power and energy supply"

- ESRP Section 9.2.2 requires consideration of alternatives "that could reasonably be expected to meet the demand...."

Because of the link between consideration of generation alternatives and need for power, it is impossible to do a meaningful evaluation of generation alternatives in the absence of the context provided by a specific need for power. Just as ESP applicants are not required to address a need for power, they should not be required to evaluate generation alternatives.

Moreover, any evaluation of alternate energy sources that could be conducted at the time of an ESP application would be highly remote and speculative, because the relative merits of existing technologies are subject to significant change over the 20-year term of an ESP, and new technologies can be expected to become viable over that time. Likely, but unpredictable changes in national policy, economics and technology over the term of the ESP make it likely that any evaluation of alternative energy sources performed for ESP would quickly be rendered irrelevant.[1]

Summary and Recommendation

As discussed above, for the same reasons evaluation and review of need for power is not required for ESP, logic and policy reasons dictate that ESP applicants should not be required to perform, and the NRC should not expend resources to review, evaluations of alternate energy sources. We believe this view is consistent with the intent of the Commission. Moreover, because of the exemplary structure ("for example, need for power") of Section 52.18, we believe that this interpretation may and should be immediately adopted by the NRC for purposes of forthcoming ESP applications. While this interpretation is consistent with existing requirements, the NRC may wish to propose appropriate clarification of Section 52.18, in this regard as part of the forthcoming Part 52 update rulemaking.

[1] NEI petitioned the NRC in July 2001 to eliminate the requirement for applicants to evaluate and for NRC to review need for power and alternative energy sources in future ESP, CP and COL proceeding (PRM-52-2). Chairman Meserve had previously advised Congress that these matters are "distant from the NRC's mission." No rule change is necessary to adopt the interpretation that ESP applications are not required to address alternate energy sources, just as they are not required to address need for power.