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NUCLEAR ENERGY INSTITUTE

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Ms. Cindy K. Bladey  
Office of Administration  
Mail Stop: O12-H08  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

**Subject:** Industry Comments on draft Revision 1 of NUREG-0800 Section 2.0, *Site Characteristics and Site Parameters* [Docket ID NRC-2015-0131]

**Project Number: 689**

Dear Ms. Bladey:

On behalf of the nuclear energy industry, the Nuclear Energy Institute (NEI)<sup>1</sup> is providing comments on draft Revision 1 of NUREG-0800 Section 2.0, *Site Characteristics and Site Parameters* [Docket ID NRC-2015-0131].

We appreciate this effort by the NRC to update Section 2.0 of NUREG-0800, *Site Characteristics and Site Parameters* to reflect current staff review methods and practices based on lessons learned from NRC reviews of early site permit, design certification and combined license applications completed since the last revision of this section. In our attached comments, we identify a few areas where the guidance can be further enhanced to clarify definitions, acceptance criteria and the NRC's review of site parameters and site characteristics.

<sup>1</sup> NEI is the organization responsible for establishing unified nuclear industry policy on matters affecting the nuclear energy industry, including the regulatory aspects of generic operational and technical issues. NEI's members include all utilities licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect/engineering firms, fuel fabrication facilities, materials licensees, and other organizations and individuals involved in the nuclear energy industry.

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If you have any questions or require additional information, please contact Marc Nichol (202-739-8131; mrn@nei.org) or me.

Sincerely,

A handwritten signature in black ink, appearing to read "RJB", with a horizontal line extending to the right.

Russell J. Bell

Attachment

c: Mr. Michael E. Mayfield, NRO/DARR, NRC  
Mr. Joseph Colaccino, NRO/DARR/NRGB, NRC  
Mr. Lawrence J. Burkhart, NRO/DNRL/LB4, NRC  
Mr. Mark D. Notich, NRO/DARR/NRGB, NRC  
NRC Document Control Desk

**Industry Comments on draft Revision 1 to *Site Characteristics and Site Parameters*  
[Docket ID NRC-2015-0131]**

<b>Comment #</b>	<b>Location</b>	<b>Comment</b>
1	General	The revision includes the use of parenthetical clarifications“(i.e., is bounded by)” in several locations to provide clarity on the term “falls within” and associated variations on this term (e.g., “does not fall within”.) However, in numerous instances (as identified in specific comments below) the parenthetical clarification is incorrect or missing. We recommend the NRC reassess the need to use parenthetical clarifications, and if they are retained to ensure they are consistently and accurately used. As an alternative, SRP Section 2.0 could define in the beginning of the guidance the meaning of “falls within” and avoid needing to use parenthetical clarifications each time the terms are used. Such a definition could also provide additional clarity that would not be practical to include in each use of a parenthetical clarification. For example the terms could be defined as follows: “Falls within means that the characteristic is bounded by the parameter to which it is being compared. For parameters that are described as a maximum value, the characteristic is bounded by the parameter if it is less than or equal to the parameter. For parameters that are described as a minimum value, the characteristic is bounded by the parameter if it is greater than or equal to the parameter. For parameters that are described as a range, the characteristic is bounded by the parameter if it is greater than or equal to the lower range value and less than or equal to the upper range value. Does not fall within means that the characteristic is not bounded by the parameter.”
2	p. 2.0-2, Section I, first paragraph, last sentence	The word “grant” should be plural “grants”.
3	p. 2.0-2, Section I, second paragraph, third sentence	The following parenthetical statement “(as well as any additional site characteristics developed in support of the COL application that were not in the ESP)”does not appear in 10 CFR 52.79(b)(1), as is cited earlier in the sentence. Since the parenthetical statement is not based on 52.79(b)(1), it should either be deleted from this sentence or a regulatory basis for it should be provided.
4	p. 2.0-3, Section I.3.a, second sentence	It appears that a few words are missing and the sentence should be revised to state “... parameters are reviewed <u>to the level of detail needed</u> ...”
5	p. 2.0-3, Section	The parenthetical “(i.e., bounds)” should be “(i.e., is bounded by),”

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	I.3.b, last sentence	consistent with the meaning of "falls within."
6	Page 2.0-3; I.2, Footnote 1	The footnote should include Appendix E, which is the ESBWR design certification. This change should be made to make the footnote agree with the design certifications in the regulations when the SRP section is revised. Change "Appendices A through D" to "Appendices A through E."
7	p. 2.0-4, Section I.3.d	In two instances, the use of "i.e.," should include a comma.
8	p. 2.0-5, SRP Acceptance Criteria, first paragraph, first sentence	The double use of acceptable/acceptance is unnecessary and confusing. The word "acceptable" should be deleted so that the sentence reads, "Specific SRP acceptance criteria acceptable-to meet ..."
9	p. 2.0-5, SRP Acceptance Criteria, 2, first sentence, item (b)	The criteria for the COL applicant to demonstrate that the design of the facility falls within "(b) any additional site characteristics specified in the COL application" is not clear. As mentioned in Comment #3 above, SRP Section 2.0 has not provided the regulatory basis for this criterion. This sentence should be modified as necessary to reflect the resolution of comment #3.
10	p. 2.0-5, Section II, SRP Acceptance Criteria, 2, first sentence	The parenthetical "(i.e., bounds)" should be "(i.e., is bounded by)," consistent with the meaning of "falls within."
11	p. 2.0-4, Section II, Requirements, 4, last sentence	The phrase "(i.e., is bounded by)" should be included after the use of "falls within."
12	p. 2.0-5, Section II, SRP Acceptance Criteria, 2, second sentence	The phrase "(i.e., is bounded by)" should be included after the use of "falls within."
13	p. 2.0-5, Section II, SRP Acceptance Criteria, 3, last	The phrase "(i.e., are not bounded by)" should be included after the use of "do not fall within."

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<b>Comment #</b>	<b>Location</b>	<b>Comment</b>
	sentence	
14	p. 2.0-5, Section II, SRP Acceptance Criteria, 4, first sentence	In two instances, the use of "i.e.," should include a comma.
15	p. 2.0-5, Section II, SRP Acceptance Criteria, 4, second sentence	In order to be consistent with the first sentence in the same paragraph, the second sentence should be replaced with the following, "If the actual site characteristics presented in the ESP and COL do not fall within the postulated site parameters in the DC, or the actual design characteristics specified in the DC do not fall within the postulated design parameters specified in the ESP, the COL applicant must provide sufficient justification (e.g., by requesting an exemption from or amendment to the DC, or requesting a variance from the ESP) that the proposed facility is acceptable at the proposed site."
16	p. 2.0-5, Section II, SRP Acceptance Criteria, 4, last sentence	The phrase "(i.e., are not bounded by)" should be included after the use of "do not fall within."
17	p. 2.0-6, Section III, 1, second sentence	It is not clear to which appendix the following text is referring "... (SER); this appendix will also be included in the ESP." If the appendix being referred to is providing the same information discussed in the first sentence of this section, then delete the end of the second sentence, as it is redundant to the first sentence. If the referenced appendix is not providing the same information as indicated in the first sentence, then reword so that it is clear what information is expected to be provided.
18	p. 2.0-6, Section III, 3, first paragraph, first sentence	The parenthetical "(i.e., bounds)" should be "(i.e., is bounded by)," consistent with the meaning of "falls within."
19	p. 2.0-6, Section III, 3, first paragraph, first sentence (carried over to p. 2.0-7)	The criteria for the COL applicant to demonstrate that the design of the facility falls within "any additional site characteristics specified in the COL application" is not clear. As mentioned in Comment #3 above, SRP Section 2.0 has not provided the regulatory basis for this criterion. This sentence should be modified as necessary to reflect the resolution of comment #3.

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<b>Comment #</b>	<b>Location</b>	<b>Comment</b>
20	p. 2.0-7, Section III, 3, first paragraph, last sentence	The phrase "(i.e., are not bounded by)" should be included after the use of "do not fall within."
21	p. 2.0-7, Section III, 3, second paragraph, last sentence	The phrase "(i.e., are not bounded by)" should be included after the use of "do not fall within."
22	p. 2.0-7, Section III, 3, third paragraph, first sentence	In two instances, the use of "i.e.," should include a comma.
23	p. 2.0-7, Section III, 3, third paragraph, second sentence	In order to be consistent with the first sentence in the same paragraph, the second sentence should be replaced with the following, "If the actual site characteristics presented in the ESP and COL do not fall within the postulated site parameters in the DC, or the actual design characteristics specified in the DC do not fall within the postulated design parameters specified in the ESP, the COL applicant must provide sufficient justification (e.g., by requesting an exemption from or amendment to the DC, or requesting a variance from the ESP) that the proposed facility is acceptable at the proposed site." This is related to comment #15.
24	p. 2.0-7, Section III, 3, third paragraph, last sentence	The phrase "(i.e., are not bounded by)" should be included after the use of "do not fall within."
25	p. 2.0-7, Section III, 3, fourth paragraph	The paragraph is a long sentence, and it is difficult to understand to which document the last phrase is associated "...and include the necessary information for the staff to confirm that the conditions of the ESP and COL action items have been met." Please clarify which document should contain this necessary information (e.g., the ESP and DC SERs, the COL application). Furthermore, the phrase should be revised to more accurately state, "... and include the necessary information for the staff to confirm that the <del>conditions of the ESP</del> <u>conditions</u> and COL action items ...".
26	p. 2.0-8, Section IV, 1,	The statement should be revised as follows for consistency with other parts of SRP Section 2.0: ".....by a summary of the <u>actual</u>

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Comment #	Location	Comment
	first sentence	site characteristics and <u>postulated</u> design parameters to be included in any ESP..."
27	p. 2.0-9, Section IV, 3, a, first sentence	The parenthetical "(i.e., bounds)" should be "(i.e., is bounded by)," consistent with the meaning of "falls within."
28	p. 2.0-9, Section IV, 3, a, last sentence	The phrase "(i.e., is bounded by)" should be included after the use of "falls within."
29	p. 2.0-9, Section IV, 3, a, second paragraph	The parenthetical "(i.e., does not bound)" should be "(i.e., is not bounded by)," consistent with the meaning of "does not fall within."
30	p. 2.0-9, Section IV, 3, a, third paragraph, first sentence	The parenthetical "(i.e., bounds)" should be "(i.e., is bounded by)," consistent with the meaning of "falls within."
31	p. 2.0-9, Section IV. 3. b, third paragraph, last sentence	The phrase "(i.e., are bounded by)" should be included after the use of "fall within."
32	p. 2.0-9, Section IV, 3, b, first and third paragraphs, last sentences of each paragraph	The word "meets" should be singular "meet", and should read, "and thus meet the requirements of 10 CFR 52.79(d)(1)."
33	p. 2.0-10, Section IV, 3, c, first paragraph, last sentence	The phrase "(i.e., are bounded by)" should be included after the use of "fall within."
34	p. 2.0-10, Section IV. 3.c, third paragraph, last sentence	The phrase "(i.e., are bounded by)" should be included after the use of "fall within."
35	p. 2.0-11, Section VI	Delete commas from the end of references 1, 6, 7, and 9. Delete quote from end of reference 6. Add closed parenthesis to end of reference 8.
36	p. 2.0-13, Table 1, Outer Boundary of	The reference to Footnote 3 appears to be a typographical error. Footnote 3 is related to the scope of external hazards in a DC. It is noted that a similar entry on "Exclusion Area Boundary (EAB)" has a

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	Low Population Zone (LPZ)	reference to Footnote 2, which is related to the distances to the EAB and LPZ. We recommend the NRC evaluate whether Footnote 2 was intended to be referenced in this entry, and if so, change the reference to Footnote from "(3)" to "(2)" in the second row for the Outer Boundary of Low Population Zone (LPZ).
37	p. 2.0-13, Table 1, Meteorological Conditions Resulting in Minimum Water Cooling in the UHS	The reference to Footnote 6 appears to be a typographical error. Footnote 6 is related to the ambient temperatures. It is noted that a similar entry on "Meteorological Conditions Resulting in Maximum Evaporation and (if applicable) Drift Loss of Water from the Ultimate Heat Sink (UHS)" has a reference to Footnote 5, which is related to the UHS. We recommend the NRC evaluate whether Footnote 5 was intended to be referenced in this entry, and if so, change the reference to Footnote from "(6)" to "(5)" in the last row for the Meteorological Conditions Resulting in Minimum Water Cooling in the UHS.
38	p. 2.0-13, Table 1, Note 1	Note 1 should be clarified to indicate that a single site characteristic value that bounds all of the DC site parameter values should be provided. Suggested rewording of Note 1 is: "An ESP application should contain site characteristic values corresponding to all the site parameter values listed in each of the DCs referenced in the ESP application. <u>All of the referenced DC site parameter values should fall within (i.e., be bounded by) the corresponding site characteristic value.</u> "
40	p. 2.0-13, Table 1, Note 3, second sentence	It is unclear how the DC would demonstrate that potential external hazards are not design basis accidents. The DC will discuss fires, explosions, toxic chemicals, gases, etc. stored onsite and should demonstrate that the plant is designed to handle the related fires, explosions, etc. Possible effects on the plant from offsite sources are dealt with in the COLA. Footnote 3 should be revised to clarify that only onsite sources are evaluated in the DC. Make "chemical" plural "chemicals".
41	Page 2.0-13; Table 1, Footnote 6	Footnote 6 is on Page 2.0-13 and, as discussed in comment #38, is not associated with the last row on the table. Also, the references that are associated with Footnote 6 are on Page 2.0-14. Move Footnote 6 to the next page (Page 2.0-14).
42	p. 2.0-13, Table 1, Footnote 5	It is unclear what the term "actively designed plants" means. This could be interpreted to mean designs that contain active systems

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		(e.g., AC powered safety/cooling systems), or it could be interpreted to mean designs that are currently DC applications actively being reviewed by the NRC. This term should be defined and clarified, or replaced with a more commonly understood description.
43	p. 2.0-14, Table 1, Dry-Bulb Temperature, <u>and</u> Wet-Bulb Temperature	The reference to Footnote 7 should be removed as it appears to be a typographical error. Dry and Wet Bulb temperatures are used in establishing heat loads for the design of normal plant heat sink systems, post-accident containment heat removal systems, and plant HVAC systems. Footnote 7 describes the calculation of $\chi/Q$ and appears to be unrelated to the wet and dry bulb temperatures. It is noted that there are two entries related to the accident release of $\chi/Q$ , and we recommend the NRC evaluate whether Footnote 7 was intended to be referenced in these entries, and if so, change the reference to Footnote from "(7)" to "(6)" in two rows: <ul style="list-style-type: none"> <li>• Dry-Bulb Temperature and</li> <li>• Wet-Bulb Temperature (Non-concurrent)</li> </ul>
44	Page 2.0-14; Table 1, Footnote 7	Footnote 7 is on Page 2.0-14, but it does not appear to be associated with a row on Page 2.0-14. The first row of the table on Page 2.0-15 is marked for Footnote "(7)" and fits with the subject matter in Footnote 7 from Page 2.0-14. Relocate Footnote 7 to Page 2.0-15.
45	p. 2.0-15, Table 1, Routine Release of $\chi/Q$ and D/Q Values at Locations of Interest	The reference to Footnote 9 appears to be a typographical error. Footnote 9 is related to the UHS. It is noted that a similar entry on "Routine Release $\chi/Q$ and D/Q Values at Site Boundary" has a reference to Footnote 8, which is related to the release $\chi/Q$ and D/Q site parameter values. We recommend the NRC evaluate whether Footnote 8 was intended to be referenced in this entry, and if so change the reference to Footnote from "(9)" to "(8)" for the Routine Release $\chi/Q$ and D/Q Values at Locations of Interest.
46	p. 2.0-15, Table 1, Footnote 9	Replace "9.25" with "SRP Section 9.2.5".
47	p. 2.0-16, Table 1, Tornado Missile Spectra	This entry should also reference Footnote 13, which is related to the scope of external hazards (including tornado missiles) in the DC. Currently this entry only references Footnote 12. It is noted that both Footnotes 12 and 13 are associated with table entries for "Tornado Missile Spectra" and "Hurricane Missile Spectra."
48	p. 2.0-16, Table 1, Hurricane Missile Spectra	This entry should also reference Footnote 12, which is related to the scope of hurricane missile spectra in the ESP. Currently this entry only references Footnote 13. It is noted that both Footnotes 12 and

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		13 are associated with table entries for "Tornado Missile Spectra" and "Hurricane Missile Spectra."
49	p. 2.0-16, Table 1, Aircraft Hazards on Plant SSCs	We recommend that the NRC evaluate whether Footnote 13 was intended to be referenced in this entry. Footnote 13 is related to the scope of external hazards in the DC, but does not mention aircraft hazards, and thus does not provide any clarity on the applicability to aircraft hazards. If the footnote is applicable to aircraft hazards, then it should be expanded to provide the intended clarity.
50	p. 2.0-16, Table 1, Footnote 13	It is unclear how the DC would demonstrate that potential external hazards are not design basis accidents. The DC will discuss fires, explosions, toxic chemicals, gases, etc. stored onsite and should demonstrate that the plant is designed to handle the related fires, explosions, etc. Possible effects on the plant from offsite sources are dealt with in the COLA. Footnote 3 should be revised to clarify that only onsite sources are evaluated in the DC. Make "chemical" plural "chemicals". This is related to comment #40.
51	p. 2.0-17, Table 2, Footnote 14	Consider renumbering Footnote 14 to Footnote 1 for Table 2.