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2/13/2017  
82 FR 12502

May 31, 2017

Ms. Cindy Bladey  
Office of Administration  
Mail Stop: OWFN-12H08  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

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RULES AND REGULATIONS  
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**Subject:** Comments on Draft Regulatory Guide DG-4026, "Preparation of Environmental Reports for Nuclear Power Stations" (Docket ID NRC-2017-0041)

**Project Number: 689**

Dear Ms. Bladey:

On behalf of the Nuclear Energy Institute's<sup>1</sup> (NEI) members, we appreciate the opportunity to comment on the Nuclear Regulatory Commission's (NRC) draft regulatory guide DG-4026 for the "Preparation of Environmental Reports for Nuclear Power Stations" (Docket ID NRC-2017-0041). The proposed draft is a revision to Regulatory Guide 4.2, Revision 2. The stated purpose of this regulatory guide is to provide guidance to applicants on the acceptable format and content of environmental reports submitted as part of an application for a permit, license, or other authorization to site, construct, and/or operate a new nuclear power plant. The revision incorporates the changes from environmental statutes, 10 CFR Parts 50, 51, and 52, the interim staff guidance from COL/ESP-ISG-026 and COL/ESP-ISG-027, review guidance from NUREG-1555, "Environmental Standard Review Plan", and lessons learned since RG 4.2, Revision 2 was issued in 1976. We appreciate the extension provided for submitting comments and the public meeting held on April 20, 2017, which provided an overview of the changes. The attachment to this letter provides both general and specific comments for NRC consideration. Our overarching concern remains the Need for Power requirements in Chapter 8 and the Cost-Benefit Analysis in Chapter 10.

Need for Power

Compared to the conventional large light water reactors in operation today, the power produced by small modular and advanced reactors can be used for applications other than production of electricity, such as

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

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J. Davis  
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hydrogen production, desalination, and steam production for process heat applications. NRC should not be evaluating business cases and system planning needs of applicants; rather their focus should be on reactor safety and environmental analysis. DG-4026 places an excessive requirement to consider the "need for power", even if that is not the intended benefit of the project. Furthermore, DG-4026 seems to preclude justification of a project exclusively for greenhouse gas reduction, fuel diversity, grid stability, or mission-critical applications by referring to these as "ancillary benefits." The National Environmental Policy Act (NEPA) does not require that an environmental impact statement consider "need for power" explicitly, but rather dictates an evaluation of the project based on a cost-benefit analysis. In light of this information, industry recommends accounting for the use of power for applications other than the production of electricity in the purpose and need statement. Such consideration would be fully compatible with the current regulations and the Commission's continued interest in a need for power analysis, as a need for power analysis need not be limited to electrical power. These changes to DG-4026 would accommodate the need for power analysis for types of commercial nuclear plants beyond a simple electrical power plant.

While the NRC staff has taken previous industry comments<sup>2</sup> relating to COL/ESP-ISG-026 and incorporated those comments in that ISG and DG-4026, NRC's guidance documents, including this draft regulatory guide, are heavily weighted towards the relationship between electric utilities and state public utility commissions. Much of this is due to the limitations in the NRC's regulations relating to need for power. DG-4026 references a denial to a petition for rulemaking (68 FR 55905). However, in that context the Commission stated:

"Thus, at most, the petitioner's argument would call for a supplement to the requirements of 10 CFR part 51 to address nuclear plants built by unregulated, non-electric utility entities, rather than the wholesale elimination of NRC requirements to consider the need for power" (68 FR 55910).

The Commission recognized the potential tension between its regulations and guidance when considering need for power outside regulated markets. Industry continues to believe that further revisions to DG-4026 will likely be necessary to address the following issues:

- Previous industry letters discussed the limitations of analyzing the need for power within a defined service area and the associated need for power analysis. DG-4026 should be expanded to include other scenarios. For example, nuclear power plant generation companies in wholesale markets can contract with utilities with power purchase agreements. In such situations, the resulting service area is a single customer. In the case of a small modular reactor, the owner and operator of the plant could contract with a national lab or military base to purchase power. These situations would satisfy the need for power for those customers but may not fit within the traditional construct of a service area and the need for power analysis that would follow.

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<sup>2</sup> November 14, 2103 letter from Anne Cottingham, NEI, to Cindy Bladey, NRC, "NEI Comments on NRC Draft Interim Staff Guidance ISG-026 and ISG-027" (ML13347B125).

- NRC staff realized that an analysis in wholesale markets should not depend on a deficit of supply of electricity. Therefore, on Page 130 of DG-4026, the NRC staff provided the following guidance for applicants to follow in receiving a favorable "need for power" assessment even without the deficit of supply:
  - Option 1, the market-based or auction analysis, discusses how proposed plants can bid into the markets and, if needed, the market will instruct them to operate. NRC then relates this to "baseload capacity factors." Baseload plants have an economic incentive to bid \$0 into the energy market and take whatever the market provides them because the plant will be operating no matter the situation. This option appears to be created for units operating at the margin, which historically have been natural gas plants. This could be an option for nuclear plants that may want to operate flexibly and at the margins, and not always-on baseload power. This option appears to be in opposition to the economic incentives the energy markets have created. We ask NRC to clarify this option.
  - Option 2, the agreement option, appears to fall apart under the last item "documentary evidence of the agreement between the applicant and the ISO/RTO". Any agreements between the ISO/RTO and plant operator will not be available until the time frame in which the plant is ready to bid into capacity markets. This timeframe may vary from one-to-three years out from the capacity market taking place (e.g., in PJM, a capacity market for 2020 will take place in 2017). A nuclear plant, in the application phase, is ahead of that timeframe. Industry recommends removing this item from the guidance.

#### Cost-Benefit Analysis

NUREG-1555 guides the staff to review internal costs as discussed in Section 10.6.2 of this Draft Regulatory Guide. The financial information expected is overly burdensome and may not be completely calculable by the applicant at the time the Environmental Report is prepared. In fact, years may pass before the applicant will obtain financing. Industry asks staff to provide the regulatory basis for this requirement. Alternately, as part of its safety review under 10 CFR 52.27, 10 CFR 50.33, and Part 50 Appendix C, the NRC reviews the financial qualifications of applicants for Combined Licenses. In April 2015, the NRC staff issued a draft regulatory basis document (ML15111A270) to propose changes to financial qualification requirements from "financially qualified" to "appears to be financially qualified". South Texas Project Units 3 and 4 requested (ML15140A077) and received an exemption (ML16040A174) allowing them to receive their licenses under the proposed new standard. Industry recommends that for the purposes of NRC's NEPA review under 10 CFR Part 51, the information in Section 10.6.2 should be explicitly derived from the safety review under 10 CFR Parts 50 and 52 and no additional burden should be placed upon the applicant beyond what is already reviewed in the Safety Evaluation Report.

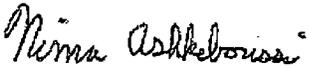
Ms. Cindy Bladey

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Thank you for your consideration of these comments and the comments attached. We look forward to seeing how these comments are addressed in the final guidance. Please contact me if you have any questions.

Sincerely,



Nima Ashkeboussi

Attachment

c: Mr. Robert Taylor, NRO/DSEA, NRC  
Ms. Jennifer Davis, NRO/DSEA, NRC  
Mr. Edward O'Donnell, RES/DE, NRC

**Comments on DG-4026**

| Affected Section | Comment/Basis  | Recommendation  |
|------------------|--|---|
| 1. General       | The draft presents considerable growth in regulatory guidance. For example, the draft is 173 pages. RG 4.2, Rev 2 is 100 pages. NEI 10-07, Rev 1 is 50 pages.  | Areas for consolidation and elimination of redundancy should be identified; including the removal of sections identified in this attachment.  |
| 2. General       | The revision should clearly state the extent to which the guidance in RG 4.2 Supplemental 1, "PREPARATION OF ENVIRONMENTAL REPORTS FOR NUCLEAR POWER PLANT LICENSE RENEWAL APPLICATIONS" is to be retained or incorporated within this document.   | Provide clarification as indicated.   |
| 3. General       | The Purpose statement is that this guidance is specific to applications for a "new nuclear power plant". Clarification is needed as to the implications of siting a new power plant in conjunction with existing (brownfield) facilities, whether nuclear or other industrial type facilities.   | Provide clarification as indicated.   |
| 4. General       | The draft guide, in many locations, refers to a 40-year lifetime for the plants. However, plants are currently being designed and approved for 60-year lifetimes and reviewed for second license renewal out to 80 years.  | Revise to the more general "lifetime" of the plants to provide flexibility for applicants in their permitting and analyses.   |
| 5. General       | The text discusses the applicability of the Guidance to Large Light Water Reactors and Light Water SMRs. The text identifies non-applicability to non-Light Water SMRs, however the text is silent on the subject of non-light water Large reactors.   | Clarify the applicability of this guidance to large non-light water reactors.   |
| 6. General       | In defining terminology and describing the purpose and need statement, only the production of electricity is addressed. Other uses for power (hydrogen production, desalination and steam production for process heat applications) are not provided for in the purpose and need statement. For example, Section 8.0 requires that "The need for power analysis should be limited to the | DG-4026 should allow for the production of thermal power in the form of steam or heat for applications other than electricity generation, particularly in the purpose and need statement. |

| Affected Section                          | Comment/Basis  | Recommendation   |
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|   | discussion of the supply and demand for electricity.”  |  |
| 7. General                                | This extensive RG revision should be reconciled with NUREG-1555, as the agency is undertaking for RG-1.206 and NUREG-0800. Guidance to applicants and the staff should be maintained in lock step to the maximum extent practical.   | No specific revision to the DG.  |
| 8. General                                | A footnote or parenthetical clarification would be useful to indicate that circumstances could dictate variability in certain aspects of this DG, e.g., if an applicant is a federal agency, where NEPA or Executive Order responsibilities might mirror or replace those of other federal agencies, or where the applicant might be exempt from certain regulations or permit requirements. | Annotate DG accordingly.   |
| 9. General                                | Section 2.6.2 includes a discussion of protected information for cultural resources. There are other topics that the staff acknowledges should be protected from inadvertent disclosure (e.g., certain well and drinking water intake information).  | The DG should be updated to reflect the most current information regarding information to be withheld under 10 CFR 2.390.  |
| 10. General                               | It's not clear that NRC performed a Cumulative Impacts Considerations review of DG-4026.   | Describe the NRC's evaluation that the DG avoid unnecessary and cumulative impacts of NRC regulatory actions and process changes and does not represent an expanded scope over current guidance. |
| 11. Section A.<br>INTRODUCTION<br>Purpose | The revision needs to be clear that this guidance only applies to the initial issuance of a permit, license, or other authorization. (ER guidance for license renewal is described in RG 4.2, Supplement 1, Revision 1). Proposed new Appendix C covers aspects of SMR deployments but not non-LWRs and non-electricity use.   | Provide clarification as indicated.  |

| Affected Section   | Comment/Basis  | Recommendation  |
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| 12. Section A.<br>INTRODUCTION<br>Applicable<br>Regulations (1 <sup>st</sup><br>bullet, last sentence) | Some discussion is needed to address potential brownfield applications, whether adding existing electricity production or process heat applications.   | Provide clarification as indicated.   |
| 13. Section A.<br>INTRODUCTION,<br>Related Guidance  | It's not clear that the content of DG-4026 has been revised and updated to make it consistent with the other listed guidance. For example, what if the activities/scope described in RG 4.11 (Terrestrial Environmental Studies for Nuclear Power Stations) go <u>beyond</u> those described here? In that scenario, wouldn't the applicant be subject to unnecessarily duplicative "requirements" (bearing in mind that this is guidance) and inconsistent expectations re level of detail? | Clarify to what extent the revised DG-4026 is intended to replace or supplement other existing NRC guidance?  |
| 14. Section A.<br>INTRODUCTION,<br>Related Guidance  | RG 4.24, "Aquatic Environmental Studies for Nuclear Power Stations," is not included in the Related Guidance documents.<br><br>NRR Review Standard RS-002, Attachment 3, "ESP Scope and Associated Review Criteria for ER:" is not included.   | Suggest adding as indicated   |
| 15. Section B.<br>DISCUSSION<br>Background   | Two ISG documents are described. It is noted that the ISG are to be subsumed into this revision, yet that has not occurred. (For example, Section 2.7.2.) 79 FR 52373 notes: The NRC staff intends to incorporate the final approved COL/ESP-ISG-026 into the next revision of the Environmental Standard Review Plan and related guidance documents.  | Incorporate the ISG guidance, to the extent the guidance remains valid, within this revision to RG 4.2        |
| 16. Section B.<br>DISCUSSION<br>Background   | The last sentence includes "climate change" with guidance included in Section 2. The last sentence in Section 2.7.1 mentions the "latest U.S. Global Change Research Program Report" as guidance yet does not draw in any applicable guidance from the Research Program Report.  | Clarify the NRC's participation in that activity and what guidance an applicant should infer from the report. |

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| <p>17. Section B<br/> Harmonization with<br/> International Codes<br/> and Standards</p> | <p>To what extent do the international codes and standards alter NRC policy, regulation, or guidance? Is it NRC's policy to harmonize with these standards? Historically this has not been the case. General statement as made on Pg. 11 (i.e., "[u]se of this RG would, in general, be consistent with the principles and basic aspects of environmental impact assessment described in the IAEA Technical Reports Series and Safety Guides on health and environmental impacts and site evaluation.") are not very compelling.</p>  | <p>Clarify extent to which this DG is informed by non-NRC-endorsed codes and standards and/or the extent to which this DG is intended to indicate conformance with IAEA or other non-US requirements.</p> |
| <p>18. Section B<br/> Documents<br/> Discussed in Staff<br/> Regulatory Guidance</p>     | <p>"This RG addresses, in part, the use of one or more codes or standards developed by external organizations, and other third-party guidance documents. These codes, standards and third-party guidance DG-4026, Page 12 documents may contain references to other codes, standards or third-party guidance documents ("secondary references"). If a secondary reference has itself been incorporated by reference into NRC regulations as a requirement, then applicants must comply with that standard as set forth in the regulation. If the secondary reference has been endorsed in an RG as an acceptable approach for meeting an NRC requirement, then the standard constitutes a method acceptable to the NRC staff for meeting that regulatory requirement as described in the specific RG."</p> <p>10 CFR 51 is a procedural rule. Asserting that a code or standard invoked in this RG constitutes a compliance obligation for all aspects of that and secondary codes and standards does not seem appropriate.</p> | <p>Assess this language for whether it is appropriate for this DG.</p>  |

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| 19. Section C.I. Summary  | Standard Design Approvals and Manufacturing Licenses should also be discussed; this comment also affects Appendix A.  | Include as indicated   |
| 20. Section C.I. Summary  | <p>Clarify that "station" may not include collocated facilities within the site. This is contrary to statement that "existing or proposed facilities not associated with the production of electricity are considered part of the station."</p> <p>Also clarify distinction between "station" and "plant."</p> <p>Also, see other comments regarding "production of electricity" as the presumed purpose for a plant, i.e. address definitional implications of co-location (for example, with industrial facilities) for process heat use.</p> | Clarify as indicated   |
| 21. Section, C.I. Summary | Under "PLANT," the term "unit" is mis-defined.  | Delete "Generally, unit is used only when the applicant is proposing a multi-unit plant for large light water reactors." |

| Affected Section                                   | Comment/Basis   | Recommendation  |
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| 22. Section C.I "UNIT",<br>Page 18                 | <p>The definition of "unit" should be expanded to address modular SMRs and advanced non-LWRs. Furthermore, alignment should be achieved between all of the sections. For example:</p> <p>Section 3.3, "Building Activities" uses "module assembly" when describing construction/assembly of "pieces" to be installed as an integral piece. This is consistent with DG-4026 being large LWR-centric in scope.</p> <p>Section 4.9, "Radiological Health" paragraph 2 addresses providing estimated annual dose to construction workers in a new unit or "module construction area" as a result from radiation from onsite radiation sources such as existing plant(s). In the first bullet at the end of Section 9 states that "... the ER should include the following:" "the physical layout ... co-located reactor modules ..."</p> <p>Appendix C defines an SMR as a "reactor unit" with nominal output of 300MWe."</p> | Edit as described   |
| 23. Section C.V.<br>Mitigation of Adverse Impacts  | The DG states, "Applicants are required to consider alternatives available for reducing or avoiding any adverse effects as described in 10 CFR 51.45(c)."   | Delete "any." The statement as written overstates the regulatory requirement in 10 CFR 51.45(c).                    |
| 24. Section C.V, first paragraph under the bullets | This paragraph states the applicant "provide the reason why the mitigation measures are considered reasonably foreseeable." There does not appear to be a regulatory basis for this requirement; CEQ regulations do not use "reasonably foreseeable" in the context of mitigating measures. While the examples of what is considered a reasonable mitigation measure are useful, the basis for an obligation to <i>justify</i> why a mitigating measure is reasonable is not clear.   | Delete "The applicant should provide the reason why the mitigation measures are considered reasonably foreseeable." |

| Affected Section   | Comment/Basis  | Recommendation  |
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| 25. Section C.VIII.<br>Presentation of Applicant Information | The use of "in qualified terms" is unclear.  | Clarify or eliminate the term "qualified"   |
| 26. Section C.VIII.<br>Presentation of Applicant Information | <p>The DG requires submittal of "description and documentation of any computer modeling codes that are used to support analyses in sufficient detail to allow the NRC staff to reproduce the model results."</p> <p>The combination of "any" and "reproduce the model results" constitutes an excessive regulatory burden. There is no regulatory basis for the staff to reproduce the results of every model employed, but rather to reproduce results on a sufficient sample basis to reach a reasonable assurance finding. The practice that has evolved where NRC staff request docketed I/O files for a substantial subset of computer codes used in an application represents an undue burden and increases the size of the docketed application, sometimes by tens of thousands of pages.</p> | NRC staff/management should establish clearer guidance for when analytical results must be reproduced by the staff. |

| Affected Section  | Comment/Basis  | Recommendation  |
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| <p>27. Section C.VIII.<br/> Presentation of<br/> Applicant<br/> Information</p> | <p>The DG states:<br/> "Information obtained from publications or other information from the literature should be concisely summarized and documented using references to original data sources. Where the availability of original sources that support important conclusions is limited, the sources should be adequately summarized in the application and should be available for auditing in the applicant's records. In all cases, information derived from published results should be clearly distinguished from information derived from the applicant's field measurements.</p> <p>"The information the NRC uses to conduct and inform its NEPA environmental reviews, including information in the ER, must be publicly available, as appropriate. Therefore, applicants should ensure that the information included in the ER can be made publicly available." In practice, these reasonable requirements have been translated into recent requests by the staff for virtually all references from the application to be filed "on the docket," even for information already publicly available. Review of this information during an audit has not been sufficient. Also, "publicly available" does not mean an applicant is obligated to provide copies for the staff or members of the public (e.g., consensus standards are publicly available, but often require purchase).<br/> Better guidance is needed for applicants and staff to understand what "publicly available" means, and when an applicant is required to "docket" supporting information such as references. Clarification also is warranted regarding making copyrighted or publicly withheld information available to the staff.</p> | <p>Clarify existing language by reinforcing:</p> <ul style="list-style-type: none"> <li>• References and other supporting information are not required to be placed "on the docket," but are appropriate for review in an audit setting.</li> <li>• Copyrighted information is not expected to be submitted by the applicant.</li> <li>• Information not suitable for public disclosure should be withheld pursuant to 10 CFR 2.390.</li> </ul> |

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| 28. Chapter 1, Section 1.2 Purpose and Need                                      | The DG discusses certain alternatives to "baseload electricity," but states inappropriately that "it is the production of electricity that allows the project to be justified in terms of benefits." A nuclear plant that does not produce electricity, but rather is dedicated to desalination, district heating, or other process heat applications would not be subject to an analysis comparing against electrical generation alternatives.   | Restate the regulatory basis that is associated with evaluating the purpose of the project, and alternatives to that project, without restricting the project to electricity production as the sole basis for justification in terms of benefits. |
| 29. Chapter 2, Section 2.1 Land Use  | <p>The 1<sup>st</sup> paragraph notes: "Definition of vicinity and region is left to the discretion of the applicant; however, as a general suggestion, a typical distance limit of a 6-mi radius from the site perimeter can be used for vicinity..."</p> <p>Granted, this is for environmental considerations, the basis for a "6 mile" recommendation should be considered in light of other distances that are specified in other NRC guidance (for example, see safety and emergency planning guidance). Such guidance directs an applicant to provide site data that is to be used in specified models. While the 50-mile radius is described in multiple other sections of this draft, the "6 mile" recommendation only appears in this one section.</p> | Some consistency is warranted.  |
| 30. Chapter 2, Section 2.1 Land Use  | While the 3 <sup>rd</sup> paragraph <u>does</u> recognize industrial use, the 2 <sup>nd</sup> paragraph <u>does not</u> and is directed solely at traditional electricity producing NPPs. (see also section 2.1.2) Some clarifications are warranted for consideration of implications of offsite impacts due to industrial co-location uses.   | NRC should provide additional clarification.  |
| 31. Chapter 2, Section 2.1.2 Transmission-Line Corridors and Other Offsite Areas | This section suggests that while NRC recognizes that new transmission lines and corridors may not be constructed or owned by the applicant (paragraph 1), the applicant is still responsible for providing a discussion of certain land use   | This section of the guidance is unfairly burdensome for the applicant. During the last several years there has been inconsistent NRC treatment of transmission lines in an EIS – particularly the   |

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|   | <p>information relating to new transmission-related facilities, who would build them and own them "and the associated process for obtaining approved rights of way" – plus planned routing, etc.</p>   | <p>question of how much an applicant can be expected to know about transmission lines being built (or to be built in future) by regional transmission organizations (not the applicant.) The issue was litigated at NRC in connection with the Fermi 3 COL application. DG-4026 does not appear to reflect the most recent NRC position.</p>                              |
| <p>32. Chapter 2, Section 2.1.2 Transmission-Line Corridors and Other Offsite Areas</p> | <p>The section on Transmission-Line Corridors discusses construction activities focusing primarily on new TL corridors and facilities.</p>   | <p>(1) Eliminate use of "construction" regarding non-NRC-licensed activities<br/> (2) To clarify that certain information is also expected for alterations to existing lines/corridors, add "(or significant changes to existing lines and corridors)" between "new transmission lines and corridors" and "are relevant" in the last sentence of the first paragraph.</p> |
| <p>33. Chapter 2, Section 2.2 Water Resources</p>                                       | <p>This section introduces the term "Region of Interest (ROI)" as compared to terms used in Sec. 2.1, e.g., "site," "vicinity," and "region." Mixing of these terms and differing definitions could lead to confusion on just what area is being examined for each section.</p>  | <p>The DG would benefit from a close "scrub" of such terms to ensure they are being used/ applied consistently. Staff should consider a "site-related terminology" summary as an aid to ensure consistent usage.</p>  |
| <p>34. Chapter 2, Section 2.3.1 Terrestrial Habitats, 3<sup>rd</sup> bullet</p>         | <p>This bullet (and similar statements in other terrestrial and aquatic ecology sections) says that "[s]tudies would ideally show the condition of the ecological resources that exist no more than 5 to 10 years prior to NRC receiving the application," and requests justification for use of older data.</p> <p>Yet the staff routinely questions use of data marginally older than five years, and suggests that "two to five years" should be the threshold for consideration of "new and significant" information (e.g., in developing a COLA</p> | <p>The generally acceptable range of 5-10 years is appropriate, but should be applied consistently throughout the DG.</p>   |

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|   | <p>incorporating an ESP).</p> <p>See also comment on Appendix A, Pg A-2, Sec. A.2 below.</p>   |  |
| <p>35. Chapter 2, Section 2.3.1 Wetlands, last bullet</p> | <p>The DG requests "[i]dentification, when possible, of whether each wetland is under the jurisdiction of the Clean Water Act or applicable State or local wetland protection laws."</p> <p>"When possible" over prioritizes this information.</p>   | <p>Change to:</p> <p>"Identification, when <u>practical</u>, of whether each wetland is under the jurisdiction of the Clean Water Act or applicable State or local wetland protection laws (note that a jurisdictional determination may not have been made at the time of an application)."</p>                               |
| <p>36. Chapter 2, Section 2.4, Socioeconomics</p>         | <p>This section states that the application should discuss where the majority (80 percent or more) of socioeconomic impacts will be experienced.</p>   | <p>Justification or clarification should be provided for the 80 percent threshold identified.</p>  |
| <p>37. Chapter 2, Section 2.4, Socioeconomics</p>         | <p>Section 2.4 is explicit on how to analyze trends of demographic data and when the data analysis should begin and end (analyzing two decennial censuses past and extend forward to at least one past the expected license period of the proposed project). With respect to section 2.4.2, the draft guidance is less explicit but still requests for trend data.</p> | <p>Clarify the level of data (qualitative or quantitative) that applicants should provide for the three bullets on page 39 that will meet staff expectations.</p>  |
| <p>38. Chapter 2, Section 2.5, Environmental Justice</p>  | <p>Staff is basing their methodology for performing Environmental Justice reviews through an office instruction.</p> <p>Office instructions can be changed internally and are meant to be desk guides for the staff.</p>   | <p>Staff should cite either the ESRP or ISG or other guidance documents that require public participation. There also appears to be two cited office instructions, "LIC-203, Rev 2" in Section 2.5 and "LIC-203, Rev 3." in Section 2.5.1. This editorial mistake should be corrected. (Rev. 3 is cited in the References)</p> |
| <p>39. Chapter 2, Section 2.6.3 Consultation</p>          | <p>The DG discusses requirements for summarizing "informal consultations," but it is not clear whether the usage of "informal" and "formal" is intended to be the same as used in Appendix B, Sec. B.1 (pg B-1). Correspondence with the SHPO and affected tribes, for example, might not</p>  | <p>Clarify use of "informal" and documentation expectations for such consultations.</p>  |

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|  | be considered "informal" from the information presented in this section.   |  |
| 40. Chapter 2, Section 2.7.2 Air Quality   | The last bullet discusses Attachment 1 to COL/ESP-ISG-26. The status of this ISG is unclear. See 78 FR 56750; 78 FR 68101 (reopening of comment period); and 79 FR 52373. See also August 25, 2014 ISG which is marked as "Final". [ML14092A402])  | Provide status of this ISG moving forward.   |
| 41. Chapter 2, Section 2.8.4 Electromagnetic Fields<br><br>and<br><br>Chapter 5, Sec 5.8.4 Chronic Effects of Electromagnetic Fields | <p>According to the EPA, "In the United States, there are no federal standards limiting electromagnetic fields from power lines and other sources to people at work or home." What is the regulatory basis for requiring an assessment of "acute effects from exposure" or "long-term or chronic exposure" to such fields, or implying an adverse impact in light of the lack of objective evidence linking exposure to such impacts? What guidance is available for meeting the requirements set forth in this section of the DG?</p> <p>NUREG-1437 states repeatedly that no conclusive evidence has been presented identifying such exposure as hazardous. It is not appropriate, therefore, either to imply such hazards exist (as inclusion of its assessment under "non-radiological health" does), or to saddle applicants with the ongoing burden and uncertainty of continuing to have to prove a negative.</p> | Sections 2.8.4 and 5.8.4 should be deleted from this DG. Assessment of electromagnetic fields should not be required until/unless definitive evidence of a hazard is provided. |

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| <p>42. Chapter 2, Section 2.9 Radiological Environment and Radiological Monitoring</p> <p>And</p> <p>Chapter 5, Section 5.9.6 Radiological Monitoring</p> | <p>The DG describes requirements for a greenfield site only in these two sections. Are there other areas where greenfield considerations are important?</p>  | <p>Clarify where/whether greenfield considerations are relevant to other sections to distinguish environmental data requirements for licensing of expansions on existing plant sites versus on greenfield sites.</p> |
| <p>43. Chapter 2, Section 2.9 Radiological Environment and Radiological Monitoring</p>  | <p>The 5<sup>th</sup> bullet mentions NEI 07-07. As described in the NEI transmittal, this industry guidance document is "a voluntary initiative on ground water protection. The purpose of the initiative is to improve nuclear industry programs for preventing, detecting and responding to inadvertent releases of radioactive substances that may result in low but detectable levels of plant-related materials in ground water. Such releases are well below the NRC's limits to ensure protection of public health and safety and fall outside the scope of specific regulatory requirements."</p> | <p>Industry initiatives that fall outside the scope of NRC requirements should not be drawn into a formal RG.</p>  |
| <p>44. Chapter 3, Section 3.4.1 Plant-Environment Interfaces during Operation.</p>  | <p>The 3<sup>rd</sup> bullet on Air Interfaces should address potential applications that use air as the ultimate heat sink.</p>   | <p>Revise to address potential applications that use air as the ultimate heat sink</p>   |
| <p>45. Chapter 4, Section 4.0 Environmental Impacts from Construction of the Proposed Project</p>   | <p>This section requires discussion of activities that are not "construction" pursuant to NRC regulation.</p>  | <p>Change title of this section to "Environmental Impacts from Construction and Preconstruction Activities"</p> <p>Make any necessary conforming changes within the</p>  |

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|  |  | text of this section, ensuring proper jurisdictional boundaries (between NRC-regulated construction and non-NRC-regulated preconstruction) are maintained.   |
| 46. Chapter 4, Section 4.4.3 and Chapter 5, Section 5.4.3              | Section 4.4.3 and 5.4.3 requests the applicant to utilize industry standard input-output models to quantify the benefits to the community. The guidance suggests expected direct and indirect employment effects and direct and indirect income effects.   | Recommend that the guidance allow for other benefits be allowed to be discussed that can be calculated using input-output models such as output, consumption, housing prices, etc. These benefits can then be carried forward to the benefit-cost balance in Chapter 10. |
| 47. Chapter 4, Section 4.9   | Refers to "multi-modular reactors" – but this term is not well defined.  | Clarify or define the term of multi-modular reactor, to distinguish from modular construction terms.   |
| 48. Chapter 5, Section 5.8.3 Acute Effects of Electromagnetic Fields   | Clarify that this section is more concerned with electric shock than "exposure to EM fields" by amending the section title.  | Change title to "Electric Shock Impacts"   |
| 49. Chapter 5, Section 5.9 Radiological Health during Normal Operation | The text should be expanded beyond that of "radiological sources from operation of the proposed facility" to include potential radiological sources from co-located facilities, such as existing coal piles or coal slurry ponds (for re-powering projects) or other industrial uses.  | Revise to account for other radiological sources potentially on the site.  |
| 50. Chapter 5, Section 5.9.3 Impacts to Members of the Public          | The last paragraph references an NRC report (reference 68). That reference is to "National Council on Radiation Protection and Measurements (NCRP), 2009, "Ionizing Radiation Exposure of the Population of the United States," NCRP Report No. 160, Bethesda, MD," which summarizes 2006 data. Is there more recent data available? | Provide updated report, if there is one available.   |

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| 51. Chapter 5, Section 5.9.4, Occupational Dose to Workers | Sentence "This value can either be estimated from the design control document (DCD) for the reactor design or from doses to workers at operational units at the site."<br>Only applies if the plant is licensed under Part 52, however if the plant is licensed under Part 50, the PSAR/FSAR is the source of information.   | Revise to include PSAR/FSAR for plants that are licensed under Part 50.  |
| 52. Chapter 5, Section 5.10 Nonradioactive Waste           | The list of wastes here is more comprehensive than the similar list in Section 4.10 although most wastes are the same during construction and operation differing mainly in volume.  | Suggest that the lists of wastes to be addressed be consistent in both sections.   |
| 53. Chapter 5, Section 5.11, para. 1                       | Section 5.11 states, "The applicant's evaluation should be performed in accordance with the current version of NRC guidance documents."<br>These evaluations take a significant amount of time to develop, revise, and maintain. Applicants should have some window of time to assure the evaluation does not need to be re-performed when new NRC guidance comes out just prior to the submittal/docketing/approval of their application. | Change to "The applicant's evaluation should be performed in accordance with the latest version of NRC guidance documents available 18 months prior to submittal of their application" to allow time to prepare the application. |

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| <p>54. Chapter 5, Section 5.11, Para. 1 and Section 5.11.2, para. 2</p> | <p>Section 5.11 states, "The evaluation should be generic for design certifications..." and Section 5.11.2 states, "The environmental risks of severe accidents (i.e., Level 3 PRA) should consider all severe accident types from the Level 1 PRA, apply all source terms from the Level 2 PRA, and should be generic for DCs and site-specific for all other applications."</p> <p>What does it mean to do a generic evaluation when many inputs are of a site specific nature? What is generic weather, land use, watershed, crops, population distributions, etc.? In the past, design certification applicants have selected previously constructed sites to gather generic values which resulted in questions asking for evidence as to why the site over a specific time period is representative or generic (for example, RAI No.: ER 1-8428 from APR1400 design certification). These RAIs on generic site specific values have taken the industry significant time and resources to address.</p> | <p>Provide guidance as to what will be accepted as "generic" site specific inputs for design certification evaluations.</p> |
| <p>55. Chapter 5, Section 5.11.1, first bullet</p>                      | <p>The paragraph has an odd number of parentheses.</p>   | <p>Add a closed parenthesis or otherwise fix typographical error.</p>   |
| <p>56. Chapter 5, Section 5.11.1</p>                                    | <p>Criteria are called out here: "comparison of the DBA doses with review criteria given in regulations (i.e., 10 CFR 52.79(a)(1), and 10 CFR 100.21, "Non-Seismic Siting Criteria") and standard review plans (i.e., SRP criteria, Table 1 in SRP Section 15.0.3 of NUREG-0800, Ref. 57)." However it is understood that 10CFR50.34 and RG1.183 are the prevailing regulatory references for dose criteria for DBAs.</p>  | <p>Revise to ensure that correct regulations for DBA dose criteria are called out.</p>                                      |
| <p>57. Chapter 5, Sec 5.11.2 Severe</p>                                 | <p>The DG should apply risk-informed insights and NEPA's "reasonably foreseeable" standard consistently. Where a</p>   | <p>Develop guidance on establishing "severe accident" assumptions when core damage has been</p>                             |

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| Accidents                                      | <p>design can demonstrate convincingly that its maximum credible (which actually exceeds "reasonably foreseeable") event does not involve an uncovered core, there should be no obligation to deterministically assume significant core damage in postulating beyond design basis events.</p> <p>Further, the DG should establish a cutoff frequency beyond which severe accident consequences – e.g. <math>10^{-6}</math> – need not be considered. (Requiring consideration of extremely rare events is not consistent with a "reasonably foreseeable" standard, and sends an inaccurate message to the public about the relative risks of nuclear generation.)</p> | precluded above, say, $10^{-6}$ per reactor-year.   |
| 58. Chapter 5, Section 5.11.2 Severe Accidents | <p>The discussion of Level 1/2/3 PRAs is specific to large LWRs and has no comparable meaning with advanced non-LWRs.</p> <p>Note, Appendix C Small Modular Reactor Design does describe some differences between large and small reactors. The discussion presented in the Appendix, while useful, does not address technology differences between small water-cooled designs (SMRs) and advanced non-LWRs.</p>  | The RG should address technology differences between (SMRs) and advanced non-LWRs.            |
| 59. Chapter 5, Section 5.11.2 Severe Accidents | <p>The 3<sup>rd</sup> bullet should append the listing of "NUREG/CR-6613, "Code Manual for MACCS 2: Volume 1, Users Guide," MELCOR Accident Consequence Code System (MACCS2 code)" with "or equivalent" as MELCOR was developed specifically for large LWRs and may not be appropriate for use with advanced non-LWRs.</p> <p>Similar comment on other references to PRA within the draft.</p>  | Revise guidance to clarify alternative options to MELCOR code.                                |
| 60. Chapter 5, Section 5.11.2, para. 3         | Section 5.11.2 states, "The risks should be estimated using an acceptable methodology that uses onsite and  | Provide explicit guidance as to what would be considered an acceptable methodology or clarify |

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|  | <p>regional meteorology, population, and land-use data.”<br/> This section does not explicitly elaborate on what would be considered an acceptable methodology</p>   | <p>that applicants may use other final guidance for interactions between the applicant and staff.</p>  |
| <p>61. Chapter 5, Section 5.11.2, para. 3, second bullet</p> | <p>Section 5.11.2 states, “The applicant should provide... list of severe accident release sequences and their associated core damage frequencies from the Level 1 PRA and source terms for internally initiated events, fire events, flooding events, low power and shutdown events, and externally initiated events (e.g., high winds and earthquakes) as determined from the Level 2 PRA”<br/> Design Certification Applications are not required to have a seismic PRA and COLAs are not required to have a seismic PRA until first fuel loading.<br/> Furthermore, it is difficult for an applicant to provide this information without a "generic" seismic hazard curve for the US in absence of site specific information in a DCA.</p> | <p>Provide exception to this expectation to provide source terms induced by earthquakes for design certification applications, or otherwise qualify the statement or provide guidance on how COLAs and DCAs are to fulfill this expectation.</p> |
| <p>62. Chapter 5, Section 5.11.2, para. 3, third bullet</p>  | <p>Section 5.11.2 states, “The applicant should provide... description of the methodology in NUREG/CR-6613”.<br/> NUREG/CR-6613 is not a methodology document per se. It is unclear what methodologies from NUREG/CR-6613 Section 5.11.2 is requesting. Assuming the guidance is updated to clarify this specifically, it is then unclear why each applicant should redundantly duplicate and transcribe portions of NUREG/CR-6613 into their application instead of simply stating certain methodologies from certain portions of the NUREG were utilized.<br/> NUREG/CR-4551 provides methodology. Should it have been mentioned in this bullet?</p>   | <p>Clarify what methodology in NUREG/CR-6613 is being referred to and do not request applicants to duplicate descriptions of methodologies in their applications if the methodologies are already referenceable in the NUREG itself.</p>         |
| <p>63. Chapter 5, Section 5.11.2, para. 3, third bullet</p>  | <p>Section 5.11.2 states, “The applicant should provide...input and output files used in the analysis should be provided to the NRC staff for confirmatory review”.<br/> It is unclear how these are to be provided to the NRC staff</p>   | <p>Clarify that these files are to be provided during an audit and not formally submitted or placed on the docket.</p>   |

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|  | for confirmatory review. That is, whether these files may be audited or whether they need to be placed onto the docket.  |   |
| 64. Chapter 5, Section 5.11.2, para. 3, sixth bullet   | Section 5.11.2 states, "The applicant should provide... description of the demographic and population data used in the analysis based on the 50-mi population estimate for the year operation is expected to cease". NEI 05-01 recommends the population estimate be for a year in the second half of the period of extended operation. An estimate closer to a median date of operation will typically be more realistic compared to an end-of-operation date-based estimate (since population typically grows with time, but the hypothetical accident could occur at any time in the plant's life). Additionally, from a practical standpoint for design certifications, an estimate looking 60 or 80 years into the future demographic and population is less reliable and harder to obtain than an estimate looking 20 or 40 years into the future. | Recommend maintaining the NEI 05-01 guidance, or otherwise provide guidance that is closer to a median year of plant lifetime based estimate rather than an estimate for the year operation is expected to cease.   |
| 65. Chapter 5, Section 5.11.2, para. 3, twelfth bullet | Section 5.11.2 states, "The applicant should provide... description of the comparison of the core damage frequencies estimated for the reactor to those for current-generation reactors and the comparison of the population dose risks to the mean and median values for current-generation reactors undergoing license renewal". What is the practical benefit or necessity of giving this comparison? If the staff still find this request necessary, it would be beneficial for them to provide a reference document that will be periodically updated that contains the average CDF and dose risks from current-generation reactors. Otherwise, many applicants could choose a variety of different reactors they deem as representative  | Rescind the expectation to provide a comparison of the applicant's reactor against current-generation reactors. If not rescinded, provide applicants with guidance (preferably an easily referenceable table of data) describing the current-generation reactor data. |

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|   | to compare against, which could lead to inconsistencies and significant time spent by applicants assembling this data and assuring it is what the staff wants.   |   |
| 66. Chapter 5, Section 5.11.2, para. 3, thirteenth bullet | <p>Section 5.11.2 states, "The applicant should provide... description of individual (i.e., early fatality and latent cancer) risks".</p> <p>Are estimates of latent cancer from low-probability events required for NEPA? It is understood that the council on environmental quality (CEQ)'s regulations implementing NEPA have a complex legal history with respect to interpretations, but the precise reason for the requested level of detail desired by NRC for early fatality and latent cancer estimates from severe accidents should be given if other agencies regulating competing energy industries do not require similar levels of detail in their NEPA analyses. For example, in <i>Warm Springs Dam Task Force v. Gribble</i> in 1980, the Ninth Circuit Court of Appeals found that a discussion of the consequences of a dam failure (i.e., a low probability high consequence event akin to a severe accident) was unnecessary, stating, "Everyone recognizes the catastrophic results of the failure of a dam; to detail these results would serve no useful purpose.". At issue is that if oil pipelines and solar cell manufacturing complexes are including estimates of how many cancers may occur from hypothetical oil spills and hazardous waste spills, then it would be proper for the nuclear industry to follow suit. However, if the oil, coal, and solar industries are not discussing latent cancer effects in their NEPA related documents then it would be unfair and projecting a false image to the public of the relative risks of nuclear power for nuclear power related EIS's to discuss cancer effects when it is reasonable to speculate that similar cancer risks</p> | <p>Rescind the expectation to provide early fatality and latent cancer risks from low probability high consequence severe accidents.</p> <p>If not rescinded, provide a specific basis for the request.</p> <p>If not rescinded, provide explicit guidance as to what methods would be acceptable for the calculation of the number of early fatalities and latent cancers.</p> |

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|   | <p>exist for other forms of energy.<br/> If offsite dose from low probability high consequence events are already requested and NUREG/1530 \$/REM values already implicitly take into account consequences from early fatality and latent cancer effects, then the general intent of the request may already be met without explicitly listing the number of estimated early fatalities and latent cancers.<br/> Also, various computer codes may be used that implement various health physics models (threshold vs linear no-threshold) to estimate latent cancer risk and it may be possible for applicant's methods to be valid, but not consistent with assumptions implicit in other health effect related guidance (such as NUREG/1530).</p> |  |
| <p>67. Chapter 5, Section 5.11.3, para. 2, footnote 13.</p> | <p>Section 5.11.3 footnote 13 states, "NEI 05-01... provides a template for completing SAMA analysis in support of reactor license renewal. If applied as a guidance document for new reactor applications, the applicant should justify its use in the ER".<br/> NEI 05-01 has been applied as a guidance document for new reactors in the past successfully. What particular portions of NEI 05-01 does the staff believe are inapplicable to use as a template for new reactor applications? It seems imprudent, and potentially confusing, to request each applicant to re-justify the use of this SAMA guidance document when alternative guidance documents are not recommended or existent.</p>  | <p>Clarify the ways in which the staff perceives NEI 05-01 could be used in an improper manner when applied to new reactor applications, or rescind the request that NEI 05-01 be re-justified by every new reactor applicant.</p> |
| <p>68. Chapter 6, Section 6.1.2</p>                         | <p>Editorial: "(in gal or m3)" appears to be missing the superscript on cubic meters</p>  | <p>Revise to use superscript on cubic meters.</p>  |
| <p>69. Chapter 6, Section 6.3 Decommissioning</p>           | <p>The 2<sup>nd</sup> bullet provides an incorrect reference to COL/ESP-ISG-26 (reference 16 versus the correct reference 14). A quick review indicates that the referencing of this and</p>  | <p>Correct the incorrect references and verify all references are correctly applied throughout the document.</p>   |

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| 70. Chapter 7, Section 7.0 Cumulative Impacts | <p>other documents is incorrect for multiple entries.</p> <p>This section has a good explanation of how to establish the geographic area for cumulative effects. However, the guidance provided does not comport with recent direction from the staff that the cumulative geographic area for each resource needed to match the direct/indirect geographic area.</p>  | <p>Ensure direction in the guidance is consistent with staff expectations regarding the relationship (if any) of the cumulative impacts geographic area to the direct/indirect impacts geographic area.</p>   |
| 71. Chapter 8, Section 8.0 Need for Power     | <p>Consistent with the comment on Sec. 1.2, above, the DG inappropriately REQUIRES consideration of "need for power," even if that is not the intended benefit of the project. Other uses such as desalination or other process heat applications are ignored.</p> <p>Additionally, the DG seems to preclude justification of a project exclusively for greenhouse gas (GHG) reduction, fuel diversity, grid stability, or mission-critical applications by referring to these as "ancillary benefits."</p> <p>NEPA does not require that an EIS consider "need for power" explicitly, but rather dictates an evaluation of the project based on a cost-benefit analysis.</p> | <p>An analogous set of evaluation guidance should be developed for non-electricity production.</p> <p>The staff has expressed reluctance to develop this guidance owing to a lack of stated applicant interest in non-electricity applications. However, at a minimum, the guidance should acknowledge purposes other than "need for power" and not require consideration of "need for power" in those instances.</p> <p>The guidance should also restate non-baseload justifications such as GHG reduction, fuel diversity, etc., acknowledging the option that they may not be solely "ancillary benefits," but may actually constitute a sufficient purpose and need of their own.</p> <p>Conforming changes will also be needed elsewhere, e.g., in Sec. 9.2.</p> |
| 72. Chapter 8, Need for Power                 | <p>The need for power should consider non-electrical power applications as well (e.g., cogeneration and industrial heat). Much of the guidance in Section 8 can be applied as is, with removal or expansion of discussion specific to electrical power.</p>   | <p>Delete reference to electricity where guidance can be applied directly to non-electrical power applications. For guidance specifically applicable to electrical power, add discussion that accommodates other types of power generation.</p>   |

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| 73. Chapter 8, Section 8.1 Description of the Applicant's Power Market AND Section 8.2 Power Demand | These sections provide guidance assuming new, greenfield applications. Further discussion, or at least acknowledgement, should be added to address repowering applications. Similar comments are raised in conjunction with Chapter 9, Environmental Impacts of Alternatives.   | Revise guidance to address construction at locations other than greenfield sites.  |
| 74. Chapter 9, Section 9.2 Energy Alternatives  | The DG uses the term "environmentally preferable" here and in several other places. The NRC standard is that no clearly superior site has been overlooked. An implication that a "higher" standard such as "environmentally preferable" may not be appropriate.   | Check each instance of "environmentally preferable" to confirm that such usage does not create a higher criterion/threshold than ensuring no clearly superior alternative has been overlooked. |
| 75. Chapter 9, Section 9.3.3 Potential Sites  | <p>The guidance states:</p> <p>"An applicant is not expected to conduct detailed environmental studies for potential sites; only preliminary investigations using reconnaissance-level information.<sup>21</sup> A reconnaissance-level investigation should take account of information that is readily available over the Internet or from other sources (e.g., existing studies and State and Federal agencies).</p> <p><sup>21</sup> 'Reconnaissance-level information' is defined as information that is available from the applicant, governmental, Tribal, commercial, and/or public sources. Reconnaissance-level information does not normally require the collection of new data or new field studies. Reconnaissance should include more than just a literature search for issues that are critical to the evaluation of sites. So, for example, reconnaissance should include contact with the water-management agency about water availability in most cases, as discussed in the most recent version of RG 4.7. The amount and quality of information</p> | The guidance in this section is appropriate, but should be reinforced with the staff and their contractors. The issue may warrant amplification here or in NUREG-1555.                         |

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|   | <p>must be sufficient based on the expert judgment of the reviewer to make the required determination for which the information is needed."</p> <p>This standard is appropriate, but has not been applied consistently in recent environmental reviews, where applicants have been requested/ required to develop analyses for alternative sites beyond that considered "reconnaissance level."</p>   |  |
| <p>76. Chapter 9, Section 9.3.5 Proposed and Alternative Sites</p>          | <p>The DG states:</p> <p>"The evaluation of the cumulative impacts at the alternative sites should be similar to that for the proposed site, except that reconnaissance-level information is used for the alternative sites. If, however, initial efforts to draw a clear differentiation between the proposed site and any alternative site proves inconclusive, then reconnaissance-level information can be expanded to include information obtained through more in-depth information gathering or visits to the affected region."</p> <p>The NRC standard is that an obviously superior site has not been overlooked. So if a recon-level analysis does not draw a clear differentiation, the regulatory basis for requiring more analysis is not clear.</p> | <p>Amend this portion of the guidance to indicate additional analyses beyond reconnaissance level is required only in the event of a clear indication that recon-level information could result in overlooking clearly superior site.</p>  |
| <p>77. Chapter 9, Section 9.3.5 Socioeconomic and Environmental Justice</p> | <p>The wording for Socioeconomics and Environmental Justice subsections ("If a socioeconomic topic is important enough for a discussion in the proposed site analysis, that same topic should be considered for each alternative site") could be taken to mean that these analysis are optional for the proposed site. However, as written, Sections 2.4 &amp; 2.5; 4.4 &amp; 4.5; 5.4 &amp; 5.5 give detailed requirements for</p>   | <p>Clarify with "If a specific topic within socioeconomic [or EJ] analyses is important enough for significant discussion within the proposed site analysis, that same topic should be considered for each alternative site. Alternative site analysis may be limited to the extent to which the topic(s) has the potential to indicate clear site superiority."</p> |

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|   | <p>these assessments that do not sound optional.</p> <p>Additionally, this guidance should be reconciled against the language in Sec. 9.3.3-9.3.5 regarding the use of reconnaissance-level information (i.e., the importance of a specific topic within socioeconomic and EJ analyses need not necessarily drive characterization of an alternative site beyond reconnaissance level, except in the case of a clear indication that an alternative site could be clearly superior.</p>  |   |
| <p>78. Chapter 9, Section 9.4.3 Other System Alternatives</p>                     | <p>This portion of the DG is vague as to intent and when it is applicable.</p>   | <p>Provide clarification on what constitutes "unusual circumstances" and/or what criteria should be used to determine if such circumstances exist.</p>  |
| <p>79. Appendix A, Sec. A.1 Early Site Permits</p>                                | <p>The DG appendix states: "An applicant for an ESP should review previous applications along with associated requests for additional information (RAIs) to gain an understanding of the level of detail needed to receive an ESP."</p> <p>While this is reasonable advice, the trend has been toward ever-increasing application content, "informed" by prior applications in a feed-forward fashion that has the net effect of increasing regulatory burden. For regulatory burden to grow as plant designs increase margins of safety is counterintuitive and contrary to efficient regulation.</p> | <p>While this language is seemingly innocuous, it should be balanced with an acknowledgment of the need for regulatory stability and objective criteria to be met from one application to the next.</p> |
| <p>80. Appendix A, Sec. A.2 Combined License Referencing an Early Site Permit</p> | <p>The DG appendix states: "All the information described in Part C, with the exception of alternative sites, should be reviewed by the applicant to determine if any new and significant information has become available since the issuance of the ESP EIS. If new and significant information has become available, the applicant must include it in the ER for the COL referencing the ESP."</p>   | <p>The staff should establish consistent guidance on the "age" threshold for "new and significant" information that recognizes the value of an ESP and the need for regulatory stability.</p>           |

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|                               | <p>Additional guidance is needed in determining the "shelf life" for environmental data. While the DG says in other locations (e.g., Sec. 2.3.1) that "studies work ideally show the condition of the ecological resources that exist no more than 5 to 10 years prior to NRC receiving the application," it has more often been the case that the staff have suggested that data older than two to five years must be "refreshed" for a COLA.</p> <p>With a typical review time of 3+ years for an ESP, if data must be refreshed after two years, then an ESP is of highly questionable value vis-à-vis finality for site findings, contrary to the statement in Sec. A.1 that "[t]he ESP process is meant to resolve [site-specific environmental safety and emergency planning] issues well in advance of when a decision is made to build a nuclear power plant."</p> |  |
| 81. Appendix B, Consultations | With the exception of the final paragraph, this appendix provides direction almost exclusively to the staff.   | Consider moving this information to NUREG-1555, or include appropriate guidance to applicants.   |
| 82. Appendix C                | <p>Very little of the guidance in this appendix is unique to SMRs. In particular Sec. C.7 offers guidance that is generic in almost every case to multi-unit LLWRs as well.</p> <p>Secs. C.1 through C.6 offer useful insights that, if this appendix is absorbed into the main DG text, would make sense to highlight. Similarly, Sec. C.7.9 is helpful for smaller reactors (SMRs or otherwise). But the balance of the appendix includes guidance that is generally applicable to any design.</p>   | Consider folding the content of Appendix C into the main body of the DG, with emphasis on the aspects of the guidance that are of particular interest to small reactors. |
| 83. Appendix C                | Appendix should be reviewed for consistent/appropriate usage of terms "unit" and "module"  | Review/revise as indicated   |
| 84. Appendix C                | The DG appendix states "An SMR is a reactor unit with a  | To avoid confusion and maintain consistency with   |

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| introductory section                    | nominal output of 300 MW(e) or less that is able to be factory fabricated and transported to the site for assembly of components and operation." This is not a formal definition, and an SMR is not typically thought of as only a single unit. Further, SMRs are not necessarily "factory fabricated," although many modules are.  | other usage by NRC, change to:<br><br>"An SMR is generally considered to be a nuclear plant consisting of one or more reactor units, with a nominal output of 300 MWe or less per unit. SMRs may also include use of construction modules fabricated offsite and transported for assembly at the plant site." |
| 85. Appendix C, C.1 Licensing Scenarios | The subsections of this section should be renumbered from C.2 through C.6 to C.1.1 through C.1.6 (or similar) to reflect the fact that they are subsections of the C.1 topic.   | Renumber as indicated   |
| 86. Appendix C, Section C.3, para. 1    | Section C.3 states, "An applicant could request licenses for one or more modules and inform the NRC that it intends to request licenses for additional modules in the future. Under this scenario, the proposed action would include only the modules for which licenses are requested. The applicant should provide sufficient information to allow the NRC to determine whether the additional modules are reasonably foreseeable for the purposes of evaluating cumulative impacts. For the additional modules to be treated as reasonably foreseeable, the siting study submitted with the original application should include consideration of all the modules."<br><br>It is unclear how the NRC would determine whether the additional modules are reasonably foreseeable. Would it be tied to a certain period of time in which the modules would be installed? For example, it could be stated that reasonably foreseeable is if a requested additional module is to come on line 15 years or less after initial module and any time greater than 15 years is not reasonably foreseeable.<br><br>It seems a determination on foreseeability would be | Elaborate on and clarify how future modules are determined to be reasonably foreseeable or not.   |

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|  | <p>unnecessary if it is understood that, by definition, if the applicant put the future module in the siting study (or elsewhere in the application) they foresaw it (and therefore was reasonably foreseeable) and if they didn't then it was unforeseen (and therefore not reasonably foreseeable).</p>   |  |
| <p>87. Appendix C, C.4 Two or More Separate License Applications</p> | <p>The DG appendix states: "An applicant may request a license for a certain number of modules without the siting analysis and ER considering additional modules at that site as reasonably foreseeable. The ER (and the NRC's EIS) will only consider the modules requested. If an applicant submits a subsequent application for additional modules, the ER will have to address all of the issues in this RG including alternative sites and alternative energy."</p> <p>This section identifies a scenario where a license for additional modules may be sought at a later date, but not identified in the original application. The description of regulatory risk for this scenario would benefit from clarification.</p> | <p>Restate along the lines of:</p> <p>"In certain circumstances, a licensee or applicant may identify the need for additional modules subsequent to the initial application, which could create the option of a subsequent application for additional modules not considered as reasonably foreseeable in the original siting analysis and ER. The initial ER (and the NRC's EIS) will only consider the modules requested. If an applicant submits a subsequent application for additional modules, the ER will have to address all of the issues in this RG including alternative sites and alternative energy."</p> |
| <p>88. Appendix C, Section C.7.9</p>                                 | <p>The 4<sup>th</sup> paragraph states that "an applicant may propose to use excess heat for industrial processes or station heating as an additional purpose for the proposed project, or provide a secure energy source for military, government, or critical industrial facilities. In these cases, the applicant must still submit alternative sites."</p>  | <p>Staff must justify this need and the regulatory basis. Additionally, clarify the impact of having to submit alternative sites for "military, government, or critical industrial facilities" when such facilities present brownfield applications.</p>   |