

Attachment 2: Comments on Draft SER – Revision 2

Technical and editorial comments are listed in Table A-2-1 and Table A-2-2, respectively.

Table A-2-1: Technical comments on Draft SER, Revision 2

Page #	Line #	Comments
3	48	The Kopp memo interpretation in the ISG only includes uncertainty in the isotopic content as stated in item <i>i</i> (line 30-33). The reported bias and uncertainties in the EPRI depletion benchmarks cover not only isotopics but also the cross sections, numerical approximations, etc. The comment in the SER acknowledges this fact; however, it is not reflected in the main text of the draft SER. To avoid confusion for future applicants and reviewers, we recommend this point be clarified in the text.
10	47-49	The following text, " <i>additional study may be warranted for other fuel designs over a range of BA types and loadings,</i> " might be confusing to an applicant as it could be interpreted as a requirement for additional analysis by the applicant to demonstrate applicability for all PWR fuel types. The next page acknowledge that these issues were addressed via RAI responses and the applicability was demonstrated. Therefore, we recommend clarifying the original text to avoid confusion. One option could be to re-state this item in a way that the SER clearly states that this concern was raised during the NRC review and addressed by EPRI and described in the following section?
13	28-30	" <i>For other fuel types, BAs, or other SFP storage conditions additional analysis may be needed to demonstrate that results of the EPRI benchmark report are applicable to a given application.</i> " Same as the previous comment. The statement is vague and open ended, which could lead to confusion and delay on the part of applicants and reviewers thinking that additional analysis is needed for current designs. If the goal is to include considerations for any future potential exotic designs and ensure exclusions of those exotic designs, perhaps that should be clearly stated? Instead of stating " <i>For other fuel types, ...</i> " perhaps should state " <i>For any other future, non-standard, exotic fuel types, ...</i> ".
18	26-27	Table 1 should be replaced with the agreed-upon changes, specifically, with the Table included in the letter. Based on the agreements during December 20, 2018 public meeting, EPRI is providing this table to the NRC as part of this package, as Attachment 1. It is recommended to remove confirmatory NRC/PNNL Bias and Uncertainty from Table 1 of draft SER-Rev2 to avoid confusion by the applicant given Appendix C was only for confirmatory purposes and new bias is for additional NRC safety margins. Also recommending to address uncertainty and bias for the values that are between the values listed in Table. For that purpose, suggest adding a statement similar to " <i>Linear interpolation between the burnup values, listed in Table 1, is acceptable to calculate the corresponding EPRI uncertainty and additional NRC bias for specific fuel assembly burnups</i> " to avoid ambiguity for the user.

19	17-24	Based on the discussions during the December 20, 2018 public meeting and to avoid confusion, recommend deleting this paragraph.
19	26-31	Based on the discussions during the December 20, 2018 public meeting and to avoid any confusion, it is recommended to delete " <i>Specifically, the net effect of EPRI-derived biases and uncertainties were found to be slightly non-conservative at higher burnups exceeding approximately 30 Gwd/MTU.</i> " If NRC plans to keep Appendix C, this whole paragraph can be re-worded to state that NRC staff performed a confirmatory analysis, as presented in Appendix C, and additional discussions with EPRI were conducted (ML number for public meeting) to further discuss the reasons behind the observed discrepancies. Based on these discussions, NRC added additional safety margins for the Bias calculations, as shown in Table 1.
20	3--5	Given the new agreed upon numbers, suggest adding the NRC bias in this item. Note the text states 430 GWD (typo), which should be changed to 30.
20	11--14	Similar to first comment, SER needs to spell out that bias and uncertainty values cover not only isotopic but cross sections, etc.
20	26	Given the revised numbers and plans for utilization report revisions, the last sentence should be changed to reflect the change. "There is no need for an end user to account for this bias..." is not true anymore.
23	41--46	Based on the agreed numbers from the December 20, 2018 public meeting and revised Table 1, this paragraph should be deleted or updated to reflect these changes.
Appendix A-C		Not sure of the purpose of Appendix A and B. If Appendix C is going to be included in the final SER, we recommend revising the chosen example based on the discussions from the December 20, 2018 public meeting. The observations should be revised to reflect the agreed upon changes. Need to make clear that Appendix C is for confirmatory purposes and not for applicant use.

Table A-2-2: Editorial comments on Draft SER, Revision 2

Page #	Line #	Comments
1	10	Suggest revising "(McCullum, 2013)" to "NEI, 2013"
2	6	Suggest revising "(Smith et al., 2011; Smith et al., 2017)" to "(EPRI 2011, EPRI 2017)"
2	10	Suggest revising "(Akkurt and Cummings 2018)" to "(EPRI 2018)"
3	5	Suggest revising "(Smith et al., 2017; Akkurt and Cummings, 20172018)" to "(EPRI 2017, EPRI 2018)"
20	38	Suggest revising "(Akkurt and Cummings, 2018)" to "(EPRI 2018)"
24	38-40	Per EPRI guidelines, citation should be changed to: EPRI, 2018, <i>Utilization of the EPRI Depletion Benchmarks for Burnup Credit Validation – Revision 1</i> . EPRI, Palo Alto, CA: 2018. 3002010614. ADAMS Accession No. ML18088B395.
26	35-37	Per EPRI guidelines, citation should be changed to: EPRI, 2011, <i>Benchmarks for Quantifying Fuel Reactivity Depletion Uncertainty</i> . EPRI, Palo Alto, CA: 2011. 1022909. ADAMS Accession No. ML12165A457.
27	1--3	Per EPRI guidelines, citation should be changed to: EPRI, 2017, <i>Benchmarks for Quantifying Fuel Reactivity Depletion Uncertainty— Revision 1</i> . EPRI, Palo Alto, CA: 2017. 3002010613. ADAMS Accession No. ML18088B397.