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Docket: NRC-2023-0113
Environmental Evaluation of Accident Tolerant Fuels with Increased Enrichment and Higher Burnup Levels

Comment On: NRC-2023-0113-0001
Draft NUREG: Environmental Evaluation of Accident Tolerant Fuels With Increased Enrichment and Higher Burnup Levels

Document: NRC-2023-0113-DRAFT-0005
Comment on FR Doc # 2023-18966

Submitter Information

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General Comment

See attached file(s)

Attachments

LTR-NRC-23-29_Revision_0

LTR-NRC-23-29_Revision_0

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LTR-NRC-23-29

October 31, 2023

Subject: Westinghouse Comments on draft NUREG-2266, "Environmental Evaluation of Accident Tolerant Fuels with Increased Enrichment and Higher Burnup Levels" [Docket ID NRC–2023–0113]

On September 1, 2023, the Federal Register (FR) published a notice of request for comment on draft NUREG-2266 re: Environmental Evaluation of Accident Tolerant Fuels with Increased Enrichment and Higher Burnup Levels [Docket ID NRC-2023-0113].

Enclosure 1 of this letter provides Westinghouse Electric Company LLC ("Westinghouse") comments on draft NUREG-2266.

Westinghouse appreciates the opportunity for stakeholder involvement provided by the NRC rulemaking process.

Correspondence regarding this letter and the enclosed comments should reference LTR-NRC-23-29 and should be addressed to Zachary S. Harper.

Zachary S. Harper, Manager
Licensing Engineering

Enclosures:
(1) Westinghouse Comments on draft NUREG-2266, "Environmental Evaluation of Accident Tolerant Fuels with Increased Enrichment and Higher Burnup Levels" [Docket ID NRC–2023–0113] (Non-Proprietary)

Author: Courtney Gillingham *
Licensing Engineering

Reviewer: Jacob W. Nery*
Licensing Engineering

Approved by: Zachary S. Harper, Manager *
Licensing Engineering

Enclosure 1

Westinghouse Comments on draft NUREG-2266, "Environmental Evaluation of Accident Tolerant Fuels with Increased Enrichment and Higher Burnup Levels" [Docket ID NRC–2023–0113] (Non-Proprietary)

(3 pages including this cover page)

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Document Reviewed:		NUREG-2266 (Draft Report for Comment)	
Document Title:		Environmental Evaluation of Accident Tolerant Fuels with Increased Enrichment and Higher Burnup Levels	
Due Date:	10/31/2023	**Submittal Date:**	10/31/23

Page Number	Section Number	Comment
B-1	B.1	Line 17: Recommend that “spent fuel case accidents” should be changed to “spent fuel cask accidents”
2-11	2.2.5.1	Line 39: Recommend adding a footnote to define “environmental justice.” This definition could also be provided in Section 2.3.1, Considerations of Environmental Justice.
2-11	2.2.5.1	Line 39: Recommend clarifying what the “climate change” impacts are limited to (e.g., greenhouse gas emissions (GHG)). GHG is discussed in Section 2.3.2 as an addition to Table S-3 of the environmental impacts assessment, but it is not clearly tied to the concept of climate change.
B-7, B-8, B-12	B.6, B.7, B.10	Throughout Appendix B, The Report points to analyses performed in NUREG/CR-6672 and cites various cases. For example, the “fire only” scenario is identified as case 18 (per Table B-7). Per NUREG/CR-6672 Table 7.10, the “fire only” scenario is case 18 for truck accidents. Per NUREG/CR-6672 Table 7.11, the “fire only” scenario is case 20 for train accidents. Additional clarity on which accident scenario is being considered would be helpful to the reader, such as referencing the original NUREG/CR-6672 tables.
Appendix B	Multiple	The “fire only” scenario discussed in Appendix B results in a larger rod failure and particulate release than that of the “collision plus fire” scenarios. This result is counter-intuitive, but it is clarified in NUREG/CR-6672. It would be helpful to the reader if a similar clarification is provided in this report.
1-4, B-10	1.4, B.12	While it is not the stated scope of The Report, NRC analyses appear to support fuel enrichments up to 10 wt% U-235 and 85 GWd/MTU. It is specifically noted on Page 1-4 that ATF fuels with Cr-coated cladding and doped pellets demonstrated “negligible effects of ATF vs. non-ATF enrichments of 5 and 10 wt% U-235 and burnup of 62 and 80 GWd/MTU”. Also, Appendix B seems to extend analyses to burnups of 85 GWd/MTU with some impact, but no changes to conclusions for the analyses considered. While these analyses may not fully resolve all issues of greater enrichment and burnup, as the work has partially started, it is recommended that the conclusions be formally extended to cover those conditions as well.

Page Number	Section Number	Comment
5-2	5	Lines 33 through 45: Recommend that the bullet points provided in the conclusions be expanded upon to include additional information. Examples of potential improvements: - Bullet 2 discusses the front end of the uranium fuel cycle, which is outside of the scope of the reactor owner. Recommend including a clarification on which organization should be responding/ responsible for this within an ATF-related LAR. - Bullets 3 and 4 would benefit from internal cross references to other sections and tables within The Report. For Example, Bullet 3 could reference tables in Appendix E, and Bullet 4 could reference Table 3-2 and Section D.3.
5-3	5	Line 25: The final statement of The Report's conclusions states "Additionally, if in a future licensing action, the enrichment and burnup levels are greater than 8 wt% U-235 and 80 GWd/MTU, respectively, and for the deployment and use of long-term ATF technologies, the study could provide guidance for completing the needed revised analysis." Recommend clarifying whether this statement is saying that the licensee should use this report as a basis for a revised analysis, or that the NRC will consider extending this report to cover a wider range of conditions.
1-5, 1-7	1.4.2, 1.4.4	Recommend choosing one spelling for the vendor/ vender; both spellings are currently used. "Vender" is currently used on pages 1-5 and 1-7, "Vendor" is used for all other instances.
5-2	5	Line 20: Change "bound" to "bounded"
3-35	3.8	Lines 42 through 45: It is not clear in this conclusion that a detailed site-specific transportation analysis <u>is not required</u> in the LAR application, if the LAR changes are bounded by This Report (i.e., enrichment and burnup levels). This section states "This conclusion would need to be validated in the review of an NRC licensee's LAR application…" which is unclear when compared to the executive summary. Recommend modifying the language on Page 3-35 to clarify that a site-specific transportation analysis is not required, as well as what will need to be validated as part of the NRC's review. The executive summary states (page xvi, lines 22 through 26) "Therefore, the results of this analysis could serve as a reference in helping to address the environmental impacts of ATF licensing <u>without a detailed site-specific transportation analysis</u>…"

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