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Standard Review Plan for Renewal of Specific Licenses and Certificates of Compliance for Dry Storage of Spent Nuclear Fuel

**Comment On:** NRC-2015-0106-0001

Standard Review Plan for Renewal of Specific Licenses and Certificates of Compliance for Dry Storage of Spent Nuclear Fuel; Draft NUREG for Comment

**Document:** NRC-2015-0106-DRAFT-0002

Comment on FR Doc # 2015-16540

7/17/2015  
80 FR 38780

## Submitter Information

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**Name:** Robert Einziger

## General Comment

Specific comments are on the attached file. This is a well written and understandable document. It is a vast improvement over Revision 0, and provides better guidance to the reviewers (and applicants) about what should be included in the renewal application request and how to provide that input. The one programmatic omission is the situation where fuel has been stored at one site for some time period where it undergoes degradation then is transported to a second site, where it will be stored under a new application. Components such as the canister, canister internals, and fuel may not be in pristine condition due to the storage and transportation. This degradation has to be accounted for when the components are put in the new storage system. For these components the new storage is a quasi-renewal. Since this is a high probability situation in the near future it should be addressed in the document.

## Attachments

Review of NUREG-1927 Rev 1

SUNSI Review Complete

Template = ADM - 013

E-RIDS= ADM-03

Add= H. Banovac (HAB)

R. Torres (RTS)

## NWTRB Review of NUREG-1927 Rev 1

This is a well written and understandable document. It is a vast improvement over Revision 0, and provides better guidance to the reviewers (and applicants) about what should be included in the renewal application request and how to provide that input. The one programmatic omission is the situation where fuel has been stored at one site for some time period where it undergoes degradation then is transported to a second site, where it will be stored under a new application. Components such as the canister, canister internals, and fuel may not be in pristine condition due to the storage and transportation. This degradation has to be accounted for when the components are put in the new storage system. For these components the new storage is a "quasi-renewal". Since this is a high probability situation in the near future it should be addressed in the document.

The comments below are broken into two groups: technical, and editorial.

### TECHNICAL

- 1- P-11, L-8 – Clarify the statement starting with "the reviewer". If not in the SAR, state where the complete AMP will be preserved? The AMP is the cornerstone of this whole approach to the renewal assuring safety. Indicate the legal implications of not having the AMP in the CoC with respect to enforcement of the provisions.
- 2- P-18, L22 – Since the event used in the NRC dry storage PRA was a drop event, provide the rationale for indicating that lifting rigs are excluded as important to safety.
- 3- P-34, L-29 – Add another bullet – "Determine that the corrective action will not exacerbate the degradation or create another aging issue on either the component in question or another component important to safety". In the reactor they thought they solved the baffle flow degradation issue by changing the flow pattern only to find that they only shifted the problem to another part of the fuel assembly. The issue continued at a higher rate and they had to go back and have another fix.
- 4- P-36, L-22 - Based on your definition of "operating experience" starting on the previous page and continuing through line 7 of this page, operating experience does not have occur for the cask or site in question. A new AMP may have significant operating experience to call upon. Suggest deleting or modifying the sentence starting on line 22.
- 5- P-39, L-14 – Based on the discussion in the previous paragraph, add the following at the end of line 14 "or time indicated in the CoC"
- 6- P-46.L-30 – There is no regulation or guidance that requires the use of an inert atmosphere to dry store SNF. It is recommended in NUREG-1536, but not required. CANDU fuel is stored in air. If the temperature is low enough, or the condition of the fuel or cladding doesn't matter such as the storage of fuel rod fragments, PWR fuel could also be stored in air or nitrogen.
- 7- P-48, L-4 – Define "moderate": its use goes counter to the guidance in this document not to use unquantifiable terms.
- 8- P-48, L-7 – In the initial application the applicant is supposed to analyses off-normal events per 10 CRF 72.236(l) "The spent fuel storage cask and its systems important to safety must be evaluated, by appropriate tests or by other means acceptable to the NRC, to demonstrate that

they will reasonably maintain confinement of radioactive material under normal, off-normal, and credible accident conditions". If the analysis showed permanent deformation but no implication for safety, under the wording in this sentence the off-normal event would have to be classified as an accident. Reword the sentence.

- 9- P-48, L25 – This is not a definition of "retrievability" just a statement of why it is necessary. Provide a definition of "retrievability"
- 10- P-B16, - Define "finding".
- 11- P-B13, - Terms such as "spalling", "scaling", "curling", "deflections", "honeycombing", and "popouts" should be defined. Suggest doing it in a footnote. "Adequate" and "heavy" are unquantifiable terms. Either define or change wording.
- 12- P-B20, 4<sup>th</sup> paragraph - The guidance in ISG-24, and Appendix D gives the applicant a way to use the results of a demonstration if the boundary conditions on burnup, temperature, and cladding type, of the demonstration are not met. Add a statement to this effect in the AMP.
- 13- P=B25 – item #2 after "surrogate experiment" -Add "of a duration similar to that specified in Appendix D".
- 14- P-C1, L32 – A couple of examples are given but specific guidance as to how these parameters should be taken into account when determining the lead system should be given.
- 15- P-C2, L7 – The tendency will be to try and get all the necessary information by examining one system. The sentence starting "Different lead systems..." should be emphasized in bold.
- 16- P-C2, L 14-18 – This is sort of a chicken or the egg situation. Shouldn't the examination of the lead system be held to the same criteria as specified in the AMP for that type of inspection? On the other hand the AMP won't be available until the application is submitted. What is the value of the lead inspection if it isn't held to the same standards as the future inspections? Suggest providing some guidance on the inspection techniques to be used for the lead system inspection.
- 17- P-C2 L-19 – Some explanation should be given to what needs to be provided by the applicant to address the issue of "when a visual examination appropriate.
- 18- P-C3, L15 – Isn't the use of "subset of sites considered bounding..." a contradiction to the guidance on page C2 that says "applicant should not refer to inspections done at other sites"? Please reconcile.

## EDITORIAL

- 1- The abstract really isn't an abstract telling why the work was done, how the work was done, and what were the results or outcome. It was more like guidance on who should use the document and that it may be revised in the future. Suggest providing a true abstract or summary so a reader can decide whether they want to delve into the document in detail.
- 2- P-ix L-33 – "KJ" should be "kj". Only proper names are capitalized in units unless the capital has special meaning
- 3- P-2, L-9 – NUREG-1927 specifically excludes the MRS from the guidance. Other than some statements in 10 CFR 72 with regard to financial responsibility (72.22(5)(ii), emergency plans (72.32(16)(b), which are excluded from this document, and statements related to the NWPA there is nothing in 10 CFR Part 72 that technically excludes the guidance in this document from also being applicable to an MRS. In light of the DOE preparation for an interim storage site, an MRS may be a possibility. Since the fuel going into an MRS would have been previously stored

at another site the considerations in this document would be applicable especially the aging management. So that planners for an MRS might know the technical issues they may have to address, there should be a footnote indicating that the technical considerations in this document would also be applicable to an MRS.

- 4- P-11, L-27 – This is a repeat of line 1&2 on the same page.
- 5- P-36, L-13 – The use of “repository” in this context for experience-documentation is a poor choice. Suggest changing to something like “recognized and managed data base” or something similar.