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Revisions to Transportation Safety Requirements and Compatibility with International Atomic Energy Agency Transportation Requirements

Comment On: NRC-2016-0179-0078
Harmonization of Transportation Safety Requirements with IAEA Standards; Correction

Document: NRC-2016-0179-DRAFT-0083
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Submitter Information

Email: fischelsra@centrusenergy.com
Organization: Centrus Energy

General Comment

See attached file(s)

Attachments

10 CFR 71 - 87 FR 55708 - Comments

10 CFR 71 Comments (87 FR 55708) and
DG-7011 (ML22223A085)

10 CFR Part 71 Comments

Issue 1 – § 71.15 – Fissile Exemption comments – no comments

Issue 2 – Reduced External Pressure Test for NCT – no comments.

Issue 3 – Type C Package Standards – no comments.

Issue 4.1 - The conversion from "g-cal/cm2" to "W/m2" must also have some implied time factor. "g-cal/cm2" is a total heat absorbed per unit area. Watt/m2 is a heat absorbed per unit time per unit area. If the units are changed in 10CFR71, there should be associated wording that removes the time dependence.

Issue 4.2 - This change could drive the need for retesting if a certificate holder wishes to have a revised certificate the meets 10CFR71 as proposed, since the new requirement to include insolation in equilibrium will meet that the initial temperature for Testing must be at least 100.4F (38˚C). It seems that an option for evaluation (rather than testing) of the effects of this change in initial condition is warranted.

Issue 5 – Suggest that this rule change should be clarified to match the wording of the related 10CFR70.24 which specifies that dose should be based on "dose in soft tissue".

Issue 6 – Deletion of LSA-III Leaching Test – no comments.

Issue 7 – Inclusion of New Definition of SCO-III – no comments.

Issue 8 – § 71.55(g) – while we agree with the addition to harmonize the regulations with this SSR-6 requirement it has the potential for an unintended consequence if current UF6 packages have not been evaluated for this condition as part of the drop tests. Some may speculate this could be easily remedied by doing computer modeling of the package, but some international regulators will likely require a drop test to confirm the model. This is a costly exercise as it requires a new UF6 cylinder filled with an acceptable surrogate, which too has been a subject of contention in recent years in the international community, an overpack, then the use of a testing facility, and finally analysis of the results. Additionally, the lead times in today's market are substantial in obtaining the necessary components to undertake a drop test which may further complicate licensing efforts. This then becomes a financial liability for the package owner which some may not be interested in undertaking which would put users of the package at risk. NRC should contact the current UF6 package owners (UX-30 and DN-30) to ensure this effort does not cause an unintended consequence. Additionally, it's suggested that NRC add language to accommodate for UF6 cylinders that do not have plugs (i.e. 1S, 2S, 5", 8", and 12" UF6 cylinders).

Issue 9 – Aging Mechanisms and Maintenance Program – no comments.

Issue 10 – Revision of Transitional Arrangements – no comments.

Issue 11 – Inclusion of Head Space for Liquid Expansion - It is not clear whether this proposed change will add burden for the evaluation of ullage for material transport that could undergo a phase change from solid to liquid (e.g., UF6) in some hypothetical conditions such as fire. Those considerations have been incorporated into the existing package designs for UF6 handling; however, the new wording is not clear as to whether any additional burden of analysis or testing is required for certificate changes for those UF6 packages.

Issue 12 – § 71.106 – The modification of 71.106 to require a "no change" letter every two years does not seem necessary, cost effective, or add value to the regulations. Currently 71.106 (b) requires all changes that did not reduce the commitments be submitted to NRC every 24 months. As such, it could be assumed no changes were made if no notification was performed. This could further be confirmed when this area is inspected. Several other requirements licensees currently adhere to do not require a "no change" letter for similar activities. Making Part 71 consistent with Part 50 requirements does not seem necessary or cost effective, while continuing to have it consistent with other NRC regulations (e.g Part 95, 70, etc.) seems more appropriate as it seems Part 50 is the outlier here. Additionally, having a reporting requirement in RG 7.10 that is not in the regulations appears to be circumventing the regulatory process. Making a "no change" notification to NRC is an additional administrative burden that is not as simple as just typing a quick letter and transmitting it to NRC. This process has burden on the licensees as most will require an internal review of the letter for accuracy of content and possible commitments being made. This review process takes manhours to complete and is not a simple 30 minute process. It is recommended this change not be enacted and DG-7011 (ML22223A085) revising RG 7.10 be changed to reflect the regulations in not requiring a "no change" letter be provided every 24 months.

Issue 13 – § 71.22 and 71.23 – Deletion of Type A package limitations – no comments.

Issue 14 – Deletion of 233U Restriction in Fissile General License – no comments.

Issue 15.1 – Deletion of Duplicative Reporting Requirements – no comments.

Issue 15. 2 – Revision of LSA Definition – no comments.

Issue 15.3 – Appendix A – NRC is considering removing Appendix A from 10 CFR 71 and simply referencing the equivalent information in 49 CFR 173, Subpart I. This is a recommendation that we support in that it will simplify the requirements and minimize the potential for errors in both the regulations and licensee activities. Routinely licensees reference Appendix A for information in their package safety evaluations or other related documentation. However, if a conflict exists between Appendix A and the information in 49 CFR 173, Subpart I, it has the potential to cause a non-compliance with either NRC or DOT for the issue. Having one source of the information to maintain by the USG and one source for licensees to reference simply enhances transport safety, minimizes the potential for error, and makes the process more efficient due to maintaining one set of requirements vice two with the same information.

Issue 15.4 – Revision of Agreement State Compatibility Categories – no comment.

DG-7011 Comments

1. It is not clear from the markup if any text or content from the former Section 2.2 “Materials” will remain. It is assumed that same content is captured in the new Section 7.

2. 2.5.1, 5th bullet: The bullets provided in this section are identifying items that should be addressed; however, the 5th bullet implies acceptance criteria rather than a need for evaluation. This bullet should be changed to “Inelastic deformation of the containment closure and seal system should be evaluated to determine its effects on containment.”

3. 3.3.1, 2nd bullet: This bullet includes general process condition changes; however, it includes “ullage” as a process condition. “ullage” is a noun that refers to the free-space/volume in the container. This parenthetical should change “ullage” to something like “change in ullage volume” as might occur if the container is crushed or dented. Note that Section 3.5 captures this concept by requiring consideration of “change of ullage”.

4. Section 5.4.1 and 5.4.4: The addition of “dose equivalent rates” should be changed to specify “dose equivalent rates in soft tissue”. The conversion from dose to dose equivalent will require application of dose conversion factors that could vary with material. The intent is dose to a person but those conversion factors exist for dose to other materials/items (e.g. to silicon), and weighting factors could further complicate the issue as the damage potential is not the same for all organs. The use of the phrase “soft tissue” is at least consistent with the 10CFR70.24 criteria for CAAS detection which is concerned with dose to humans.

5. 6.1.2: This section requires inclusion of Monte Carlo uncertainty; however, that implicitly excludes the use of deterministic transport codes in favor of Monte Carlo transport codes. The restriction is unnecessary and is likely not part of existing certificate holder analyses in many cases.

6. 6.9: This section related to burnup credit only allows the credit to be taken for light water reactors. This will negate that credit for non-light water reactors such as helium cooled and could adversely affect packaging spent fuel from those other reactor types.