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DOE Packaging Certification Program

**Safety Evaluation Report for
Request for Authorization of Maintenance Inspection Reuse
Criteria for 9516 Package Graphite Filler and Support
Blocks**

Docket No. 17-44-9516

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Date:

1/18/18

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This Safety Evaluation Report (SER) documents the U.S. Department of Energy (DOE) Packaging Certification Program (PCP) independent technical review of the application submitted by the Idaho Operations Office (DOE-ID) to amend DOE Certificate of Compliance (CoC) Number 9516, Revision 3, to authorize reuse of Graphite Filler Block and Support Block components.

Evaluation

By memorandum ^[1] attached to email dated September 7, 2017, as supplemented ^[2] December 4, 2017, DOE-ID (i.e., the applicant) requested an amendment to DOE Certificate Number 9516, Revision 3, to authorize reuse of Graphite Filler Block and Support Block components. Currently, these components are replaced after each use of the package. The benefits to DOE for reusing these components are reduced operating cost of the package and waste minimization.

The Graphite Support Blocks are defined in Drawings 756184 and 756185 and the Graphite Filler Blocks are defined in Drawing 756183 of the CoC and are both identified as Quality Level (QL) 3 items (minor importance to safety) in the Safety Analysis Report for Packaging (SARP) for the 9516 Package, Revision 1. Routine handling during loading and unloading operations and normal conditions of transport of the package causes incidental damage to these components, which include minor scratches, nicks, chips, and cut-lines. The applicant proposes to reuse these components when the damage observed is localized and presents no adverse effect on the form, fit, or function of the components, consistent with superficial defects described in 10 CFR 71.87(b).

The amendment request was supported by a technical justification document ^[3] prepared for DOE-ID by the Idaho National Laboratory (INL) to supplement the SARP and CoC. The technical justification was revised and re-submitted ^[4] to DOE-PCP in response to a question (Q1) by PCP staff. This SER is based on staff's review of the re-submitted technical justification document (TJD).

The maintenance reuse inspection criteria in Table 1 of the TJD includes a brief description of the component's safety function, defines acceptable non-structural damage from normal use and handling, and instructions for cleaning the components and as an aid to inspection. The TJD evaluated graphite components meeting this criteria in the context of the thermal, containment, shielding, and criticality safety features of the package to demonstrate that there will be no adverse effects to the safety of the package by reusing these components.

PCP staff reviewed the TJD and agrees that non-structural damage to graphite components, as defined in Table 1, does not effect the package's structural, thermal, containment, shielding, and criticality safety performance. Non-structural damage to these components is consistent with superficial damage described in 10 CFR 71.87(b) and does not impair the physical condition of the package.

Based on the statements and representations in the INL technical justification, and PCP staff's confirmatory evaluation describe in this SER, staff finds this amendment to the package acceptable and will provide reasonable assurance that the regulatory requirements of 10 CFR Part 71 have been met subject to the Conditions in the CoC.

Condition of Approval

The certificate revision was changed from Revision 3 to Revision 4, with the following changes:

- Condition 5.(d)(8) was revised to add “In addition, Graphite Support (Drawings 756184 and 756185) and Filler Block (Drawing 756183) components meeting the criteria in Supplement 5.(e)(3) are authorized for reuse in the package.”
- Condition 5.(d)(13) was revised to “Revision 3 of this certificate may be used until December 31, 2018.”
- Supplement 5.(e)(3) was added for *Technical Justification for Re-Use of 9516 Package Graphite Support Block and Graphite Filler Block Components*, G. Hula and G. Nelson, Idaho National Laboratory, November 22, 2017.

All other conditions of the certificate remain the same.

Conclusion

Based on the statements and representations in the INL technical justification and PCP staff's confirmatory evaluation, staff finds reuse of the Graphite Support Block and Graphite Filler Block Components does not affect the performance of the package and provides reasonable assurance that the regulatory requirements of 10 CFR Part 71 have been met, subject to the conditions above.

References

- [1] *Request for Authorization of Maintenance Inspecting Reuse Criteria for 9516 Package Graphite Filler and Support Blocks, Docket 17-44-9516 (NPD-17-007)*, Memorandum from B. Leake to J. Shuler, not dated (included as an attachment with email dated September 9, 2017 from C. Friesen to J. Shuler, Subject: *Memo – 9516 Graphite Filler and Support Block Reuse*)
- [2] *Response to Q1 from Review of Request for Authorization of Maintenance Inspection Reuse Criteria for 9516 Package Graphite Filler and Support Blocks, Docket 17-44-9516, CCN 241658*, Letter from S. Johnson to Carl Friesen, November 22, 2017 (included as an attachment with email dated December 4, 2017 from C. Friesen to J. Shuler, Subject *RE: Q1 for 9516 Package Graphite Filler and Support Block Reuse (Docket 17-44-9516)*)
- [3] *Technical Justification for Re-Use of 9516 Package Graphite Support Block and Graphite Filler Block Components*, G. Hula and G. Nelson, August 7, 2017

- [4] *Technical Justification for Re-Use of 9516 Package Graphite Support Block and Graphite Filler Block Components*, G. Hula and G. Nelson, November 22, 2017