



**EM Environmental Management**


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**DOE Packaging Certification Program**

**Safety Evaluation Report for  
Request to Amend Certificate of Compliance Number 9979  
for a Replacement Silicone Gasket Material for 9979  
30-Gallon Drum**

**Docket No. 17-09-9979**

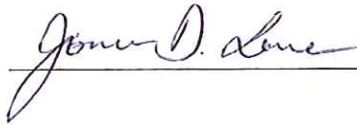
Prepared by:

  
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Date: 8/23/17

James M. Shuler  
Manager, Packaging Certification Program  
Office of Packaging and Transportation

Approved by:

  
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Date: 08/22/2017

Joanne D. Lorence  
Headquarters Certifying Official  
Director  
Office of Packaging and Transportation

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 Savannah River Operations Office (SR) to amend DOE Certificate of Compliance (CoC) Number 9979, Revision 6, to authorize a new 30-gallon drum gasket compound/material for the Model 9979 package.

## Summary

By memorandum <sup>[1]</sup> dated March 3, 2017, as supplemented <sup>[2]</sup>, SR requested an amendment to DOE CoC 9979 for the Model 9979 package to authorize a design change to the gasket material of the 30-gallon drum closure. The compound for this gasket (S7364-60) was discontinued by the supplier. The replacement gasket compound (S7426-60) is equivalent, in form, fit, and function in use on the packaging and the compound material meets the ASTM D2000 specifications required by the SARP.

Based on the statements and representations in the SARP Revision 4, as supplemented, and PCP staff's confirmatory evaluation as summarized in this SER, staff finds this amendment to the Model 9979 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.

## Evaluation

By memorandum dated March 3, 2017, as supplemented May 19, 2017 by Drawing *MODEL 9979 TYPE AF 30-GALLON DRUM LID GASKET*, R-R4-G-00062, Revision 4B, and Revision 5b page changes to the Safety Analysis Report for Packaging (SARP) <sup>[3]</sup>, SR requested an amendment to DOE CoC 9979 for the Model 9979 package to authorize a design change to the gasket material of the 30-gallon drum closure. The original compound for this gasket (S7364-60) was discontinued by the supplier.

The Model 9979 package consists of a 30-gallon confinement drum nested inside an internally insulated 55-gallon overpack drum. The 30-gallon confinement drum secures the package payload, thereby providing the capability (a) to prevent loss or dispersal of its radioactive contents when the package is exposed to the Normal Conditions of Transport (NCT), and (b) to ensure that the fissile material contents remain subcritical when the package is exposed to both the NCT and the Hypothetical Accident Conditions (HAC), as required by 10 CFR 71.

The silicone gasket for the 30-gallon drum is a Quality Category "A" item, which is critical to safe operation of the package. The approved gasket compound (S7364-60) specified in the 9979 SARP has been discontinued by the supplier, Parker Hannifin Corporation, who a specified replacement compound (S7426-60). The applicant demonstrated by reference to supplier material reports that the new gasket compound meets the ASTM D2000 specifications as required by the SARP, and therefore is an equivalent substitute. In addition, the applicant performed a section-by-section review of the SARP to evaluate the effect of the compound change of the gasket material to ensure the SARP analysis remains valid. The replacement

gasket compound (S7426-60) is equivalent, in form, fit, and function in use on the packaging and the compound material meets the ASTM D2000 specifications required by the SARP.

In response to questions from PCP staff, the applicant submitted the drawing and page changes to supplement the SARP Revision 4. Staff performed a section-by-section confirmatory review of the SARP, as supplemented, and found that the new silicone gasket compound does not affect the safety performance of the package.

Based on the statements and representations in the SARP Revision 4, as supplemented by Drawing R-R4-G-00062, Revision 4B and SARP Revision 5b page changes, and PCP staff's confirmatory evaluation, staff finds the design change does not affect the performance of the package will provide reasonable assurance that the regulatory requirements of 10 CFR Part 71 have been met.

### **Condition of Approval**

The certificate revision was changed from Revision 6 to Revision 7, with the following changes:

- Drawings 5.(a)(3) R-R4-G-00062 was revised from Revision 3 to to Revision 4B.
- Conditions 5.(d)(14) was revised to authorize use of Revision 6 of the CoC until February 28, 2018.
- Supplement 5.(e)(3) was added for *Safety Analysis Report for Packaging – Model 9979 Type AF-96*, S-SARP-G-00006, Revision 5b, pages changes, May 19, 2017.

All other conditions of the certificate remain the same.

### **Conclusion**

Based on the statements and representations in the SARP Revision 4, as supplemented by Drawing R-R4-G-00062, Revision 4B, and SARP Revision 5b page changes, and PCP staff's confirmatory evaluation, staff finds the design change does not affect the performance of the package will provide reasonable assurance that the regulatory requirements of 10 CFR Part 71 have been met, subject to the conditions above.

### **References**

- [1] *Submittal of the Safety Analysis Report for Packaging (SARP) Model 9979-Replacement Silicone Gasket Material for 9979 30-Gallon Drum and SARP Chapter Evaluation*, Memorandum from J. Kekacs to J. Shuler, March 3, 2017
- [2] *Submittal of the Responses to Q-1 s on the Safety Analysis Report for Packaging (SARP) Model 9979- Replacement Silicone Gasket Material for 9979 (Memorandum, Shuler to Kekacs, Q1 Comments from Review of Model 9979-Replacement Silicone Gasket Material, 04/13/17)*, Memorandum from J. Hynes to J. Shuler, May 19, 2017
- [3] *Safety Analysis Report for Packaging – Model 9979 Type AF-96*, S-SARP-G-00006, Revision 4, March 2015