

August 7, 2012

Ms. Sarah Marshall  
Licensing Engineer  
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Oxfordshire, OX14 3DB, United Kingdom

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR REVIEW OF THE MODEL  
NO. 3979A PACKAGE

Dear Ms. Marshall:

This letter is in response to your letter, dated April 19, 2012, in which you requested our assistance in evaluating the Model No. 3979A package. To assist with our review, the U.S. Nuclear Regulatory Commission staff needs the information identified in the enclosure to this letter. Discussion of these Requests for Additional Information and a response date occurred on August 7, 2012.

We request that you provide this information by September 6, 2012. Inform us at your earliest convenience, but no later than August 23, 2012, if you are not able to provide the information by that date. If you are unable to provide a response by August 23, 2012, please propose a new submittal date and the reasons for the delay.

Please reference Docket No. 71-9337 and TAC No. L24639 in future correspondence related to this amendment request. The staff is available to discuss these questions as well as your proposed responses. If you have any questions regarding this matter, feel free to contact me at (301) 492-3148.

Sincerely,

**/RA/**

William C. Allen, Project Manager  
Licensing Branch  
Division of Spent Fuel Storage and Transportation  
Office of Nuclear Material Safety  
and Safeguards

Docket No. 71-9337  
TAC No. L24639

Enclosure: Request for Additional Information

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Request for Additional Information  
Docket No. 71-9337  
Model No. 3979A Package

By application dated April 19, 2012, the Croft Associates Limited submitted an amendment request for the Model No. 3979A package. This request for additional information (RAI) identifies information needed by staff in connection with its review of the application.

Each individual RAI describes information needed by the NRC staff for it to complete its review of the application to determine whether the applicant has demonstrated compliance with the regulatory requirements.

### **General Description Review**

- 1.1 Identify the components classified as important to safety and their classification category (A, B, or C), or identify where this information appears in the application; i.e., SAR section, licensing drawing(s), etc.

Per the guidance in NUREG-6407, components should be identified as either important to safety (ITS) or not important to safety, and ITS components should be further classified as Category A, B, or C. Quality records for Category A, B, and C components must also be maintained as described in NUREG-6407 in conjunction with the record retention requirements identified in 10 CFR 71.91 and 71.135. This information is typically provided on the licensing drawings submitted with the application.

This information is necessary to satisfy the requirements in 10 CFR 71.101 and 71.107.

- 1.2 On licensing drawing 1C-6044, identify the physical meaning of "3.100 Ø 2.985" as well as the correct dimension; i.e., 3.100 Ø 2.985 vs. 3.100 Ø 2.895.

On licensing drawing 1C-6044, Figure 1 identifies the O-ring thickness as 3.100 Ø 2.985, and Figure 2 identifies the O-ring thickness as 3.100 Ø 2.895. The O-rings appear solid from the licensing drawings, and it is unclear why differing dimensions are provided.

This information is necessary to satisfy the requirements in 10 CFR 71.33.

- 1.3 Describe how testing the containment vessel lid top component before machining surface C meets the intent of the ANSI N14.5 fabrication leakage rate test when the component is tested before it is in its fully manufactured state, or clarify if a fabrication leakage rate test is performed on the containment vessel lid top after machining surface C.

Licensing drawing 1C-6045, note 2.b. states, "This item is to be helium leak tested in accordance with ANSI N14.5 at the component stage before machining away surface C as indicated below." Table 1 of ANSI N14.5 "Containment boundary test requirements" states the purpose of the fabrication leakage rate test is, "To demonstrate that each packaging, as fabricated, provides the required level of containment." Machining surface C could induce material defects that would not be detected if the fabrication helium leakage rate test is performed prior to machining. However, such defects would be detected if a fabrication leakage rate test is performed on the containment vessel lid top at a later time after machining surface C.

This information is necessary to satisfy the requirements in 10 CFR 71.51(a) and 71.85(a).

- 1.4 Identify the codes and standards applicable to the structural design and fabrication of the package. Provide justification for the removal of the statement from Section 4.1 of the SAR, "The containment system is designed and fabricated in accordance with ASME B&PV Code Section III, Subsection NB," with the replacement of the statement in Section 4.1 of the SAR, "The containment system is designed and fabricated in accordance with licensing drawings 1C-6044, 1C-6045, and 1C-6046 in Section 1.3.2." Similar statements were also changed in Section 2.3.1 of the SAR.

Section 2.5.1.2 of NUREG-1609 provides guidance on identifying codes and standards for Category I transportation packages such as the SAFKEG-LS, and Section 2.5.3.1 of NUREG-1609 states that, if fabrication specifications are prescribed by an acceptable code or standard (e.g., ASME, AWS), the code or standard should be identified on the engineering drawings. Also, unless the application justifies otherwise, the code or standard used to design the package should also be used to fabricate the package. In addition, 10 CFR 71.31(c) requires the applicant to describe and justify the basis and rationale used to formulate the package quality assurance program in the absence of any codes and standards.

This information is necessary to satisfy the requirements in 10 CFR 71.31(c).

## **Structural Review**

- 2.1 Identify the bounding stress design margin for NCT.

The following statement appears on page 2-34 of the SAR: "The g values applied to the model for the drop on the side of the package are low; however the results are bounded by the results of the drop on the corner of the package as the corner drop test has far higher g values applied." This statement contradicts information in Table 2-29 which identifies the lowest design margin as 0.28 as a free drop on side in hot condition under NCT for which the governing stress type is bearing stress under the bolts.

This information is required by the staff to determine compliance with 10 CFR 71.71(c)(7).

## **Materials Review**

- 2.2 Explain the inconsistent references to ASTM 279/279M.

Drawing No. 2C-6175, Rev. C, was changed to remove reference ASTM 279/279M. The reason given for the change is that the standard does not exist. However, Section 2.2.1, "Material Properties and Specifications," Table 2-8 lists specification ASTM A279/A279M throughout.

This information is needed to ensure compliance with 10 CFR 71.31(c).

- 2.3 Explain how moisture cannot develop/form and/or identify steps taken to prevent water from forming/developing between the encased cork material and stainless steel.

An air gap exists between the encased cork and the stainless steel vessel. Temperature inversions may allow water to form between the encased cork and the stainless steel. Over time, this could cause the stainless steel vessel to corrode especially if in the presence of slight fabrication imperfections.

This information is needed to ensure compliance with 10 CFR 71.43(d).

## **Maintenance Review**

- 8.1 Resolve the conflicting design pressures given in Section 8.1.3 of the SAR.

For the pressure test described in the second sentence of Section 8.1.3, the corrected maximum design pressure of 10 bar gauge is not equal to a design pressure of 102 psig.

This information is necessary to determine compliance with 10 CFR 71.85(b).