

March 3, 2006

Mr. Donald W. Olson  
President  
Columbiana Hi Tech, LLC  
1802 Fairfax Road  
Greensboro, N.C. 27407

SUBJECT: CERTIFICATE OF COMPLIANCE NO. 9291 FOR THE MODEL NO.  
LIQUI-RAD (LR) TRANSPORT UNIT PACKAGE

Dear Mr. Olson:

As requested by your application dated August 5, 2005, as supplemented February 17, 2006, enclosed is Certificate of Compliance No. 9291, Revision No. 5, for the Model No. Liqui-Rad (LR) Transport Unit Package. Changes made to the enclosed certificate are indicated by vertical lines in the margin. The staff's Safety Evaluation Report is also enclosed.

The approval constitutes authority to use the package for shipment of radioactive material and for the package to be shipped in accordance with the provisions of 49 CFR 173.471. Those on the attached list have been registered as users of the package under the general license provisions of 10 CFR 71.17 or 49 CFR 173.471. Registered Users may request by letter to remove their names from the Registered Users List.

If you have any questions regarding this certificate, please contact me or Shawn Williams of my staff at (301) 415-8500.

Sincerely,

**/RA/**

Robert A. Nelson, Chief  
Licensing Section  
Spent Fuel Project Office  
Office of Nuclear Material Safety  
and Safeguards

Docket No. 71-9291  
TAC No. L23883

Enclosures: 1. Certificate of Compliance  
No. 9291, Rev. No. 5  
2. Safety Evaluation Report  
3. Registered Users List

cc w/encls 1 & 2: R. Boyle, Department of Transportation  
J. Shuler, Department of Energy  
RAMCERTS  
Registered Users

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## **SAFETY EVALUATION REPORT**

**Docket No. 71-9291**  
**Model No. Liqui-Rad (LR) Transport Unit Package**  
**Certificate of Compliance No. 9291**  
**Revision No. 5**

### **SUMMARY**

By letter dated August 5, 2005, Columbiana Hi Tech, LLC, (CHT) requested a minor change to the drawings and "-96" designation to Certificate of Compliance (CoC) No. 9291 for the Model No. Liqui-Rad (LR) Transport Unit Package. Staff requested additional information (RAI) dated November 7, 2005. CHT submitted a response to the RAI on February 17, 2006.

### **EVALUATION**

By letter dated August 5, 2005, CHT requested "-96" designation to CoC 9291 for the Model No. Liqui-Rad (LR) Transport Unit Package. This application included revised pages to the Safety Analysis Report (SAR) that included minor editorial changes and revisions to meet the current regulation requirements that became effective on October 1, 2004 (69 FR 3698). A minor drawing revision was requested to make the Manual Vent Enclosure (MVE) optional. The MVE does not provide containment and the option of installing a MVE does not affect the package's ability to meet the requirements of 10 CFR Part 71.

In response to the staff's RAI, the applicant submitted a consolidated application on February 17, 2006. Staff reviewed the documents submitted in the consolidated application and concluded that the application incorporated the changes to the SAR that were previously referenced in the CoC.

#### Containment

The final rule, Issue No. 3, adopted changes to the  $A_1$  and  $A_2$  values, with the exception of two radionuclides. CHT updated the containment analysis in Chapter 4 of the SAR to incorporate the revised  $A_2$  values. In general, the  $A_2$  values increased. This caused the calculated allowable leakage rate to increase. The staff reviewed the revised mixture  $A_2$  calculations presented in Table 4-2 and concluded that they were performed correctly. The staff then verified that the previously approved methodology of Section 4.2.1 and Section 4.3.2 was utilized to determine the packages allowable leakage rate for normal conditions of transport and hypothetical accident conditions, respectively. The staff found that the allowable leakage rate was conservative because it used the unrevised information presented in Tables 4-3 and 4-4 and was therefore acceptable.

The post fabrication leakage rate remained unchanged at leaktight conditions, but the periodic and pre-shipment leakage tests were increased to  $1 \times 10^{-3}$  ref-cc/sec, which is justified by the information presented in Chapter 4.

The applicant requested that the MVE be optional. The MVE includes a valve on the outer lid to vent the annulus before removing the outer lid. This valve, the annulus, and outer lid are not part of the containment boundary and thus have no affect upon the containment evaluation.

The staff finds that the package, as revised, meets the containment requirements of 10 CFR Part 71 and the containment criteria of ANSI N 14.5-1997.

#### Evaluation for a "-96" Designation

The amendment also requested a "-96" designation in the package identification number, as specified in 10 CFR 71.19(e). In the February 17, 2006, application, CHT addressed the 19 issues considered in the rulemaking process that resulted in the revised rule (69 FR 3698). The applicant discussed the impacts and effects that each issue of the revised regulations would have on the transportation package and related impacts on the Certificate of Compliance. Based on the statements and representations in the application, the staff concluded that the design has been adequately described and meets the requirements of 10 CFR Part 71 for a "-96" approval.

#### The following changes were made to the Certificate:

Condition No. 1.d. was revised to reflect the new "-96" package identification number.

Condition No. 3.b. has been revised to reflect the consolidated application submittal.

Condition No. 5(a)(1) has been revised to reflect the new name of the package. The Model No. Eco-Pak Liqui-Rad (LR) Transport Unit Package was requested to be changed to Model No. Liqui-Rad (LR) Transport Unit Package.

Condition No. 5(a)(2) was revised to correct the reference to ASME Pressure Vessel Code as Section VIII, Division 1. In the previous CoC, it was incorrectly referenced as Section VII. The words "or polyurethane foam" was also added in the description consistent with the materials authorized in the SAR.

Condition No. 5.(a)(3) was revised to correct the revision number of Drawing No. LR-SAR, Sheets 1, 2, and 3 to Revision No. 7. This editorial change was made so that all four sheets of Drawing No. LR-SAR, have the same revision number.

Condition No. 5(c) was revised to delete the wording "Minimum transport index to be shown on label for nuclear criticality control."

Condition No. 8 of the certificate allows a package to be marked with the previous package identification number, USA/9291/B(U)F-85, until March 31, 2007. This is to allow time to replace the packaging nameplate that shows the revised package identification number, USA/9291/B(U)F-96.

The applicant indicated in the February 17, 2006, response to RAI No. 1-2, that 10 CFR 71.55(f), which addresses packaging design requirements for packages transporting fissile material by air, are not applicable to this package. Therefore, for clarity, Condition No. 9 of the CoC was added to specify that transport by air of fissile material is not authorized.

Condition No. 10 was added to authorize use of the previous revision of the certificate for a period of approximately 1 year.

The Reference Section has been revised to include the consolidated application. All previous supplements have been removed.

As a consequence of the inclusion of the new Condition Nos. 8, 9, and 10, the previous Condition No. 8 was renumbered to Condition No. 11.

## **CONCLUSION**

For the reasons stated in this Safety Evaluation Report, the staff concludes that the proposed changes do not affect the ability of the package to meet the requirements of 10 CFR Part 71.

Issued with Certificate of Compliance No. 9291, Revision No. 5 on  
March 3, 2006.