



# COLUMBIANA HI TECH LLC

*Nuclear Manufacturing Excellence*

June 6, 2014

Division of Spent Fuel Storage and Transportation  
United States Nuclear Regulatory Commission  
11555 Rockville Pike  
M/S 14 A 44  
Rockville, MD 28052

Attention: Norma Garcia-Santos  
CC: Document Control Desk. (Without Attachments)

Subject: Second Request for Additional Information, Docket Number 71-9291 and TAC No. L24787 for Model No. Liqui-Rad Transport Unit Package. (Certificate of Compliance No. 9291)

Ms. Garcia-Santos,

Please find attached CHT's response to the second request for additional information (Ref: NRC Request for Additional Information Number 2 dated 4-15-14).

The revision level of the current SARP is revision 7. Attached, please find a revised package which incorporates the responses to the Second Request for Additional Information (RAI). The attachments include:

- One copy of the consolidated safety analysis report for packaging SARP, Revision 8 as supplemented, June 2014, for the CHT Liqui-Rad (LR) Transport Unit Package.
- Attachment "A" provides instructions for inserting the revised pages into revision 7 of the SARP.
- Attachment "B" provides a listing of the changes made along with an explanation for the modification.
- Attachment "C" provides the changed pages for the SARP.

## Second Request for Additional information (RAI)

### RAI-3.1

Provide the definition of the:

- a. secondary wall for the Liqui-Rad transportation package; and
- b. containment boundary to include the primary and secondary lid closure bolts.

Note: NUREG-1609, Section 4.5.1.1, mentions that the exact boundary of the containment system may include the containment vessel, welds, seals, lids, cover plates, valves, and other closure devices.

UMSSO1

Revise the safety analysis report (SAR) to include these definitions and ensure consistency throughout the document, including Sections 1.2.1.6 and 4.1

This information is required to determine compliance with 10 CFR 71.33(a)(4) which mentions that the description of the package must include identification of the containment system.

### **Response to RAI-3.1**

The Glossary of Terms in the SAR is revised to add a definition for the secondary/upper wall of the LR-230 transportation package; add a definition for the secondary/upper lid flange; change secondary lid to secondary/upper lid; and modify the definition of the containment boundary to incorporate the corrections to the containment boundary definition. Sections 1.2.1.1, 1.2.1.6, 4.1 and Figure 4-1 are corrected to reflect the corrections to the containment boundary definition.

### **RAI-5.1**

Describe the proposed special controls and precautions for handling and unloading and identifying the appropriate method to open the package. Revise Sections 7.1 and 7.2 of the SAR to ensure each closure device of the package is properly installed to account for the potential for a shorter draw pipe or a failed draw pipe-to-primary lid weld.

The staff notes that if the draw pipe does not extend to the bottom of the tank, or the draw pipe-to-primary lid weld fails, the primary lid may have to be removed and secured as part of the unloading and subsequent reloading of the vessel. Additionally, in terms of the containment definition, the filter requirements of paragraph 7.2.g of the SAR should be applied to paragraph 7.2.f when removing the secondary lid. This information is needed to meet the requirements of 10 CFR 71.89 for opening instructions.

### **Response to RAI-5.1**

Any special controls and precautions for handling and unloading and identifying the appropriate method to open the package are already specified in section 7 of the SAR, more specifically in sections 7.1 (loading) and 7.2 (unloading). The proposed changes to the packaging design and operations are below the level of detail currently included in section 7 of the SAR. It is important to note that the weld of the draw pipe to the primary lid is not part of the containment boundary of the package, and therefore that any damage to that weld, should it happen, does not compromise the safety of the package in any way. It is also important to point out that damage to the weld has never been observed: the damage to the draw pipe assembly has always been limited to the draw pipe heat affected zone below the weld. Any damage to the draw pipe would only impact unloading operations of the package:

- A shorter – or even broken – draw pipe has no impact on loading operations, because these operations do not rely on the length of the pipe, or even on its presence, and the package can be loaded without requiring any additional equipment. Therefore, there is no revision needed for section 7.1.

- As for unloading operations, the facilities' operating procedures mentioned in the SAR already cover the case of a shorter – or even broken – draw pipe, and typically involve lowering a smaller-diameter temporary draw pipe through the fill port to unload the contents of the package, after which the temporary draw pipe is removed. For clarification purposes, the following wording has been added at the end of section 7.2(h) of the SAR to address the unloading of packages with shorter draw pipes and to ensure that the package is set aside for maintenance if the draw pipe is found to be damaged: *“A temporary draw pipe, of smaller diameter than the permanent draw pipe, may be inserted through the fill port identified in Detail D of drawing LR-SAR to unload the containment vessel. If the permanent draw pipe is suspected of being damaged, such as by experiencing reduced or no flow when unloading through the permanent draw pipe, then the package shall be emptied using the temporary draw pipe mentioned above, and the package maintained per SAR section 8.2(g)”*, and a new section (g) has been added accordingly to section 8.2 of the SAR to require the following during each yearly maintenance of the package: *“Check that the weld of the draw pipe to the primary lid and the draw pipe itself are in good condition, with no cracks; repair if necessary”*. This ensures that the potential for a failed draw pipe is properly accounted for in the SAR.

The filter requirements of paragraph 7.2(g) cannot be applied to paragraph 7.2(f) as there is no quick disconnect port available on the secondary lid. In addition, we have not experienced an issue where either weld between the draw pipe and the primary lid has failed. As such, we propose to change the term “containment boundary” in 7.2(g) to “containment vessel”.

Should you have any questions or require and/or need additional information regarding this submittal, please do not hesitate to call me at your convenience.

Sincerely,



Robert E. Hypes  
Vice President – Special Projects  
Columbiana Hi Tech, LLC