71-9168

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Mr. E. William Brach, Director
Spent Fuel Project Office
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555

December 08, 2000
579-231-00

Dear Mr. Brach:

SUBJECT: SAFETY ANALYSIS REPORT FOR MODEL NO. 8-120B, REV. 5

Chem-Nuclear Systems respectfully submits the enclosed application for the subject revision to the Safety Analysis Report (SAR) for the CNS 8-120B Certificate of Compliance No. 9168.

The operating procedures specified in Chapter 7 of the SAR have been amended as follows:

- Steps 7.1.9 and 7.1.9.A have been changed to require that the lid bolts be torqued in a two step process.
- Step 7.1.9.A currently states a value of 250 ft-lbs. as the final torque value for the secondary lid. This was a typographical error from Revision 4 to the SAR. The torque value has been corrected to 500 ft-lbs.

In addition, editorial corrections were made to the SAR Table of Contents.

Please remove Chapter 7, the Title Page, and the Table of Contents from Revision 4 of the SAR; and replace them with the Revision 5 attachments included herein.

If you or members of your staff have any questions about the application, or wish to arrange a meeting to discuss the changes we have requested, please feel free to contact Shayne Merritt at (803) 758-1838.

Sincerely,

Patrick L. Paquin
General Manager

Attachments: 1 – Title Page of Revision 5 of the Safety Analysis Report

2 – Table of Contents of Revision 5 of the Safety Analysis Report

3 – Chapter 7 of Revision 5 of the Safety Analysis Report

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Attachment 1

Title Page of Revision 5 of the Safety Analysis Report

SAFETY ANALYSIS REPORT

For

MODEL CNS 8-120B TYPE B SHIPPING PACKAGING

REVISION 5

December, 2000

Submitted by:

Chem-Nuclear Systems, LLC
140 Stoneridge Dr.
Columbia, S.C. 29210

Attachment 2

Table of Contents of Revision 5 of the Safety Analysis Report

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Attachment 3

Chapter 7 of Revision 5 of the Safety Analysis Report

7.0 OPERATING PROCEDURE

This chapter describes the general procedure for loading and unloading of the CNS 8-120B Cask.

7.1 Procedure for Loading the Package

7.1.1 Loosen and disconnect ratchet binders from upper overpack.

7.1.2 Using suitable lifting equipment, remove upper overpack assembly. Care should be exercised to prevent damage to overpack during handling and storage.

7.1.3 Determine if cask must be removed from trailer for loading purposes. To remove cask from trailer:

7.1.3.1 Disconnect cask to trailer tie-down equipment.

7.1.3.2 Attach cask lifting ears and torque bolts to 200 ft-lbs. ± 20 ft-lbs. lubricated.

7.1.3.3 Using suitable lifting equipment, remove cask from trailer and the lower overpack and place cask in level loading position.

NOTE: The cables used for lifting the cask must have a true angle, with respect to the horizontal of not less than 60°.

NOTE: In certain circumstances, loading may be accomplished through the secondary lid; while the primary lid remains on the cask. Alternate "(A)" steps have been included to accommodate this situation.

7.1.4 Loosen and remove the twenty (20) bolts, which secure the primary lid to cask body.

7.1.4.A Loosen and remove the twelve (12) bolts, which secure the secondary lid to the primary lid.

NOTE: The cables used for lifting either lid must have a true angle, with respect to the horizontal, of not less than 45°.

7.1.5 Remove primary lid from cask body using suitable lifting equipment. Care should be taken during lid handling operations to prevent damage to cask or lid seal surfaces.

7.1.5.A Remove secondary lid from cask body using suitable lifting equipment. Care should be taken during lid handling operations to prevent damage to cask or lid seal surfaces.

7.1.6 Inspect cask interior for damage, loose materials or moisture. Clean and inspect seal surfaces. Replace seals when defects or damage is noted which may preclude proper sealing.

NOTE: In the case of not having package designs with the optional drain line, radioactively contaminated liquids may be pumped out or removed by use of an absorbent material. Removal of any material from inside the cask shall be performed under the supervision of qualified health physics personnel with the necessary H.P. monitoring and radiological health safety precautions and safeguards.

NOTE: When seals are replaced, leak testing is required as specified in section 8.2.2.2.

7.1.7 Place disposable liner, drums or other containers into cask and install shoring or bracing, if necessary, to restrict movement of contents during normal transport.

7.1.7.A Process liner as necessary, and cap using standard capping devices.

7.1.8 Clean and inspect lid seal surfaces.

7.1.9 Replace the primary lid on the cask body. Secure the lid by hand tightening the twenty (20) primary lid bolts.

7.1.9.1 Torque, using a star pattern, the twenty (20) primary lid bolts (lubricated) to 250 ft-lbs. ±25 ft-lbs.

7.1.9.2 Re-Torque, using a star pattern, the twenty (20) primary lid bolts (lubricated) to 500 ft-lbs. ±50 ft-lbs.

NOTE : Leak test the primary lid o-rings in accordance with Section 8.2.2.2, prior to shipment of the package loaded with greater than "Type A" quantities of radioactive

material. The vent port shall be leak tested in accordance with Section 8.2.2.2 if it has been removed. For content exemptions of this test, refer to the current Certificate of Compliance No. 9168.

7.1.9.A Replace the secondary lid on the primary lid. Secure the lid by hand tightening the twelve (12) secondary lid bolts.

7.1.9.1.A Torque, using a star pattern, the twelve (12) secondary lid bolts (lubricated) to 250 ft-lbs. ±25 ft-lbs.

7.1.9.2.A Re-Torque, using a star pattern, the twelve (12) secondary lid bolts (lubricated) to 500 ft-lbs. ±50 ft-lbs.

NOTE : Leak test the secondary lid o-rings in accordance with Section 8.2.2.2, prior to shipment of the package loaded with greater than "Type A" quantities of radioactive material. The vent port shall be leak tested in accordance with Section 8.2.2.2 if it has been removed. For content exemptions of this test, refer to the current Certificate of Compliance No. 9168.

7.1.10 If cask has been removed from trailer, proceed as follows to return cask to trailer:

7.1.10.1 Using suitable lifting equipment, lift and position, cask into lower overpack on trailer in the same orientation as removed.

7.1.10.2 Unbolt and remove cask lifting ears.

7.1.10.3 Reconnect cask to trailer using tie-down equipment.

7.1.11 Using suitable lifting equipment, lift, inspect for damage, and install upper overpack assembly on cask in the same orientation as removed.

7.1.12 Attach and hand tighten ratchet binders between upper and lower overpack assemblies.

7.1.13 Cover lift lugs as required.

7.1.14 Install anti-tamper seals to the designated ratchet binder.

7.1.15 Inspect package for proper placards and labeling.

7.1.16 Complete required shipping documentation.

7.1.17 Prior to shipment of a loaded package, the following shall be confirmed:

(a) That the licensee who expects to receive the package containing materials in excess of Type A quantities specified in 10 CFR 20.1906(a) meets and follows the requirements of 10 CFR 20.1906, as applicable.

(b) That trailer placarding and cask labeling meet DOT specifications (49 CFR 172).

(c) That all radiation and surface contamination levels are within the limits of the applicable Federal Regulations.

(d) That all anti-tamper seals are properly installed.

7.2 Procedure for Unloading Package

In addition to the following sequence of events for unloading a package, packages containing quantities of radioactive material in excess of Type A quantities specified in 10 CFR 20.1906(a) shall be received, monitored, and handled by the licensee receiving the package in accordance with the requirements of 10 CPR 20.1906, as applicable.

7.2.1 Move the unopened package to an appropriate level unloading area.

7.2.2 Perform an external examination of the unopened package. Record any significant observations.

7.2.3 Remove anti-tamper seals.

7.2.4 Loosen and disconnect ratchet binders from the upper overpack assembly.

7.2.5 Remove upper overpack assembly using caution not to damage the cask or overpack assembly.

7.2.6 If cask must be removed from trailer, refer to Steps 7.1.3.

7.2.7 Loosen and remove the twenty (20) primary lid bolts.

NOTE: The cables used for lifting the lid must have a true angle with respect to the horizontal of not less than 45 degrees.

7.2.8 Using suitable lifting equipment, lift lid from cask using care during handling operations to prevent damage to cask and lid seal surfaces.

7.2.9 Remove contents to disposal area.

NOTE: In the case of not having package designs with the optional drain line, radioactively contaminated liquids may be pumped out or removed by use of an absorbent material. Removal of any material from inside the cask shall be performed under the supervision of qualified health physics personnel with the necessary H.P. monitoring and radiological health safety precautions and safeguards.

7.2.10 Assemble package in accordance with loading procedure (7.1.8 through 7.1.16).

7.3 Preparation of Empty Packages for Transport

The Model CNS 8-120B cask requires no special transport preparation when empty. Loading and unloading procedures outlined in this chapter shall be followed as applicable for empty packages.

NOTE: Each package user will be supplied with a complete detailed operating procedure for use with the package.