



PDR

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71-9086

Refer to:
HN-E316

October 7, 1980

Mr. Charles MacDonald
Transportation Branch
U.S. Nuclear Regulatory Commission
Washington, D.C., 20555

Subject: Certification of HNDC Model
HN-100 Series 1 Shipping Cask

Reference: HNDC HN-100 Series 1
Radioactive Materials Package
Certificate of Compliance No. 9086, Rev. 5

Dear Mr. MacDonald:

It is requested that the referenced Certificate of Compliance be amended. Enclosed are eight (8) copies of HNDC Drawings Nos. C001-5-9125, Rev. 0, C001-5-9126, Rev. 0, and C001-5-9127, Rev. 0, and Revision 1 of "Addendum #1 Safety Analysis Report for the HN-100 Series 1 Radwaste Shipping Cask". These drawings replace HNDC Drawing Nos. C001-5-9100, Sheets 1, 2 and 3, Revision C and C001-5-9120, Sheet 1, Rev. 0, listed in the current certificate of compliance. It is requested that the certificate be changed to reference the attached drawings.

Attachment A lists the changes which have been made in the drawings and the addendum to the safety analysis report. As discussed in the May 7, 1980 meeting at your offices, the drawings have been revised to show critical features of the cask which are part of the safety analysis. Features which do not affect the safety of the package are shown as typical and are made optional both with respect to usage and materials of construction. The purpose of this revision is to assure conformance with the Certificate of Compliance with respect to safety features and to avoid questions of compliance with respect to accessory equipment and other non-safety related appurtenances.

The drawings and analysis include a new type of lifting lug. This lifting lug has greater strength than those currently in use and will permit the HN-100 Series 1 cask to be handled in the same manner as the HN-100 Series 2 casks. Upon issuance of the revised certificate, HNDC will undertake a program to phase out the old lifting lug design. The other revisions in the safety analysis report are listed in Attachment A. No increase in the authorized weight of the package nor the contents are being requested in this amendment.

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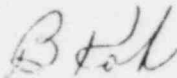
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Enclosed is our check in the amount of \$150 for processing this revision as a minor amendment under category 11e.

Your cooperation in the processing of this amendment is most appreciated. Should you have any questions or require further information, please contact me.

Very truly yours,

for 
Charles W. Mallory
Vice President, Engineering

lh

Attachments

Attachment A

Radioactive Materials Package
Certificate of Compliance No. 9086
HNDC Model HN-100 Series 1

A. General

It is requested that Revision No. 5 of the Certificate of Compliance be issued to cover the following changes in the referenced drawings for the package:

1. Paragraph 5a(3) should be revised to read:
"The packaging is fabricated in accordance with Hittman Nuclear & Development Corporation Drawing Numbers: C001-5-9125, Revision 0; C001-5-9126, Revision 0; and C001-5-9127, Revision 0."
2. These three drawings incorporate those design details and dimensions which are part of the safety analysis of this package. Minimum dimensions have been specified for critical items.
3. Design details and dimensions which are not critical and are not part of the safety analysis of the package have been shown as typical with approximate and/or reference dimensions.
4. Accessory items which are not part of the safety analysis are shown as optional with respect to usage and materials of construction.
5. Permissible repair procedures which make the cask design more conservative than originally designed are included on the drawings.

These revisions are intended to more clearly distinguish those features related to safety from items which are not safety related. The purpose of this revision will be to avoid questions relative to compliance related to non-safety related features.

B. Drawing No. C001-5-9125, Rev. 0

1. This drawing replaces Drawing No. C001-4-9100, Rev. C, Sheet 2 of 3. It includes the detail of the cover lifting lugs, the cover hold down lug and the shield plug hold down lug detail.
2. Reference dimensions and weld designations have been added to the closure details for the cask cover and shield plugs.
3. Approximate and/or reference dimensions are shown on the cask body and covers where the exact dimensions and/or tolerances are not critical to the safety analysis.
4. The part numbers have been renumbered and shown on the drawing to which they apply.

C. Drawing No. C001-5-9126, Rev. 0

1. This drawing replaces Drawing No. C001-5-9100, Rev. C. Sheet 3 of 3. It includes the cask tiedown bracket, shield plug lifting lug and the cask lifting lugs (type optional).
2. Approximate and/or reference dimensions are shown for critical parts.
3. The cask cover and shield plug guide pins are optional both with respect to usage and materials of construction.
4. The orientation of the hold down lugs for both the cover and shield plug are shown on this drawing.
5. The part numbers have been renumbered and shown on the drawing which they apply to.
6. The two types of lift lugs currently used on these casks are shown with the lift lug (Option 3) that will eventually replace the current lift lugs.

D. Drawing No. C001-5-9127, Rev. 0

1. This drawing replaces Drawing No. C001-5-9120, Rev. 0, Sheet 1 of 1.
2. Dimensions on washers, holes and other non-critical attachments have been removed.
3. Three permissible repair options are specified for the replacement of the shield plug studs in holes which have damaged threads.
 - a. Heli coil inserts use material with strength equal or greater than the stud material and the larger diameter increases the effective shear area at the root of the thread.
 - b. Where possible, holes are tapped deeper to provide equivalent thread engagement with the use of longer studs.
 - c. Large studs are used when "a" or "b" cannot be used. This required increasing the diameter of the holes in the shield plug lid. The large holes do not significantly affect the strength of the lid.
4. A security wire for the drain plug has been added to this drawing.

E. Drawing No. C001-5-9100, Rev. C, Sheet 1 of 3

This sheet contained a parts list which has been added to each of the drawings showing the specific part. Consequently, this drawing has been eliminated.

F. Revision 1 to Addendum #1 for the
HN-100 Series 1, Radwaste Shipping Cask

1. The analysis has been revised based on ASTM A516 Grade 55 steel with a minimum yield of 30,000 psi. The various HN-100 Series 1 casks use ASTM A515 Grade 70, ASTM A516 Grade 70 and ASTM A516 Grade 55 steel. The analysis is based on the steel having the lowest strength.
2. The analysis of lateral loads on lifting lugs on the reinforced lifting lugs has been removed since the lugs should only be used with lift beams.
3. The modified design for the lift lugs is analyzed for maximum loading. (See page A-5 through A-7).
4. The analysis of the tiedown loads has been refined by separately calculating the tension in individual tiedowns due to longitudinal, transverse and vertical loading, summing the tension for each type of loading, defining the vertical and horizontal (both transverse and longitudinal) components of loading on the shell, correcting the offset distance and use of reduced values for yield and ultimate stress. (See page A-9 through A-17).
5. The "One Foot Free Drop Analysis" has been revised to show that the deformation with low strength steel will be less than the thickness of the bottom plate. (Page A-18)
6. The description of the package has been revised to reflect the "as built" dimensions and materials of construction consistent with the new drawings.
7. The description of the tie downs and shear blocks used with the HN-100 Series 1 casks has been amended to define the options which can be used.