

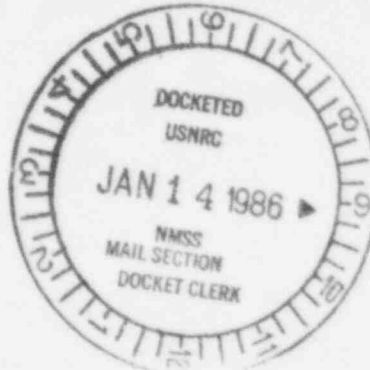
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71-9151

Westinghouse
Hittman Nuclear
Incorporated

A Westinghouse
Subsidiary



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Columbia, Maryland 21045
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Refer to: WHNI-E-853

January 9, 1986

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Mr. Charles MacDonald, Chief
Transportation Certification Branch
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Subject: Certification of Westinghouse Hittman Nuclear Incorporated
HN-100 Series 3 Shipping Cask with Shield Insert

Reference: Certificate of Compliance No. 9151, Rev. 6

Dear Mr. MacDonald:

In response to your September 19, 1985, letter (FCTC: RHO 71-9151) attached are eight (8) copies of the following for your review:

- (1) Attachment A - "Responses to NRC Letter of September 19, 1985."
- (2) Attachment B - Certificate Changes Requested
- (3) Attachment C - Description of Drawing Revisions and Description of Safety Analysis Report Revisions
- (4) Revised Hittman SAR, Doc. No. STD-R-02-001, Rev. 8, complete (including those revised pages submitted with our April 9, 1985, letter).
- (5) Hittman Drawing Numbers:
C001-5-9139, Rev. 6
C001-5-9140, Rev. 7
C001-5-9141, Rev. 3
C001-5-9143, Rev. 6

Per earlier discussions, in addition to responding to the previous NRC comments, Hittman has made three significant changes to the

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Mr. Charles MacDonald

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cask SAR as part of this submittal. First, the cask empty weight has been adjusted from 33,800 pounds to the actual, average as-built weight of 35,200 pounds. As a result of this increase in empty cask weight, the allowable payload has been reduced.

Secondly, a refinement of the calculated empty cask center of gravity along with an evaluation of the waste and container center of gravity has resulted in a more conservative location of the center of gravity for the total package. The analysis also takes into account the shear ring located at the base of the cask.

The third significant change is to incorporate the contents of our Document No. STD-R-02-010, "Addendum to Safety Analysis Report for Shielding Insert for HN-100 Series 3 Radwaste Shipping Cask", into the cask SAR Document No. STD-R-02-001 (Addendum became Appendix A of latter). The analysis included in this new appendix has also been revised according to the first and second items above.

Critical factors of safety have been maintained at the original calculated values or increased as a result of these analysis revisions. The main body of the SAR has been totally retyped on our word processing system so there are some differences in page format and page numbers.

It is noted that the attached documents are stamped "PROPRIETARY" and bear notices relative to the further dissemination of this information. Hittman has no objection to the filing of this material in the Nuclear Regulatory Commission Public Document Room, provided that the notices remain in file with this material.

Very truly yours,



Robert J. Leduc
Director of Engineering

RJL/sm49B

Attachments (W/Admin. Fee Check)

ATTACHMENT A

RADIOACTIVE MATERIALS PACKAGE
WESTINGHOUSE HITTMAN NUCLEAR INCORPORATED
MODEL NO. HN-100 SERIES 3
CERTIFICATE OF COMPLIANCE NO. 9151, Rev. 8

"Responses to NRC Letter of September 19, 1985"

QUESTION #1

It is noted that the revised pages do not have a revision number or date of revision. This condition could make compliance with document control requirements very difficult and should be corrected.

RESPONSE:

From this date forward, we will indicate on each revised SAR page the date of the most recent revision of that page.

QUESTION #2

A note has been added to Drawing Nos. C001-5-9139 and C001-5-9140 making the use of the pins, Items 9 and 4 respectively, optional. The operating procedures, Section 6.0, require the use of either alignment pins or alignment marks to properly align the covers. The drawing should be revised to provide for the alternative method.

RESPONSE:

The notes on the drawings have been revised to indicate the alternate use of alignment marks as required by the operating procedures, Section 6.0 of the SAR.

QUESTION #3

Section 6.0 Operating Procedures. Step 6.1.7 should provide a more specific requirement on the installation of the ratchet binders. It is noted that page 67 of the SAR cites a 100 lb force being applied to the ratchet binder handle.

RESPONSE:

Step 6.1.7 has been revised to indicate the requirement that the ratchet binders must be torqued to 175-200 ft-lbs to effect the desired compression on the primary lid gasket.

Page 70 has been revised to express the 100 lb force in terms of torque (175 to 200 ft-lbs). Note that because of retyping the SAR on our word processor, Step 6.1.7 is now on page 70 rather than page 67.

QUESTION #4:

Section 7.0 Acceptance Tests and Maintenance Program.

- o The information given in paragraph 7.1.1 should be stated on the packaging drawings. The nondestructive examination of welds should be specific as to the method and location of welds to be examined.

RESPONSE:

Notes that detail the specific method and locations of welds which are subject to non-destructive testing have been added to the packaging drawings.

- o Paragraph 7.1.2 and 7.2.2 should cite Appendix E, Air Test Procedure for HN-100 Series 3 cask, STD-P-02-001, Rev. 1.

RESPONSE:

Paragraph 7.1.2 has been revised to indicate the acceptance criteria for the pressure (structural integrity) test.

Paragraph 7.1.3 has been revised to detail the leak test parameters and provide commitments sufficient to justify the removal of Appendix E from the SAR. The leak test discription also distinguishes the leak test from the 8 psig pressure test of Paragraph 7.1.2.

Paragraph 7.2.2 has been revised to delete the repetition of the description of the leak test parameters and now makes reference to Paragraph 7.1.3.

- o Paragraph 7.2.1 should include ratchet binders in the listing of items to be inspected.

RESPONSE:

Paragraph 7.2.1 has been revised to include ratchet binders in the listing of the items to be inspected.

- o Paragraph 7.2.4 should include, as instructions for gasket replacement, Note 3, Drawing No. C001-5-9138, Rev. 9.

RESPONSE:

Paragraph 7.2.4 has been revised to include a reference to the requirements on the packaging drawings.

ATTACHMENT B

CERTIFICATE CHANGES REQUESTED

<u>Certificate Section</u>	<u>Existing Rev. 8</u>	<u>Change To</u>
5.(a)(3)	C001-5-9138, Rev. 7 C001-5-9139, Rev. 4 C001-5-9140, Rev. 5 C001-5-9141, Rev. 2 C001-5-9143, Rev. 5 STD-02-035, Rev. 1 STD-02-036, Rev. 1	C001-5-9138, Rev. 9 C001-5-9139, Rev. 6 C001-5-9140, Rev. 7 C001-5-9141, Rev. 3 C001-5-9143, Rev. 6 STD-02-035, Rev. A STD-02-036, Rev. A
10	Paragraph 8.1 and Figure 1 of Hittman Nuclear & Development Corporation Procedure No. HNDC-0-001-2/3, Rev. 7 (Hittman letter dated April 27, 1983) are deleted. Seals which show any visual defects (cracking, gouging, tearing, etc.) must be repaired in accordance with the referenced procedure and Note 3 on Hittman Drawing No. C001-5-9138, Rev. 7; ...	(Delete First Sentence). Seals which show any visual defects (cracking, gouging, tearing, etc.) must be repaired in accordance with (Delete reference to Procedure and Section 7.0) Note 3 on Hittman Drawing No. C001-5-9138, Rev. 9;...

ATTACHMENT C

DESCRIPTION OF DRAWING REVISIONS

NOTE: Attachment B to Hittman Letter WHNI E-881, dated April 9, 1985, includes details of additional drawing changes which pertain to our request for a revision to the current cask certificate. Please refer to that attachment for those details.

1. Cask Weldment Drawing C001-5-9139, From Rev. 5 to Rev. 6:
 - * Revised Note-5 to include a reference to the alternate alignment marks.
 - * Added Note-6 and referenced same on welding symbols throughout the drawing, as appropriate.
 - * Revised improper weld symbol on Section B-B.
 - * Revised Note-2 to reference Drawing No. C001-5-9140.
 - * Revised Section D-D to correctly show the tie-down lugs in zones B-9 and B-7 and cross hatched both.
2. Cask Primary Lid Weldment Drawing C001-5-9140, from Rev. 6 to Rev. 7.
 - * Revised Note-6 to include a reference to the alternate alignment marks.
 - * Added Note-7 and referenced same on welding symbols throughout the drawing, as appropriate.
 - * Revised improper weld symbols on Sections D-D and C-C.
 - * Revised Note-1 to reference Drawing No. C001-5-9139.
 - * Revised Note-2 to reference Drawing No. C001-5-9141.
 - * Revised dimension tolerance on Section C-C to 0" to 7/16" from 1/16" to 7/16" (0" is preferred condition, anything up to 7/16" is an as-built allowable).
3. Weldments and Details Secondary Lid Drawing C001-5-9141, from Rev. 2 to Rev. 3.
 - * Added Note-8 and referenced same on all weld symbols.
 - * Revised Note-1 to reference Drawing No. C001-5-9140.

4. Details Cask Body Drawing No. C001-5-9143, from Rev. 5 to Rev. 6.

- * Added Note-6 and referenced same on welding symbols throughout drawing, as appropriate.
- * Revised improper welding symbols throughout drawing, as appropriate.

DESCRIPTION OF SAFETY ANALYSIS REPORT REVISIONS

NOTE: Attachment B to Hittman Letter WHNI-E-811 dated April 9, 1985, includes details of additional SAR changes which pertain to our request for a revision to the current cask certificate. Please refer to that Attachment for those details.

1. The contents of Westinghouse Hittman Nuclear Incorporated Document No. STD-R-02-010, Addendum to Safety Analysis Report for Shield Insert for HN-100 Series 3 Radwaste Shipping Cask, were added to Document No. STD-R-02-001, the "original" cask SAR, as Appendix A. All of the revisions discussed below apply to the main body of the analysis and to this appendix. Sections 6.0 and 7.0 of the original text of STD-R-02-010 were deleted because these were a repetition of those same sections in the main body of the analysis. The pages of the now combined SAR have been renumbered sequentially (1 through 148) and the contents of the main body of the "original" SAR have been retyped on our word processing system. Typographical errors and unclear sentence wording were corrected as necessary throughout the now combined SAR.
2. The empty cask weight was adjusted to the actual average as-built weight of 35,200 pounds. This increase requires a reduction in the stated allowable payload (waste and liner) of the cask. This cask weight revision and the corresponding adjustment to individual component weights have been incorporated throughout the analysis. This change was done largely as a clarification to users. The available payload and the package gross weight now agree (rather than continue with the gross weight as the most limiting condition). Our experience is that casks of this design will weigh within a few hundred pounds of the newly incorporated empty weight.
3. The total package gross weight has been slightly reduced throughout the analysis to 53,000 pounds from 53,005 pounds. The 53,005 pound limit reflected more significant digits than were appropriate.
4. Paragraph 5.2 has been revised to use the correct minimum torque for the shield plug bolts (120 ft-lbs was 80 ft-lbs). This is in agreement with the torque cited in paragraph 6.1.8.g. and the values used on the gasket compression nomograph in Appendix D-1.
5. Paragraph 6.1.7 has been revised to stipulate the torque requirements for tightening the primary lid ratchet binders. Correspondingly, paragraph 5.1 was revised to express the tightening of the ratchet binders in terms of torque rather than pounds of force applied to their handles.
6. The acceptance criteria for the 8 psi structural pressure test was added to paragraph 7.1.2.

7. Deleted Appendix E is no longer referenced in Sections 6.0 or 7.0. The leak test is now described and the acceptance criteria is specified in paragraph 7.1.3.
8. Paragraph 7.2 has been revised to clarify the period of the routine technical inspections.
9. Paragraph 7.2.1 now includes the ratchet binders in the list of cask components to be subjected to structural inspections.
10. Paragraph 7.2.2 now makes reference to paragraph 7.1.3 and the repetition of the leak test description has been deleted.
11. Paragraph 7.2.4 now references the packaging drawings as the documents which provide the procedure for replacing defective cask gaskets.

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DESCRIPTION:

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