



HITACHI

GE Hitachi
Nuclear Energy

Donald R. Krause

Mgr., Regulatory Compliance & EHS
Vallecitos Nuclear Center
6705 Vallecitos Rd
Sunol, CA 94586
USA

T 925 862 4360
F 925-304-7435
donald.krause@ge.com

March 1, 2010

Director, Division of Spent Fuel Storage and
Transportation
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-001

ATTN: Document Control Desk

Redacted copy to:

Associate Administrator for Hazardous Material Safety
Pipeline and Hazardous Materials Safety Administration
U.S. Department of Transportation
1200 New Jersey Avenue, S.E.
Washington, D.C. 20590-0001

Attn: Special Permits, PHH-31

Subject: REQUEST FOR ADDITIONAL SHIPMENTS IN THE MODEL No.
GE-100 PACKAGE, CERTIFICATE OF COMPLIANCE NO. 5926

- Reference
- 1) NRC Letter to D.R. Krause, GEH, Authorization for Limited Shipments in the Model No. GE-100 Package, Certificate of Compliance No. 5926, Dated January 16, 2009.
 - 2) NRC Regulatory Issue Summary 2008-18, Information on Requests for Extending Use of Expiring Transportation Packages, Dated August 14, 2008

GE – Hitachi Nuclear Energy Americas, LLC ("GEH") with operations at the Vallecitos Nuclear Center (VNC), Sunol, California hold Certificate of Compliance No. 5926, which expired on October 1, 2008. On January 16, 2009, the NRC amended said Certificate authorizing a total of eight radioactive materials shipments, through December 31, 2010, subject to the conditions delineated in Reference 1.

NMSSDI

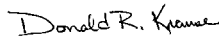
REQUEST FOR ADDITIONAL SHIPMENTS IN THE MODEL No.
GE-100 PACKAGE, CERTIFICATE OF COMPLIANCE NO. 5926
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GEH respectfully request to: 1) increase the total number of authorized shipments from eight (8) to twenty (20) shipments, and 2) to extend the expiration date from December 31, 2010 to June 30, 2011. Attached please find GEH's submittal regarding the information required for the department's consideration, in accordance with NRC RIS 2008-18.

Please note that GEH does not request any changes to the Package design nor previously authorized contents, and that GEH will continue to maintain the Packages in accordance with the maintenance and operating procedures on file with the NRC through the extended time period. Further, GEH understands that this request will not be considered a form of certificate renewal, either under 10 CFR 71.38 or any other NRC regulation.

If there are any questions on this request, or additional information is required, please contact me or our Technical Contact: Mr. Carlos Martinez at (925) 862-4481.

Sincerely,

 Digitally signed by
Donald R. Krause
Date: 2010.03.01
10:50:48 -08'00'

Donald R. Krause
Mgr., Regulatory Compliance & EHS

cc: Gaby Francis (GEH)
Andrew Langston (GNF-A)
Carlos Martinez (GEH)
Louis Quintana (GEH)
Michael Schrag (GEH)
David Turner (GEH)

NRC REQUESTED INFORMATION FOR THE
MODEL 100 - CERTIFICATE NUMBER 5926

GE – Hitachi Nuclear Energy Americas, LLC ("GEH") with operations at the Vallecitos Nuclear Center (VNC), Sunol, California, operates the Model 100, Certificate No. 5926, under Special Permit Authorization No. DOT-SP 14772.

The Model 100 Packaging is currently authorized for the transport of byproduct and irradiated special nuclear material in the form of fuel rods, or plates, fuel assemblies, or meeting the requirements of special form radioactive material; or solid non-fissile irradiated metal hardware and reactor control rods (blades). The Model 100 Packaging is operated and maintained under GEH's Quality Assurance Program; Approval No. 0170 Revision 8, approved by the NRC under Docket No. 71-0170.

GEH respectfully request to: 1) increase the total number of authorized shipments from eight (8) to twenty (20) shipments, and 2) to extend the expiration date from December 31, 2010 to June 30, 2011.

In accordance with NRC RIS 2008-18, the following information is provided for the department's consideration of GEH's request.

(1) Package Information.

NRC Certificate Number. 5926

(2) Identification of Shipments.

(a) Number of shipments; (b) number of packages per shipment; (c) packaging serial numbers; (d) package contents; (e) end use of the radioactive material; (f) shipment origin and destination; (g) mode; (h) general timeframe (e.g., first quarter 2009); and (i) date last shipment will be completed.

In addition to the Co-60 and special nuclear material (SNM) shipments previously requested in GEH's application dated September 29, 2008, (and supplemented by email dated January 16, 2009), GEH proposes to make use of the Model 100 to accomplish additional byproduct shipments. The following summarizes the proposed additional shipments

- a. Number of Shipments: The Model 100 is currently authorized for eight (8) shipments through December 31, 2010. GEH is requesting authorization for twelve (12) shipments, in addition to the eight (8) shipments that are already authorized, for a total of twenty (20) shipments.
- b. Number of Packages per Shipment: There will be one to two Packages used per shipment.
- c. Packaging Serial Numbers: Packaging Serial Numbers 103 and 107.
- d. Package Contents: Package contents will comply with Certificate No. 5926. The twelve (12) additional shipments being requested will be comprised of byproduct materials, namely, Molybdenum-99 (Mo-99).
- e. End Use of Radioactive Material: The end use of the Mo-99 is for product development of technetium generators. This work is part of a project funded by the U.S. Department of Energy to develop domestic supplies of Mo-99.
- f. Shipment Origin and Destination: The Mo-99 shipment originations and destinations are the Oak Ridge National Laboratory, MIT Research Reactor, the University of Missouri Research Reactor, GEH Vallecitos Nuclear Center (Sunol, CA), Lantheus Medical Imaging (North Billerica, MA), or GE Healthcare (Arlington Heights, IL). Origination and destination points depend on reactor availability and the scope of the tests to be performed.
- g. Mode: The Mo-99 shipments will be transported as "Exclusive use", via surface transport.
- h. General Timeframe: Three (3) Mo-99 shipments in 2nd-Quarter 2010, and one or more shipments per quarter through June 2011.
- i. Date Last Shipment will be Completed: The last proposed Mo-99 shipment will be completed in June 2011.

The U.S. Department of Energy (DOE) too has expressed renewed interest in utilizing the Model 100 to accomplish previously authorized SNM shipments. (Since the issuance of the DOT Special Permit, the DOE has not made any SNM shipments using the Model 100.)

Of the four (4) SNM shipments the NRC authorized under the current DOT Special Permit, Idaho National Laboratory (INL) has informed GEH that they have their first SNM shipment scheduled to the Oak Ridge National Laboratory (ORNL) at the end of April 2010, and a second SNM shipment to ORNL in early 2011. The two other DOE planned SNM shipments have been placed on temporary hold, but the DOE wants the option to use the Model 100 in the event the path they are currently pursuing with another package is impacted. In summary, the DOE may require the Model 100 to accomplish planned SNM shipment through June 30, 2011.

(3) Reasons for Requesting Extended Use.

Justification for extending the use of expiring packages must describe why acquiring replacement packages is not practical and why shipments cannot be made before the October 1, 2008, expiration date. The justification must demonstrate that: (a) there are no alternative domestically approved packages available; (b) the contents cannot be reconfigured such that transport can be conducted in accordance with the regulations; and (c) the transport schedule cannot be adjusted so as to be conducted in accordance with the regulations. The justification must also describe any good-faith efforts to acquire replacement packages that meet the current package performance requirements, including a detailed description of past activities and the current status of acquiring replacement packages. In addition, any adverse impacts that will result if the shipment is not conducted should be fully described.

The Model-100 is a versatile, compact, lightweight Type B package. Without authorization for the additional twelve (12) Mo-99 shipments, GEH will not be able to deliver on DOE and customer deliverables, and the project will experience significant costs and program delays. Section 5 delineates GEH's plans for a replacement package for the Model-100 in CY-2011.

The justification for the DOE using the Model 100 for SNM shipments to/from ORNL were previously documented in GEH's original request for extended and limited use of the expired Model 100 Package.

(4) Safety Justification for Continued Use and Proposed Compensatory Measures

Since the expiring package designs may lack safety enhancements included in newer designs, the request must include a safety justification for continued use and a description of compensatory measures that will be used to provide an equivalent level of safety. Examples of compensatory measures that may be

considered are: (a) special package inspections, tests, or determinations that ensure that the packaging is in unimpaired physical condition; (b) transport by exclusive use; (c) transport during time of low road usage; and (d) accompaniment of shipment by escort equipped to effect a recovery in an emergency situation or in case of a transportation accident.

- a. Transport by Exclusive Use as Suggested in RIS 2008-18: The Transport Index (TI) for the proposed Mo-99 shipments will be significantly below the exclusive use criteria for radioactive materials shipments (49CFR173.441), e.g., TI values expected to be less than 5.

GEH shall commit to shipping the Model 100 "Exclusive-Use", "Sole-Use" or "Full-Load" mode of motor transport, as defined in 49CFR173.403. (The "Sole-Use" terminology will be used to differentiate between the two types of "Exclusive-Use" shipments.) The shipments shall include the use of either closed transport or flatbed style transport vehicles. The Package shall be secured during transport so that its position remains fixed during transport. Unless there is an emergency situation, no loading or unloading operations shall be performed during transit. Trained personnel shall perform all loading and unloading operations. Resources for the safe handling of the Package will be provided, including written instructions to the carrier to avoid unnecessary delays, radiation levels or radiation exposure to transport workers or members of the general public. In addition, written instructions pertaining to security measures and emergency response shall be provided to the carrier, as appropriate, should the carrier not have something comparable in effect. The applicable security and emergency response measures will not be delineated in this application.

The shipment of empty Packages will be exempt from sole use transportation vehicle requirements. The empty Model 100 Packages contain no exterior surface residual radioactivity above "background levels". Further, the Packages' internal cavity shall meet the requirements for an excepted, empty packaging (UN 2908).

- b. Transport During Time of Low Road Usage as Suggested in RIS 2008-18: Best effort shall be made to initiate shipment and deliver cargo during off-rush hour traffic, and to use all loops within major cities. Transport restrictions associated with sole use vehicles and cargo will not be delineated in this application.

- c. Accompaniment by Escort Equipped to Affect a Recovery in an Emergency Situation or in Case of a Transportation Accident as Suggested in RIS 2008-18: A hazardous materials recovery escort for the sole use transport vehicle may not be possible to fully implement. A private escort may not have the first responder credentials for each state through which the shipment passes, nor may the local law enforcement and emergency responder support.

The notification process for radioactive material shipments will not be addressed in this application; however, all radioactive materials shipments covered by the Special Permit shall be subject to federal and affected State and local jurisdiction notification process requirements.

(5) A Plan and Schedule to Acquire Replacement Packages

Details about the planned acquisition of replacement packages must be provided, along with key milestones, and proposed implementation dates, unless the licensee can show why acquiring a replacement package is not practical and why shipments cannot be made before the October 1, 2008, expiration date.

In February 2005, GEH enter into a contract with Alpha-Omega Services Inc. ("AOS") to design and license a suite of Type B Transport Packaging Systems, in accordance with the provisions of 10CFR Part 71, as possible replacements for the Model 100.

In October 2007, the application for the new "AOS" Package was submitted to the NRC, and subsequently supplemented in November 2007 under Docket No. 71-9316. On April 7 2008, the NRC staff informed AOS (and GEH) of major technical deficiencies found in the application. By a letter dated April 29, 2008, AOS informed the NRC staff of its withdrawal of the AOS Transport Packaging System application and its intent to resubmit the application upon resolution of the technical and editorial issues identified by NRC staff. The current schedule for the submittal of the amended application is on or about May 2010. To expedite the review process of the application, AOS has limited the authorized content of the AOS Transport Packaging System to byproduct materials in "Special Form". The inclusion of spent fuel, SNM and radioisotopes in normal form will be made at a later time. The new replacement for the Model 100 is anticipated to be available the later half of CY-2011.



SHIPPING NOTICE

(STARRED SPACES TO BE FILLED IN BY M/S)

No. 2061573

CUSTOMER'S
ORDER NO.

INVOICE NO.

DATE

DATE

I.R. NO.

(TYPE SYMBOL I.R.)

S. N. NO.

(TYPE SYMBOL S.N.)
M/S ★

PLEASE SHOW ABOVE S.N. NO. ON ALL
CORRESPONDENCE AND CREDITS
RELATING TO THIS SHIPMENT.

CHARGE
TO

DIRECTOR, DIVISION OF SPENT FUEL STORAGE & TRANSPORTATION
OFFICE OF NUCL. MAT'L SAFETY & SAFEGUARDS; USNRC
WASHINGTON DC 20555-001
ATTN: DOCUMENT CONTROL DESK

SHIP TO

(DO NOT TYPE IN SPACE BELOW)

SELECTED BY	CHECKED BY
PACKED BY	MARKED BY
SHIPPED BY	WEIGHT
BOXING	TRANSP. CHARGES
FREIGHT CLASS	
INTERNAL NO.	CAR NO.
SHIP VIA	

MARKS-SEE NOTE
UNDER INSTRUCTIONS

03-03-10

VAL NUC CTR

PPD.

DATE SHIPPED ★

FROM ★

PPD. OR
COLL. ★

CAR INITIALS & NO. ★

FED EX

F.O.B.

HOW SHIPPED
& ROUTE ★

ACCOUNTING DISTR.

TERMS

INTERNAL INSTRUCTIONS

Mark packages with S.N. No., also with I.R. No. or Customer's Order No. if either appears on this shipping notice.

Show the S.N. No. and Customer's Order No. (if any) on all correspondence.

Invoice Number and Date to be filled in by Accounting.

PACKAGE NUMBERS ★	QUANTITY	DESCRIPTION	SPACE BELOW FOR ACCTG. USE ONLY		
			PRICE	AMOUNT	CLASS
		1 LETTER RE: REQUEST FOR ADDITIONAL SHIPMENT IN THE MODEL NO. GE-100 PACKAGE, CERTIFICATE OF COMPLIANCE NO. 5926 NON-HAZARDOUS SHIPMENT CHARGE 105455 TASK 1 DELIVERY			

FED EX

INDICATE WHETHER PREPAID OR COLLECT

INDIVIDUAL REQUESTING SHIPMENT
C. MARTINEZ

SHIP
VIA

SEND COPY
OF E/R OR S/L TO

CHARGE
MATERIAL TO

COPY
M/S TO

INCOMING
TRANS. TO

INDICATE INFORMATION BY AN "X"

OUTGOING
TRANS. TO

PROPERTY
CUSTOMER

REJECTED
MATERIAL

SALE

FOR TRIAL
TO BE RETURNED:

YES NO

BOXING TO

COPIES OF
S/N TO

DATE ISSUED

DEPT.

LOCATION

03-03-10

VALLECITOS NUCLEAR CENTER, SUNOL CA. 94586

AUTHORIZED SIGNATURE

Dean Martinez

BY

FF-497 (5 SHTS.) 5-65 PTG. 6-88

(2) SHIPPING
BILLING COPY OF SHIPPING NOTICE