



HITACHI

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September 29, 2008

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 LICENSE EXTENSION
PACKAGE IDENTIFICATION Nos. USA/5926/B() F and USA/5939/B() F

Reference: 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 holds Certificate of Compliance Nos. 5926 and 5939, set to expire on October 1, 2008.

GEH respectfully request the subject Packages be considered for extended use through December 31, 2010 in accordance with the referenced NRC Regulatory Issue. Attached please find two GEH's submittals regarding the information requested for NRC's license extension consideration of Certificates 5926 and 5939.

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Please note that GEH does not request any changes to the Package designs nor 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,



Validity
unknown

Donald R. Krause
Mgr., Regulatory Compliance & EHS

Donald R.
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2008.09.29
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cc: Gaby Francis (GEH)
Andrew Langston (GNF-A)
Carlos Martinez (GEH)
Louis Quintana (GEH)
Michael Schrag (GEH)

NRC REQUESTED INFORMATION FOR THE
MODEL 100 - CERTIFICATE NUMBER 5926

VNC currently operates two (2) Model 100 Packages, Serial No. 103 and 107. The primary use of these Packages is for the transport of Special Form Cobalt-60 sealed sources and sealed capsules containing special nuclear material. The Model 100 Packages are operated and maintained under GEH's Quality Assurance Program, Approval No. 0170 Revision 8, approved by the NRC under Docket No. 71-0170.

(1) Package Information.

NRC Certificate of Compliance 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.

Future shipments using the Model 100 Package would include radioactive materials shipments of Cobalt-60 (Co-60) in Special Form and special nuclear material (SNM) shipments. The following summarizes the two types of shipments, including details regarding past and proposed future shipments.

Cobalt-60 Shipments

Pending a license extension for the Model 100 Package, it is projected that two (2) Co-60 shipments would be scheduled in CY-2009 and CY-2010. These Co-60 shipments would be classified as Radioactive Material Quantity of Concern (RAMQC) and consist of sealed sources for industrial and/or radio-teletherapy applications. Said shipments would originate at the GE-Hitachi's Vallecitos Nuclear Center (VNC), Sunol, California (location of the Co-60 special form encapsulation facility) and terminate at QSA Global Inc. ("QSA"), Burlington, Massachusetts (where the individual sources are installed in commercial process/treatment units); these shipments would be transported as "Exclusive Use". The table on the following page lists the Co-60 shipments completed in CY-2008 and projected shipments through CY-2010.

Special Nuclear Material Shipments

Pending a license extension for the Model 100 Package, it is projected that up to four (4) SNM shipments would be scheduled through CY-2010, some of which would be classified as Radioactive Material Quantity of Concern (RAMQC). Said shipments would originate at the Idaho National Laboratory (INL) Advance Test Reactor and terminate within INL or at the Oak Ridge National Laboratory (ORNL) for post-irradiation examination and testing; these shipments too would be transported as "Exclusive Use". The table on the following page lists the SNM shipments completed in CY-2008 and projected shipments through CY-2009.

**WITHHELD PER 10 CFR 2.390 SECURITY
RELATED INFORMATION**

(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 Package is a versatile, compact Type B package. The pending change to a different Type B package will necessitate procedural modifications, personnel re-training, re-tooling and possibly some form of facility modifications at the receiver's end.

Without a license extension for the Model 100 through CY-2010, QSA will not be able to deliver on existing customer commitments. In the case of the SNM shipments, several INL long-term projects involving experimental nuclear reactor fuel designs will be adversely affected if the Model 100 transport package is not available. A change to a different Type B package now would impact program schedule, costs, and deliverables.

Section (5) delineates GEH's plans to acquire a replacement package for the Model 100 at the end of CY-2010.

(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), the external packaging surface dose readings and Curie contents for the shipments in Table 1 and 2 will be significantly below the exclusive use criteria for radioactive materials shipments, i.e., 200 mRem/hr not to exceed 1000 mRem/hr at the surface of the Package (per 49CFR173.441), based on past shipment-types. Historically, comparable shipment-types have not exceeded a TI values less than 5.

GEH shall commit to shipping the Model 100 and 1500 Packages using "Exclusive-Use", "Sole-Use" or "Full-Load" (as defined in 49CFR173.403) mode of motor transport. (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 flat-bed 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, i.e., between the start and end of the transport, and all work shall be performed under the direction of the Shipper or Receiver. Radiologically 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 or unnecessarily radiation levels or radiation exposures 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 for RAMQC and HRCQ shipments should the carrier not have something comparable supplied their employer. 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. Both the Model 100 and Model 1500 Packages contain no exterior surface residual radioactivity above "background levels". Further, since these Packages are used primarily to transport sealed sources which meet Special Form criteria, the Packages' internal cavity is essentially free of loose-surface radioactive contamination.

- B) Transport during time of low road usage as suggested in RIS 2008-18.

Best efforts shall be made to initiate and deliver a radioactive material shipment during off-rush hour traffic, and to use all loops within major cities. Transport restrictions associated with sole use vehicles carrying RAMQC or HRCQ 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 implement. A private escort would not have the first responder credentials for each state through which the shipment passes, nor would have the local law enforcement and emergency responder support. For RAMQC and HRCQ shipments, there is a notification process in place that will not be addressed in this application; however, all proposed RAMQC and HRCQ shipments covered by the Special Permit would be subject to this notification process. The State agencies would have the discretion and option as part of this process to provide escorts for these shipment-types.

- (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 AOS to design and license a suite of Type B Transport Packaging Systems, in accordance with the provisions of 10CFR Part 71, to replace the VNC Model 100 and Model 1500 Packages.

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

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of the technical and editorial issues identified by NRC staff. The current schedule for the resubmit of the application is on or about November 1, 2008. To expedite the review process of the resubmitted application, AOS has limited the authorized content request of the AOS Transport Packaging System to byproduct materials in special form. The inclusion of spent fuel, SNM and radioisotopes in liquid form will be made at a later time. The new replacements for the Model 100 and Model 1500 are expected to be available prior to the requested special permit expires, and no further extension requests for such a permit are expected to be necessary.

NRC REQUESTED INFORMATION FOR THE
MODEL 1500 - CERTIFICATE NUMBER 5939

VNC currently operates one (1) Model 1500, Serial Number 1507. The primary use of this Package is for the transport of Special Form Cobalt-60 sealed sources for medical and commercial applications. The Model 1500 Package is operated and maintained under GEH's Quality Assurance Program, Approval No. 0170 Revision 8, approved by the NRC under Docket No. 71-0170.

(1) Package Information.

NRC Certificate of Compliance Number. 5939

(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.

Future shipments using the Model 1500 Package would include radioactive materials shipments of Cobalt-60 (Co-60) in Special Form encapsulation, dry loaded and unloaded. The following summarizes the proposed Co-60 shipments, including details regarding past shipments.

Cobalt-60 Shipments

Pending a license extension for the Model 1500 Package, it is projected that three (3) Co-60 shipments would be scheduled after October 1, 2008 through CY-2009. These Co-60 shipments would be classified as Highway Route Control Quantity (HRQC) and consist of sealed sources for industrial applications. Said shipments would originate at the GE-Hitachi's Vallecitos Nuclear Center (VNC), Sunol, California (location of the Co-60 special form encapsulation facility) and terminate at J. L. Shepherd and Associates ("JLS"), San Fernando, California (where the individual sources are installed in commercial process irradiators); these shipments would be transported as "Exclusive Use". The table on the following page lists the Co-60 shipments completed in CY-2008 and projected shipments through CY-2009.

(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.

**WITHHELD PER 10 CFR 2.390 SECURITY
RELATED INFORMATION**

The pending change to a different Type B package will necessitate procedural modifications, personnel re-training, re-tooling and possibly some form of facility modifications at the receiver's end.

Without a license extension for the Model 1500 through CY-2010, JLS may not be able to deliver on existing customer commitments. A change to a different Type B package now would impact program schedule, costs, and deliverables.

Section (5) delineates GEH's plans to acquire a replacement package for the Model 1500 toward the end of CY-2010.

(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), the external packaging surface dose readings and Curie contents for the shipments in Table 1 and 2 will be significantly below the exclusive use criteria for radioactive materials shipments, i.e., 200 mRem/hr not to exceed 1000 mRem/hr at the surface of the Package (per 49CFR173.441), based on past shipment-types. Historically, comparable shipment-types have not exceeded a TI values less than 5.

GEH shall commit to shipping the Model 100 and 1500 Packages using "Exclusive-Use", "Sole-Use" or "Full-Load" (as defined in 49CFR173.403) mode of motor transport. (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 flat-bed 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

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performed during transit, i.e., between the start and end of the transport, and all work shall be performed under the direction of the Shipper or Receiver. Radiologically 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 or unnecessarily radiation levels or radiation exposures 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 for RAMQC and HRCQ shipments should the carrier not have something comparable supplied their employer. 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. Both the Model 100 and Model 1500 Packages contain no exterior surface residual radioactivity above "background levels". Further, since these Packages are used primarily to transport sealed sources which meet Special Form criteria, the Packages' internal cavity is essentially free of loose-surface radioactive contamination.

- B) Transport during time of low road usage as suggested in RIS 2008-18.

Best efforts shall be made to initiate and deliver a radioactive material shipment during off-rush hour traffic, and to use all loops within major cities. Transport restrictions associated with sole use vehicles carrying RAMQC or HRCQ 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 implement. A private escort would not have the first responder credentials for each state through which the shipment passes, nor would have the local law enforcement and emergency responder support. For RAMQC and HRCQ shipments, there is a notification process in place that will not be addressed in this application; however, all proposed RAMQC and HRCQ shipments covered by the Special Permit would be subject to this notification

process. The State agencies would have the discretion and option as part of this process to provide escorts for these shipment-types.

(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 AOS to design and license a suite of Type B Transport Packaging Systems, in accordance with the provisions of 10CFR Part 71, to replace the VNC Model 100 and Model 1500 Packages.

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 resubmit of the application is on or about November 1, 2008. To expedite the review process of the resubmitted application, AOS has limited the authorized content request of the AOS Transport Packaging System to byproduct materials in special form. The inclusion of spent fuel, SNM and radioisotopes in liquid form will be made at a later time. The new replacements for the Model 100 and Model 1500 are expected to be available prior to the requested special permit expires, and no further extension requests for such a permit are expected to be necessary.