



International Isotopes Inc.

December 22, 2008

ATTN: Document Control Desk
Director, Division of Spent Fuel Storage and Transportation
Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: Request for Extension, AOS 5979, Type B Package, USA/5979/B().

Dear Mr. Brach,

International Isotopes, Inc. (INIS) intended to utilize the AOS 5979 extension once it had been received by AOS, under the assumption that a mechanism for Party Status, in accordance with Title 49 §107.107, would be in place for authorized users of the container. As this is not the case; INIS hereby submits an Extension Request to continue the utilization of the AOS 5979 Type B Package USA/5979/B (). Please note that Alpha Omega Services, (AOS) is fully aware of and supports INIS's intention to seek this extension.

INIS has worked closely with AOS in their development of the AOS-100 series replacement package. INIS has entered into an agreement with AOS to be their exclusive world-wide distributor of the AOS-100 series containers once these packages are licensed.

As mentioned in AOS's September 17, 2008 letter requesting the 5979 Extension, work on the replacement package began in 2005. The replacement package is expected to be available in approximately two years, one year for licensing and another year for fabrication. INIS intends to utilize the AOS-100 series of containers for Type B Co-60 shipments once the cask is licensed and available.

Until the AOS-100 series of container is licensed INIS desperately needs a Type B package to ship Co-60 sources that are utilized for industrial as well as homeland security purposes.

The AOS 5979 is well suited for INIS's applications. INIS routinely handles the AOS 5979 and has developed handling procedures and specialized fixtures to mate the 5979 cask to our Co-60 hot cells. Unlike other Type B packages available, the 5979 can be utilized with a source can in lieu of a source drawer. This is especially useful when transporting more than one source, or when transporting sources that have external dimensions that are not compatible with a teletherapy source drawer. The 5979 is also compact in size and can be positioned under our Co-60 hot cells to accommodate source transfers between the cask and the hot cell.

The Requested information, per NRC RIS 2008-18, "Information on Requests for Extending use of Expiring Transport Packages" is attached to this letter. INIS recognizes that this request is

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being submitted after the October 1, 2008 deadline, as mentioned above, INIS was under the assumption that the extension provided to AOS could be used if party status was obtained.

If you or your staff has any questions regarding the request, please contact me at 208 524-5300 or via email at jjmiller@intisoid.com.

Sincerely,

A handwritten signature in black ink, appearing to read 'John J. Miller', with a long horizontal flourish extending to the right.

John J. Miller, CHP
Radiation Safety Officer,
International Isotopes, Inc.
4137 Commerce Circle
Idaho Falls, ID 83401

cc:

J. J. Miller file (JJM-2008-31)
Rick Boyle, Department of Transportation
Troy Hedger, Alpha Omega Services

Requests for limited use of these packages after the October 1, 2008, expiration date must address all five elements listed below. NRC will consider these requests on a case-by-case basis. Applicants should note that these requests will not be considered a form of certificate renewal, either under 10 CFR 71.38 nor any other NRC regulation. Licensees or certificate holders who have identified the need to use these packages should provide the following information to NRC and DOT, before the October 1, 2008, expiration date:

- (1) Package Information. NRC Certificate of Compliance Number or DOT Specification Number.
USA/5979/B ().
- (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.
 - (a) INIS anticipates not more than 48 shipments. This estimate is based on no more than two shipments per month beginning in calendar year 2009, for an estimated two years until the AOS-100 series container is licensed and constructed. Source manufacturing campaigns will be scheduled to minimize the number of shipments required to fulfill source demand.
 - (b) Due to the limited availability of the casks, each shipment is expected to consist of one (1) package. However if more than one cask is available and demand warrants, two or three packages may be included in a shipment.
 - (c) Package Serial Numbers: AOS I, AOS II, AOS IIA, AOS IIB and AOS IIIA.
 - (d) Package contents limited to sealed Cobalt 60 (Co-60) sources meeting the Special Form criteria.
 - (e) The sealed sources transported in this package would be utilized in industrial radiography, gauging, homeland security screening applications, and in irradiation cells.
 - (f) Shipments will originate at the International Isotopes, Inc. Idaho Falls facility and would terminate at QSA Global's Burlington MA, facility or at the Southwest Research Institute, (SwRI) facility located in San Antonio, TX.
 - (g) Mode of transportation is highway. Shipments of Category 1 quantities of Co-60 will be controlled in accordance with Order EA -05-006. Shipments of Category 2 quantities of Co-60 will be controlled in accordance with Order EA-03-225. Should these Orders be superseded through rule making, then the shipments will be conducted per the appropriate rule.
 - (h) If the extension is granted, INIS could begin utilizing the 5979 in January 2009.
 - (i) Based on the anticipated licensing and fabrication schedule for the AOS-100 series of containers, the last use of the extension would be in the October 2010 time frame.

- (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 re-configured 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.

As mentioned in the cover letter, INIS has been working with AOS to replace the 5979 container with the AOS-100 series of containers. In fact the INIS Co-60 hot cells were specifically designed to accommodate the 5979 and the AOS-100 packages. As the need for the container is to support ongoing business, the need for the container extends past October 1, 2008. Prior to October 1, 2008, shipments were made utilizing a 20WC-6/Type A configuration.

- (a) Until the AOS-100 series of container is available, the AOS-5979 is the safest option to transport the types of Co-60 sources mentioned in Paragraph 2.(e). There are two reasons for this basis; (1) the AOS-5979 is unique in that it can accommodate a source can in lieu of a source drawer. As with the loading and reloading of the Gamma Knife, sources are placed inside of an easily retrievable can instead of a source drawer that is designed to be loaded into a specific device. And (2) the AOS-5979 is compact in size and weight so that it can be mated beneath the INIS Co-60 hot cells, or loaded into the QSA or SwRI hot cells.
- (b) When possible INIS ships Co-60 sources as Type A quantities, however in many cases a single source exceeds the Type A quantity and cannot be broken down or the number of sources is so great that breaking the shipment down into multiple Type A shipments is not practicable given the number of containers that would be necessary.
- (c) As mentioned above, the need for the extension is based on a continuous demand for Co-60 sources. This demand continues to exist after October 1, 2008.

INIS still intends to utilize the AOS-100 series of containers once this package is licensed and available. INIS has designed our Co-60 hot cells in order to accommodate an AOS-100 container. INIS as well as AOS had expected the AOS-100 container to be licensed by October 1, 2008. This package has been under development since 2005, the Safety Analysis Report is expected to be re-submitted in January 2009. It is anticipated that AOS-100 containers will be licensed, manufactured and available by October 2010.

The Co-60 sources that would be transported using the extended 5979 are utilized for industrial radiography, gauging, irradiation studies and homeland security screening functions. All of these applications are important to safety, security and well being of the general public.

- (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.

The following measures identified in the AOS extension request dated September 17, 2008 which would pertain to the INIS application of the package will be taken to ensure package safety during the extension:

- (a) Review of past maintenance records, to assess the effectiveness of the package (conducted by AOS);
 - (b) Reassess the gasket material selection, including verification of the thermal environment (conducted by AOS);
 - (c) Redraft the drawings for clarity (conducted by AOS, drawings provided to INIS);
 - (d) Reduce the content to: 7,000 Ci of Co-60 in Special Form and 110 watts of maximum decay heat.
 - (e) Conduct all shipments under the extended license in accordance with U.S. NRC Order EA-05-005 (Category 1 quantities) or Order EA-03-225 (Category 2 quantities).
 - (f) Reduce the number of containers in operation to the following; Serial Numbers: AOS I, AOS II, AOS IIA, AOS IIB, and AOS IIIA.
- (5) A Plan and Schedule to Acquire Replacement Packages or Complete Necessary Shipments. 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.

INIS has worked closely with AOS in the development of the AOS-100 series of containers. INIS designed its Co-60 hot cells so that they could accommodate an AOS-100 container. In August of 2007 INIS and AOS entered into a formal agreement that authorized INIS to be the exclusive distributor of the AOS-100 series of container. As indicated in the AOS request for extension, in February 2005, AOS entered into a contract with General Electric Nuclear (GE) to develop a Type B Transport Packaging System, in accordance with the provisions of 10CFR Part 71, to replace Packaging AOS-5979, Docket No 71-5979. The application for the Certificate of Compliance was submitted by AOS to the NRC in October 2007, and supplemented November 2007, under Docket No. 71-9316. In a conference call between AOS and the NRC on April 7, 2008, the NRC staff informed AOS of major technical deficiencies found in the

application. On April 29, 2008, AOS informed the NRC staff, by letter, of its withdrawal of the AOS Transport Packaging System application, and intent to re-submit the application upon revising it to address the open technical issues identified by the NRC staff. Based on information provided by AOS, the current schedule for re-submitting the application is January 2009. Based upon this schedule, it is estimated that a license would be issued by the end of the third quarter 2009. To expedite the review process of the re-submitted application, AOS limited the authorized content request of the AOS Transport Packaging System to various radioisotopes in Special Form only. Application for spent fuel and radioisotopes in Liquid Form will be submitted at a later date.

- (6) Filing Requests for Extension. Requests to extend use of these packages should be sent to NRC, with a copy sent separately to DOT (applications to DOT should be in accordance with 49 CFR 107.105). The requests should be addressed as follows:

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Request for extension will be submitted as instructed above.