



UNITED STATES  
**NUCLEAR REGULATORY COMMISSION**  
REGION I  
475 ALLENDALE ROAD  
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

October 19, 2005

Docket No. 03003575  
Control No. 137781

License No. 01-06571-10

Philip O. Brown  
Radiation Safety Officer  
National Aeronautics and Space Administration  
George C. Marshall Space Flight Center  
NASA, MSFC, AS60M  
Huntsville, AL 35812

SUBJECT: NATIONAL AERONAUTICS AND SPACE ADMINISTRATION, REQUEST FOR  
ADDITIONAL INFORMATION CONCERNING APPLICATION FOR RENEWAL  
OF LICENSE, CONTROL NO. 137781

Dear Mr. Brown:

This is in reference to your application dated September 28, 2005 requesting to renew Nuclear Regulatory Commission License No. 01-06571-10. In order to continue our review, we need the following additional information:

1. 10 CFR 30.32(g)(1) requires, in part, that your application must either identify a sealed source or device by manufacturer and model number as registered with the Commission under 10 CFR 32.210 or with an Agreement State, or contain the information identified in 10 CFR 32.210. Your license will be written in a format which authorizes only those sealed sources identified in your application, which requires modification of some possession limits and forms. In your response to this letter, please provide limits commensurate with your program and sealed source identification in the format shown below. For sealed sources, please list all manufacturers and model numbers that you currently possess or may use in the future. When setting the limits for the materials below, please consider the maximum activity you will have on site at any one time including activity in waste or in storage until transfer. For sealed sources in devices, you may wish to request a possession limit adequate to allow for the possession of a spare source during replacement of the source in the device.

<u>Radionuclide:</u>	<u>Form or Manufacturer/Model No.</u>	<u>Possession limit:</u>
Cesium-137	Sealed Sources (Manufacturer _____, Model No. _____; Manufacturer _____, Model No. _____; Manufacturer _____, Model No. _____; Manufacturer _____, Model No. _____; Manufacturer _____, Model No. _____)	_____ millicuries

Cobalt-60	Sealed Sources	_____ millicuries
	(Manufacturer _____, Model No. _____;	
	Manufacturer _____, Model No. _____;	
	Manufacturer _____, Model No. _____;	
	Manufacturer _____, Model No. _____;	
	Manufacturer _____, Model No. _____)	
List Other	Sealed Sources	_____ millicuries
Radionuclides	(Manufacturer _____, Model No. _____;	
	Manufacturer _____, Model No. _____;	
	Manufacturer _____, Model No. _____;	
	Manufacturer _____, Model No. _____;	
	Manufacturer _____, Model No. _____)	

Please note that when using the model/part numbers that you provided, only the following sources could be verified as being registered in the sealed source registry:

Amersham Model AMC-2084  
Shimadzu Model ECD-14  
Teledyne Isotopes Model C24  
Hewlett Packard G2397A

You may wish to contact the manufacturer and verify the source model numbers as registered. However, you may find in the case of some sources or for sources of < 100 uCi beta, gamma or < 10 uCi alpha emitting sources may not be registered in the Sealed Source Registry. 10 CFR 30.11 indicates that the Commission may, upon application of any interested person, grant exemptions to the regulations as it determines are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest. To support an exemption request, you should provide documentation to show that:

- a. Your licensed activities require flexibility in the types of sealed sources and devices you are authorized to possess and use. You should state if your activities would require only sealed sources which are registered with the NRC or an Agreement State, or if you expect to possess and use sealed sources of unknown origin which may not be registered.
- b. Have procedures in place to verify if any sealed sources you will possess are registered with the NRC or an Agreement State, and confirm that the registered sources will be used under the conditions documented in the Sealed Source and Device Registry.
- c. You are qualified by sufficient training and experience and have sufficient facilities and equipment to safely use and handle the requested quantity of radioactive material in unshielded form if it is found that the sealed source is unregistered or is damaged. In addition, you should provide any revisions to your application to support your radiation safety program for unregistered or damaged sources, such as revised safe handling procedures, survey

procedures, training, facilities and equipment (including instrumentation), waste disposal, etc.

Alternatively you may request these sources be listed as "any" form. In this case you would need to demonstrate that you are qualified by sufficient training and experience and have sufficient facilities and equipment to safely use and handle the requested quantity of radioactive material in unshielded form. In addition, you should provide any revisions to your application to support your radiation safety program for unsealed material, such as revised safe handling procedures, survey procedures, training, facilities and equipment (including instrumentation), waste disposal, etcetera.

2. In your list of radionuclides you submitted Co-57, Na-22, and Ra-226 which are produced in a cyclotron or are a naturally occurring radioisotope and are not byproduct material as defined in 10 CFR 30.4. These materials are not subject to licensing by the NRC. Therefore, you may procure and use it without amendment to your NRC material license. However, you should contact your State regulatory authorities to determine the State licensing or registration requirements for use of this radionuclides. No response is required on this item.
3. Item 5 included a Hewlett Packard G2397A electron capture detector. According to the Sealed Source Registry, this source is a generally licensed source and would not normally need to be added to your specific license. Item 5 also included Th-228 which is generally licensed under 10 CFR 40.22, Small quantities of source material.
4. In Item 5 you listed a Mn-64 source, Isotope Products Laboratories GF-290R. There is no such isotope as Mn-64. If this is a typographical error and you intended Mn-54, please clarify why this source is not currently authorized on your license or do you plan to purchase it after the license is renewed?
5. The supplied list of requested radionuclides in Item 5 did not include radionuclides listed on your current license as items L through T. If you wish them removed, please state so and indicate the materials disposition.
6. Item 7 of the application listed the personnel desired to be named as authorized users. Alan Harmon, Craig Kundrot, and Charles R. Sisk are currently listed on your license. Please confirm that you wish to have these individuals removed.
7. Item 9 of the application described some security details of maintaining sources but did not describe the facilities. Page 8-20 of NUREG 1557, Volume 7 states to include a description of the area assigned for receipt, storage, security, preparation and measurement of radioactive materials. A diagram should be submitted showing the locations of shielding, the proximity of radiation sources to unrestricted areas, and other items related to radiation safety. For facilities where it is anticipated that more than one laboratory or room may be used, a generic laboratory or room diagram may be submitted. Please submit the above information.

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National Aeronautics and Space Administration

8. Item 10 lacked a specific statement per NUREG-1556, Volume 7, page 8-30 that procedures for ensuring material accountability have been developed. Please confirm that procedures have been developed and maintained for ensuring material accountability.

Current NRC regulations and guidance are included on the NRC's website at [www.nrc.gov](http://www.nrc.gov); select **Nuclear Materials; Medical, industrial, and academic uses of nuclear material**; then **toolkit index page**. Or you may obtain these documents by contacting the Government Printing Office (GPO) toll-free at 1-888-293-6498. The GPO is open from 7:00 a.m. to 9:00 p.m. EST, Monday through Friday (except Federal holidays).

We will continue our review upon receipt of this information. Please reply to my attention at the Region I Office and refer to Mail Control No. 137781. If you have any technical questions regarding this deficiency letter, please call Dennis Lawyer at (610) 337-5366 or me at (610) 337-5303.

In order to continue prompt review of your application, we request that you submit your response to this letter within 30 calendar days from the date of this letter.

Sincerely,

***Original signed by Thomas K. Thompson***

Thomas K. Thompson  
Senior Health Physicist  
Commercial and R&D Branch  
Division of Nuclear Materials Safety

cc:  
Pete Allen, Manager Integration Office

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**SISP Review Complete: DRL**

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