THE GEORGE WASHINGTON UNIVERSITY MEDICAL CENTER
WASHINGTON DC

OFFICE OF RADIATION SAFETY

October 19, 2006

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Stephen Hammann
Health Physicist
U.S. Nuclear Regulatory Commission, Region I
Commercial and R&D Branch
Division of Nuclear Materials Safety
475 Allendale Road
King of Prussia, PA 19406-1415

Control No. 139104
License No. 08-00216-22
03009049

SUBJECT: George Washington University - License Renewal

Dear Mr. Hammann:

Following is our response to your request for additional information (4 issues, shown in bold type), as per your letter dated September 27, 2006.

1. **In your application you state that there are sealed sources in your inventory, which you've listed on Enclosure 2, to be disposed of prior to June 30, 2007. A number of these sources are above the limit for exempt quantities yet you have not requested to possess them on your license. You must request possession of these sources in your application or explain how these sources will be accounted for on your license until they are disposed of.**

The sources listed on Enclosure 2 have been disposed of. A shipment was made by GWU on September 11, 2006. We no longer need authorization for possession of these sources.

2. **You have not requested possession of depleted uranium and special nuclear material which are on your current license. Account for disposition of these materials if any were possessed.**

The line item for Depleted Uranium (for use as "counter weighting and/or radiation collimation or shielding") was for possession of DU as a component part (collimator) in a Varian CLINAC 4 (clinical linear accelerator). This unit transferred to the new license issued to the GWU Hospital in November 2000.

Special Nuclear Material in the form of foils was possessed by GWU. This material has been transferred to Jefferson Laboratory (DOE).

Our renewal application did not include these line items since we no longer need possession or use of this material. However, at this time, we are adding possession and use of Special Nuclear Material (see the table in the following response).

Following is a summary of the GWU Broad Scope License with respect to this issue:

The GWU Broad Scope license was renewed in 1995 as Amendment 26 (see NRC Control No. 111230). At the time of this renewal, and based on discussions with current GWU staff, the line item was for the possession of depleted uranium was as a component part (collimator) in a medical linear accelerator used in the GWU Hospital (GWUH). I have spoken with the current Radiation Safety Officer for GWUH, Anis Chowdhury (202-715-4959). Mr. Chowdhury was a member of the

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Radiation Safety Staff for GWU and latter GWUH. He has said that the DU was in a (Varian) CLINAC 4 (clinical linear accelerator).

In 1997, GWU sold the GWU Hospital with continued operation under a partnership, District Hospital Partners, L.P. The GWU Hospital medical use of licensed material continued under the GWU Broad Scope license.

In November 2000 the GWU Hospital obtained a new license (NRC License No. 08-30607-01) for the medical use of licensed material as District Hospital Partners, L.P., dba George Washington University Hospital, (Control Nos. 128349 and 128433 are referenced in correspondences in our file). Possession of depleted uranium was authorized under the new license issued to GWU Hospital. At this time possession of the CLINAC would have passed to GWUH.

Also, in November 2000, GWU requested an amendment for the removal of the medical use of licensed material and transfer of the special nuclear materials license (SNM-1499) to the "Hospital".

The amendment request did not address removal of the possession and use of depleted uranium. This was apparently an oversight. Depleted Uranium continued to be listed as Item 6.G in our license (see Amendment 28 issued November 30, 2000 and subsequent amendments).

3. **For Item 5.B of your application state the maximum activity for each radionuclide to be possessed at any one time and the total cumulative quantity for all radionuclides as specified section 8.5.1 of NUREG -1556, Volume 11, "Consolidated Guidance About Materials Licenses: Program-Specific Guidance About Licenses of Broad Scope".**

We have revised the response for Item 5. (see below), revising the table that prescribes the possession of licensed material. The table now includes a maximum amount per radionuclide and a maximum for the total for each category. We also have 1 additional sealed source that has been added to the listed sealed sources. We have added this source to the authorized use and have revised Item 6 (see below). We have added special nuclear material.

Item 5 RADIOACTIVE MATERIAL

5	a. Byproduct, source, and/or special nuclear material Element and mass number.	b. Chemical and/or Physical Form.	c. Maximum Amount which will be possessed at any one time.
A.	Any byproduct materials with atomic numbers 4 through 83, and half-life less than or equal to 120 days	Any, except sealed sources	1.5 curies per radionuclide and 3 curies total
B.	Any byproduct materials with atomic numbers 84 through 101, and half-life less than or equal to 120 days	Any, except sealed sources	1.5 curies per radionuclide and 3 curies total
C.	Any byproduct materials with atomic numbers 1 through 101, and half-life greater than 120 days	Any, except sealed sources	1.5 curies per radionuclide and 3 curies total See Note 1

D.	Cesium 137	Sealed source (Nuclear Associates/IPL Model 67-356)	0.212 millicuries
E.	Cesium 137	Sealed source (Dupont Model NES-9999-1179A)	0.104 millicuries
F.	Americium 241	Sealed source (IPL AFR-241)	0.5 millicuries
G.	Americium 241/Be	Sealed source (Seaman Nuclear Corporation Model R-50)	40 millicuries
H.	Cesium 137	Sealed source (Eon Corp. Model 64-764)	100 millicuries
I.	Barium-133	Sealed source (Dupont Model NES-9999-1179A)	0.99 millicuries
J.	Special Nuclear Material	Any, except sealed sources	10 microcuries per radionuclide and 50 microcuries total

Note 1: The total unsealed material possessed, with half-life greater than 120 days, will not exceed the quantity specified in 10 CFR 30.35(d), 40.36(b), and 70.25(d) for establishing financial assurance for decommissioning in excess of $225,000.

Item 6 PURPOSE FOR WHICH RADIOACTIVE MATERIAL WILL BE USED

A. through G. and I. and J. Research and development as defined in 10 CFR 30.4, student instruction, calibration, instrument checking, quality assurance, image marking, physical and chemical analysis, and animal studies; these uses do not include the internal or external administration of radioactive material or radiation to human beings.

G. For use in a Seaman Nuclear Corporation Roof Moisture Meter.
H. For use in an Eon Corporation cesium beam radiation instrument calibrator.

4. Submit a Radiation Safety Officer Delegation of Authority signed by the licensee's executive management as specified in section 8.7.3 of NUREG -1556, Volume 11, "Consolidated Guidance About Materials Licenses: Program-Specific Guidance About Licenses of Broad Scope".

The Radiation Safety Officer Delegation of Authority is enclosed.

If you need any additional information or clarification please contact me at 202-994-3149.

Sincerely,

Gregory D. Smith, CHP
GWU Radiation Safety Officer

Enclosure(s)

THE GEORGE WASHINGTON UNIVERSITY
MEDICAL CENTER
WASHINGTON DC

OFFICE OF RADIATION SAFETY

MEMORANDUM

To: All Employees

From: Anne N. Hirshfield, Ph.D.
Associate Vice President for Health Research,
Compliance & Technology Transfer
University Management Representative

Date: October 18, 2006

Re: Delegation of Authority for the Radiation Safety Officer
George Washington University

Subject: Delegation of Authority for Radiation Safety Officer

Gregory D. Smith, CHP has been appointed Radiation Safety Officer and is responsible for ensuring the safe use of byproduct material. The Radiation Safety Officer is responsible for managing the radiation safety program; identifying radiation safety problems; initiating, recommending, or providing corrective actions; verifying implementation of corrective actions; and ensuring compliance with regulations for the use of byproduct material. The Radiation Safety Officer is hereby delegated the authority necessary to meet these responsibilities.

The Radiation Safety Officer has the authority to immediately stop any operations involving the use of byproduct material in which health and safety may be compromised or may result in non-compliance with NRC requirements.

ROSS HALL, SUITE 617 • 2300 EYE STREET, NW • WASHINGTON, DC 20037 • 202-994-2630 • FAX: 202-994-1813
WEB: www.gwumc.edu/research/radsafety.htm