June 2, 2006

MEMORANDUM TO: John W. Lubinski, Chief
Fuel Manufacturing Section
Fuel Cycle Facilities Branch
Division of Fuel Cycle Safety
and Safeguards, NMSS

FROM: Melanie A. Galloway, Chief
Technical Support Section \RA\
Special Projects Branch
Division of Fuel Cycle Safety
and Safeguards, NMSS

SUBJECT: TECHNICAL SUPPORT SECTION INPUT TO SAFETY EVALUATION REPORT - UNIVERSITY OF TEXAS AT AUSTIN INCREASE IN PLUTONIUM POSSESSION LIMIT AMENDMENT (TAC NO. L31944)

The Technical Support Section (TSS) received the March 27, 2006, amendment request by the Fuel Manufacturing Section (FMS) Technical Assistance Request (TAR) dated May 2, 2006. In the TAR, FMS requested that TSS review the request by the University of Texas for a license amendment to increase ^{239}Pu possession limits at its Nuclear Engineering Teaching Laboratory facility. The attachment to this memorandum contains the nuclear criticality safety (NCS) input to the safety evaluation report (SER) from TSS, which supports approval of the licensee's request.

Attachment: NCS SER Input for University of Texas at Austin Increase in Plutonium Possession Limit Amendment

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(301) 415-8043

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DATE	05/ 31 /06		06/01/06					

NCS SER Input for University of Texas at Austin
Increase in Plutonium Possession Limit Amendment

Background

The Nuclear Engineering Teaching Laboratory (NETL) at the University of Texas (UT) uses special nuclear material (SNM) to supplement training and instruction programs in the field of nuclear engineering. UT's Nuclear Regulatory Commission (NRC) license SNM-180, currently authorizes the possession of enriched uranium and 128 grams of plutonium contained in sealed plutonium-beryllium neutron sources. Independent of license SNM-180, UT is licensed for the use and storage of several sealed sources under a Radioactive Materials License (L00485) from the Texas Department of State Health Services (TDSHS).

The existing sealed plutonium-beryllium neutron sources licensed by the NRC consist of three plutonium-239/beryllium neutron sources containing 127.87 grams plutonium. Under the TDSHS materials license, NETL uses two sealed plutonium-238/beryllium neutron sources containing 2.63 grams plutonium and one plutonium-239/beryllium neutron source containing 16.087 grams of plutonium. The sealed sources are used to supplement training and instruction programs in the field of nuclear engineering. These sources are stored and used at the NETL.

By letter dated March 27, 2006, UT requested that the plutonium possession limit be increased from 128 to 147 grams to accommodate licensing by the NRC the two plutonium-238/beryllium neutron sources and one plutonium-239/beryllium source, currently licensed by TDSHS. The sources would remain at the current location at NETL for the same purposes as stated above.

Nuclear Criticality Safety (NCS)

NRC staff reviewed the amendment request dated March 27, 2006. The March 27, 2006, amendment request only asked for the possession limit increase described above and does not change any currently authorized activities or require changes in storage or use of the plutonium/beryllium sources. In addition, the increase in plutonium to 147 grams is significantly below the amount required for a critical mass (i.e., 450 grams). Based on the information in the submittal, NRC determined with reasonable assurance that the increase in possession limits will not decrease public health and safety, security, or protection of the environment.

Attachment