



DEPARTMENT OF THE ARMY
US ARMY RESEARCH, DEVELOPMENT AND ENGINEERING COMMAND
ARMY RESEARCH LABORATORY
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REPLY TO
ATTENTION OF

RDRL-LOF

MEMORANDUM FOR Director, Office of Nuclear Materials Safety and Safeguards,
ATTN: Document Control Desk/GLTS, U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

SUBJECT: Report to NRC of missing generally licensed Radioactive Source

On March 21, 2016, our Radiation Safety Officer, Mr. Michael Borisky, became aware that a generally licensed sealed C-14 reference light source is missing from a photometer that we have used in our research over nearly three decades. The missing sealed source is C-14, 50 micro-curies, model AAC40108, serial number 263, originally distributed under NRC general license 2189-59 assigned to Photo Research Division of the Kollmorgen Corporation. In preparation for disposal of the photometer, Mr. Borisky was attempting to remove the sealed C-14 source from inside a Photo Research photometer (model 1980, serial number A332) when he found the source was missing. The source is normally located inside the photometer in a position that can't be seen without some disassembly. On April 19, 2016, in an effort to meet the spirit of the NRC's thirty day reporting requirement, Mr. Borisky called and notified Mr. Hector Rodriquez of your agency of the missing source, and promised to investigate and follow-up with details and findings.

Dr. Dave Morton has had possession of the photometer and used it for his research of the last few decades. He said that he remembers removing the C-14 source circa 1990 when he was working for an Army Research Lab (ARL) predecessor organization, the Army Electronic Technology and Devices Laboratory (ETDL) located at Ft. Monmouth, New Jersey. He said he removed the sealed C-14 source to allow him to couple the photometer to fiber optics as part of his research efforts. He said he gave the sealed C-14 source to the Army Communications and Electronics Command (CECOM) Safety Office at that time for safe keeping and disposal, although we have no documentation to support this transfer. At that time, and until ETDL personnel were re-located to Maryland circa 1997, the CECOM Safety Office provided the radiation safety program support to ETDL through an Inter-Service Support Agreement. The CECOM Safety Office was also located at Ft. Monmouth.

The CECOM Safety Office as well as the Army Rad Waste Disposal Office in Rock Island, Illinois have reviewed their records in an attempt to locate records regarding the missing source. To date, no serial number specific reference to the missing C-14 sealed source has been found. The 1994-1997 CECOM inventories indicate that four photometers at 50 uCi each with Dr. Morton were inventoried at Ft. Monmouth up until he relocated to Maryland circa 1998. And the CECOM Safety Office inventory records from 1998 do show a "Photometer" entry of 50 uCi C-14 well after Dr. Morton's four

photometers had been transferred to Maryland. For this source, it appears that "6730-00-PHOTOMETER" was coined by the inventory person as a serial number for this source. Although this "serial number" does not match the serial number of the missing source, which is 263, it may be the missing source. CECOM has records that indicate that this source was included in a disposal action that took place in 2007. Also, in an earlier disposal action in 1998, a different 50 uCi C-14 source described as an "unlicensed source" was transferred to the disposal agent. No serial number was indicated, but this likewise might be the missing source. What further supports the possibility that one of these two sources was the missing source is that both the CECOM Safety personnel and Dr. Morton are not aware of any other photometer users at Ft. Monmouth during that period. So the likely source for any 50 uCi C-14 sources at Ft. Monmouth was Dr. Morton's photometers.

We therefore offer that the missing source was probably one of the sources above, both of which were properly disposed of as radioactive waste. This report is offered not on behalf of the Army Research Lab in particular, but rather on behalf of the Army, since the possession history of the source included the CECOM Safety Office as well as ETDL. In order to help prevent any similar incidents, the Radiation Safety Officers in ARL will remind personnel that licensed items can't be procured without the prior review and approval of the Radiation Safety Officer (RSO). They will also be reminded that these items must be included in the radioactive material inventory, and can't be transferred or disposed of unless first coordinated through the Radiation Safety Officer to ensure that the NRC required reports are sent to the NRC within thirty days. And the workforce will be reminded that radioactive material stickers/labels must be removed (by the RSO) from items if and when the radioactive component is removed from inside.

If you need any additional information, please feel free to contact my Radiation Safety Officer, Mr. Michael Borisky, at 301-394-6310.

A handwritten signature in black ink, appearing to read "Teresa Kines", with a long horizontal line extending to the right.

TERESA KINES
Director for Laboratory Operations