August 21, 2015

PRELIMINARY NOTIFICATION OF EVENT OR UNUSUAL OCCURRENCE -- PNO-IV-15-02

This preliminary notification constitutes EARLY notice of events of POSSIBLE safety or public interest significance. The information is as initially received without verification or evaluation, and is basically all that is known by the Region IV, Arlington, Texas, staff on this date.

Facility
International Isotopes Incorporated
Idaho Falls, ID

Docket: 30-35486
License No.: 11-27680-01

Licensee Emergency Classification
___ Notification of Unusual Event
___ Alert
___ Site Area Emergency
___ General Emergency
_x_ Not Applicable

SUBJECT: PERSONNEL RADIATION OVEREXPOSURE IN EXCESS OF REGULATORY LIMITS

DESCRIPTION:

This Preliminary Notification describes the events related to an overexposure of an individual in excess of regulatory limits.

At about 0900 MDT on Thursday, August 20, 2015, senior management at International Isotopes Incorporated was informed by their area manager that one of licensee's technicians had been exposed to a 'flash' of radiation while handling a Cobalt-60 (Co-60) source drawer. This occurred at the licensee's facility in Idaho Falls, Idaho, during a routine source exchange procedure. The technician reported that his electronic dosimeter was reading 5.62 rem. The NRC's annual dose limit for occupational workers is 5.0 rem to the whole body.

The licensee has confirmed that the Co-60 source (containing approximately 4,000 Curies) was in a secure, shielded position and has interviewed the technician involved. The initial investigation by the licensee indicates there was only one technician performing the work in the immediate vicinity of the shielded cask and source drawer at the time of the exposure. There were other technicians at the facility during the source exchange, but all of their dosimetry indicated normal readings (ranging from of 1 to 5 millirem).

The technicians were preparing to transfer the Co-60 source drawer into another shielded container. A special handling tool had been bolted to the end of the source drawer for positioning the source drawer within the container. This special handling tool needed to be removed from the source drawer in order to transfer the source back into the shielded container. The technician attempted to move the source drawer just enough to expose the bolts on the special handling tool so it could be removed. The technician stated that the drawer "was sticking" and when he pulled harder on the drawer it slid out of the cask about 9 inches, bringing the source to within an estimated 2 inches of the container's external surface. The technician immediately pushed the source drawer back into the shielded container into a fully shielded position. The technician then noted that his electronic dosimeter was reading 5.62 rem and he left the work area and reported his exposure to his supervisor.

Based on a reenactment of the event, and conservative calculations, the licensee estimated that the technician may have received a whole body dose of 16.9 rem. The technician was not wearing any dosimetry on his hands (extremities). The licensee calculated that the worker could

have received a radiation dose to his hand of between 237 and 950 rem, depending upon various assumptions. The NRC's annual limit for radiation exposure to the extremity of an occupational worker is 50 rem. While no immediate adverse health effects to the technician are expected, the worker was sent to a local hospital for a blood test to assist with this determination. The technician is being restricted from work involving radioactive materials until the licensee's investigation is completed. The technician's thermoluminescent dosimeter (TLD) has been sent to a facility to determine whole body dose.

On the morning of August 21, NRC Region IV dispatched an inspector to the licensee's facility in Idaho Falls to review the sequence of events associated with the radiation overexpose and the licensee's immediate response and follow-up actions.

The licensee informed the NRC Region IV technical staff of this event at 12:00 p.m. CST on August 20, 2015.

The State of Idaho has been notified.

ADAMS ACCESSION NUMBER: ML15233A576

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