

INES Event Rating Form (ERF)

Version 2

Sender's Name:	Patricia Milligan
Sender's Organization:	Nuclear Regulatory Commission (NRC) (United States of America)
Event Title:	Worker Overexposure
Event Date:	2018-04-06
Location / Facility:	Rosharon, Texas / Techcorr USA Management LLC
Event Country:	United States of America
Event Type:	Radiation Source
INES Rating:	2 - Incident (Final)
Rating Date:	2018-05-10

Impact on people and the environment

Release beyond authorized limits?	No
Overexposure of a member of the public?	No
Overexposure of a worker?	Yes

Impact on the radiological barriers and controls at facilities

Contamination spread within the facility?	No
Damage to radiological barriers (incl. fuel damage) within the facility?	No

Degradation of Defence In-Depth?	No
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Other information

Person injured physically or casualty?	No
Is there a continuing problem?	No

Event Description

A radiographer received a whole body dose of 60 mSv (6.0 rem) on or about 4/6/2018. The radiographer was working at a fabrication shop with a radiography camera containing a 3.804 TBq (102.8 Ci) Ir-192 source. The radiographer finished performing radiography exposures in one location then carried the camera and attached the cables approximately 3-4 feet and set it down. He then walked out of the excessively noisy shooting bay. As he exited, he realized his alarming rate meter was sounding. He walked back to the camera, operated the cranks, and retracted the source into the fully locked position inside the camera. The licensee requested the expedited processing of the radiographer's whole body dosimeter. The camera and cranks were tested and appeared to be working normally. The dose received by the radiographer exceeds the U.S. statutory limit for whole body dose of 50 mSv (5 rem). Texas plans to conduct an investigation to determine the circumstances surrounding the worker overexposure and perform dose calculations. NRC EN53332

UPDATE: The radiography camera was located under a large amount of piping. As the radiographer picked up the camera from underneath the pipes, he inadvertently put his hand on the ball-stop locking device and unlocked the camera. The cranks and source tube were still attached. When the radiographer moved the camera, the cranks rotated causing the source to move 6-10 inches out of the camera. The radiographer moved the camera about 5 feet and held the camera for 15 seconds. He worked near the camera for 5 minutes setting up a new film. When the radiographer walked out of the shooting bay another technician told him that his rate meter was alarming. The radiographer returned to the bay and rotated the cranks one full turn locking the source back into place. The total whole body dose for the incident was 59 mSv (5.9 rem). The root cause of the incident was poor placement of the camera with a source tube that was too short which caused the radiographer to have to grab the camera near the unlock mechanism to drag it from underneath the pipes. Also, the loud noise caused the radiographer the inability to hear his rate meter alarm. The licensee is conducting training with workers, and researching additional alarm systems for the bay and better rate meter alarms. The licensee is reassessing the size of the source tube to ensure the camera can be placed in a position which allows for easier pick up.

Rating Justification

A Level 2 is warranted for exposure of a worker in excess of statutory annual dose limits. See Section 2.3.1 INES User's Manual 2008 Edition (IAEA-INES-2009) http://www-pub.iaea.org/MTCD/publications/PDF/INES-2009_web.pdf

Press Release Attached:	No
Technical Document Attached:	No
Further Information on Web:	

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