

ADAMS Accession no. ML21351A224

Subject: Report of Non-compliance

Date of occurrence; February 28, 2020

Individuals involved: (1) Radiographer [REDACTED]  
(2) Quality Coordinator, Radiographer [REDACTED]  
(3) Assistant Radiographer [REDACTED]

A two-person crew was performing gamma radiography. The Kakivik Quality Coordinator (QC) arrived at the location in order to conduct a quality audit. As part of the quality audit the QC asked to see the dosimetry of both individuals. The Radiographer produced his dosimetry, but the Assistant Radiographer informed the QC that he did not have his dosimetry. The QC instructed the Assistant Radiographer to leave the radiation area and find his dosimetry. The QC remained at the job site with the Radiographer while they completed several more exposures together. The Assistant Radiographer traveled back to camp and retrieved his dosimetry from his room, then returned to the work site. At this point the QC concluded that the situation was a serious breach of procedures and decided to tell the crew to stop work and return to the office. Upon returning to the office, notifications were made to the Crew Foreman, the Execution Supervisor, and the Radiation Safety Supervisor (RSS.)

After being informed of the event the RSS began an investigation. The findings are as follows:

The Assistant Radiographer had left his dosimetry in the pocket of the clothes he had worn on the night before the incident occurred. The Assistant Radiographer entered the vault and signed out the exposure device without dosimetry and upon returning to the work vehicle added his dosimeter (Mirion DMC 3000 Dosimeter/Rate Alarm Combo) serial number and expiration date to the daily rad report that the Radiographer had already started. The assistant radiographer also recorded his starting dosimeter reading as zero.

In their statements both crew members assert that three exposures were made before the QC arrived. However the QC reported that he (QC) and the Radiographer took two exposures. The daily radiation report lists a total of six exposures for the duration of the job. Total exposure time was recorded on the radiation report as fifteen minutes. After a phone conversation with the Radiographer he indicated the sixth exposure documented stemmed from the test exposure he did on a shot dosi to help calculate his shot time. During interviews both members of the crew stated that the Assitant Radiographer was near the Radiographer during the entire process and never approached any closer than the end of the cranks during exposure. The Radiographer's dosimeter read 1 mR at the end of all six exposures.

The Assitant Radiographer states that he had memorized all the numbers on his dosimetry while the Radiographer believes that the Assistant had stored the numbers on his phone. . We believe the assistant could have memorized his numbers as he had worked an extended hitch longer than his normal three week rotation. Since we can't prove the assistant had stored his information on the phone we can't determine if the assistant was not being forthright.

The above findings lead to the following conclusions:

The Assistant Radiographer was exposed to a maximum of 2.5mR during the course of the event. This figure takes into account the 59.1 curie strength of the source, an estimated total of ten minutes of exposure during the course of four radiographs, a constant distance of 35 feet (the length of the conduits,) and the use of a 4HVL collimator.

The Radiographer did not visually inspect the Assistant Radiographer's dosimetry during the course of work, nor ask him what his dose was after initial exposures.

The Assitant Radiographer is either not in the habit of using his dosimetry in the manner required by the Kakivik O&E Manual, or is not being honest about how the events transpired due to the fact that he did not know that he didn't have his dosimetry when he had plenty of opportunities to verify leading up to the QC arriving.

The following actions are recommended to prevent reoccurrence of such an event:



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Retraining of personnel involved before they can be allowed to return to work in radiography.

Elevating the practice of peer checking (or buddy checking) from a best practice to a requirement for all radiography crews.

In addition to the above recommended the following actions were taken:

**\*\*** We terminated employment of the trainee for not following the regulations and company procedures.

\*Carded radiographer was suspended for a week without pay. The suspension was due to the fact that the lead radiographer is held responsible for making sure his crew is following all procedures. This role had been reiterated during 2019 refresher training. Radiographer was to be retrained prior to going back to work. In addition he was to research and report what violations we had from the regulations and our O&E manual and report his findings to the RSS on site and during the next few safety meetings to his peers (Reporting to his peers has been delayed due to COVID 19 group gatherings).

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