

*ARIR Incident Number 2022-41037*

*August 2021*

*Personal contamination with tritiated heavy water*

A small amount of tritiated heavy water from the Heavy Water Purification System was sprayed on a maintenance technician's hands during maintenance on a valve. The estimated amount of water was 3 mL on the left and 2 mL on the right hand. The leaked heavy water was released into the room atmosphere which further exposed the technician and an engineer working on the same job. The heavy water tritium concentration was estimated to be 290 MBq/ml. The effective dose calculations estimated the technician received 250 microSv and the engineer 25 microSv.

The technician inadvertently broke the process fluid barrier because the valve design was unique in the facility and not properly understood. There was a lack of guidance on what constitutes a 'visual inspection' and how to manage associated risks. The leak was stopped immediately by resealing the cover. Clean-up was carried out immediately.

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