

Public Version

Caller Identification

The condition was reported to the NRC Operations Center by Calvin Manning, Framatome Manager of Licensing and Compliance, on October 12, 2021 at 1841 EDT. Mr. Manning's telephone number is (509) 375-8237.

Date, Time, and Exact Location of Incident

The reportable condition was created on October 12, 2021 at approximately 0630 PDT. The location was a sea-land type shipping container and the surrounding area outside of the MERF (Modular Extraction Recovery Facility),. MERF is part of Framatome's Richland facility at 2101 Horn Rapids Road, Richland WA 99354.

Incident Description

At about 0630 PDT while a process operator was attempting to move a pallet of four plastic 55-gallon drums containing liquid uranium nitrate (UN) solution off of a containment pallet, two drums fell off of the pallet and into the sea-land container where they were stored. One of the drums split and leaked UN solution into the sea-land container contaminating the area within the sea-land container, the forklift, and the asphalt under and adjacent to it.

The drum contained approximately [REDACTED] of uranium. The uranium concentration in the UN solution was [REDACTED], of which 3.93 per cent by mass was U235. The spill volume was less than twenty gallons; isotope activities corresponding to a spill of that volume are [REDACTED].

Health and Safety Consequences

No actual health or safety consequences were realized as a result of the spill. Potential health and safety consequences may have included contamination of workers, or inhalation of airborne uranium within the sea-land container, resulting in doses above ALARA. Air sampling was implemented in the area, and standard PPE precautions were used, to prevent contamination of workers during remediation. CAP88 modeling of the spill indicated that the Maximally Exposed Individual member of the public would receive a dose of 2.50E-04 mrem from this spill, if no remediation were undertaken.

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External Conditions

No significant external conditions were identified.

Status of the Event

The radioactive contamination resulting from this event have been remediated.

Notifications to Other Agencies

The Washington Department of Health was notified of the event.

Inclusion in Integrated Safety Analysis

The event was identified and evaluated in the Integrated Safety Analysis. The accident sequence is included in NCSA 761 in accident sequence 1.1 (ISA DB #3).

Probable Causes of Event

Framatome identified the following apparent cause for the event:

Containment pallet height and placement within the sea-land container prevented use of straps on drums to secure drums to the forklift while placing the drums on the containment pallet in the sealand container.

Corrective and Mitigating Actions

The operator was surveyed and was found not to have been contaminated nor to have received an acute dose from the spill.

The spill area was restricted for decontamination, during which Framatome monitored for airborne and surface contamination. The remediation included sampling of all accessible surfaces of the sea-land container, the forklift, and surrounding asphalt. Asphalt removal and decontamination of the area, as well as air monitoring, were planned and carried out in compliance with Washington Department of Health directive (AIR 21-1010) and a Framatome Radiological Job Permit.

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Preventive Actions

Framatome revised the procedures for moving drums, requiring that all drums be strapped together using industrial grade straps before being moved from buildings. Drums containing liquids are now required to be placed on a containment pallet before being moved out of doors. New, lower-profile metal containment pallets and additional drum straps were procured.