

 Report from a French incident**Contamination from damaged drains in nuclear medicine department****Description of the incident**

A hospital suffered from ingress of water due to the rupture of a sewer pipeline (this infiltration goes back several months). The pipes leading to this sewer drain the wastewater from certain sectors of the hospital, including the nuclear medicine and research laboratory toilets.

As soon as this was determined, the qualified person in charge of radiation protection isolated the potentially contaminated area (by the establishment of a door and its designation as a controlled area). Measurements confirmed the presence of radioactive contamination of the area. Liquid samples were then collected, revealing the presence of I-131, Tc-99m and C-14. The area was then left to allow decay of the short-lived radionuclides.

Solid samples were subsequently analysed for the presence of C-14, and positive results (170 ± 40 Bq/kg) obtained. Consequently, quotes were requested from specialized organizations for the decontamination of the area (including cleaning of sludge, removal of various waste items such as the wood, metal, etc.).

After consultation with the occupational physician, hospital staff and other workers (contractors) who had been in the area were subject to urine testing, all of which proved negative.

Radiological consequences

There is only limited information on this, but the conclusion was that the radiological consequences were considered to be very low, although some spread of contamination must have occurred.

Lessons to be learned from the incident

Although the radiological consequences of this incident were judged to be low, the response did involve significant effort and remediation costs for the hospital.

It should be ensured that the relevant parts of an organization are informed of the routes and facilities used for disposal of radioactive waste. The facilities management and maintenance departments should inform the qualified person in charge of radiation protection of any incident that might affect these.

Inspection and maintenance arrangements for waste pipes and drains should be agreed in consultation with the qualified person in charge of radiation protection. Persons undertaking such work should understand the significance associated with radioactive contamination – so as to treat seriously any defect identified, and for their own protection.

Pipes that drain liquid radioactive effluent (for example, the urine of patients treated in nuclear medicine departments) should be clearly marked to indicate the possible presence of radioactive contamination.