



Report from a UK incident

Caesium-137 source smelted with scrap metal - discovered in furnace dust

Description of the incident

A smelting company discovered radioactive contamination in a consignment of material it had received from a foreign steelworks. The discovery was only made because the company was undertaking a radiation survey of the site (to check for the presence of naturally occurring radionuclides). The contaminated material was a large quantity (>1000 tonnes) of steel dust pellets, a small fraction of which had already been smelted on the site.

Subsequent analysis and investigations revealed that the radioactive material was caesium-137 and that it had probably originated from an industrial gauge that had gone missing when a section of plant had been sent for recycling.

The material was segregated according to activity concentration and subsequently disposed of. Fortunately, the contamination was discovered relatively early before significant quantities of the material had been processed. Even so, the disposal and decontamination were extremely expensive (more than €1 million).

Radiological consequences

There was little evidence of contamination in the rest of the works – the caesium-137 activity in the small quantity of material that had been processed would have been substantially diluted. The majority of radiation doses on the smelter's premises are likely to have occurred during segregation of the material, and these doses are estimated to have been very low.

The radiological consequences at the foreign steelworks, or from the transportation of material to the smelters, are unknown.

Lessons learned

- All companies involved with metal recycling or smelting should understand the important benefits of monitoring incoming materials for radioactivity. This also includes companies who receive secondary products from the smelting industry, such as in this case.