

 Report from a UK incident

## **Inadvertent disposal of redundant Kr-85 thickness gauge source**

### **Description of the incident**

A factory stopped using a scanning thickness gauge when the krypton-85 beta source had reached the end of its useful working life. At this time the source activity was approximately 300 MBq. The gauge containing the source was placed in a secure store for approximately eight years. It was then decided to dispose of the source, which was removed from the gauge and packaged to await transport to a suitable disposal agent.

The package was placed in a second storage location and kept for a further three years. After this time, arrangements were finally made for the disposal of the source, but the package could not be found. Subsequent investigations concluded that the source had probably been disposed of to a landfill site but was never recovered.

During the eleven years that the source was out of use but on the premises, the company failed to keep any source records, and did not appoint anybody to supervise the source. The company was successfully prosecuted by the regulatory authorities.



### **Radiological consequences**

It is not known if any doses were received by the persons who removed the source or by the landfill operators.

**Lessons learned**

- Redundant radioactive sources should be disposed of (or transferred to another authorised user, although transfer should not be used as a means of avoiding or delaying disposal) at the earliest opportunity. The longer the delay, the more likely it is that an incident such as this will occur.
- Radiation warning labels must be prominently displayed on all equipment and packages that contain radioactive materials.
- Appropriate records must be maintained for all radioactive sources, including any redundant sources. The location of all such sources should be positively verified on a regular basis, and the records updated. This is even more important where sources are no longer permanently installed in gauges.
- Radioactive sources should be supervised by suitable trained staff, and this supervision must be maintained as long as sources (even if redundant) are kept on site.