



Report from a UK incident

Unsafe transport of waste radiotherapy source

Description of the incident

A specialist transport company was contracted to move a disused radiotherapy source from a cancer treatment hospital to a radioactive waste repository approximately 160 km away. The 129 TBq cobalt-60 source was loaded into a Type B transport container and transported by road, a journey which took about three hours. When the consignment arrived it was checked by site health physicists who found that a narrow collimated beam was being emitted vertically downwards from the package. The dose rate in the beam was about 3.5 Sv/h.

The incident was reported to the appropriate regulatory authorities; the subsequent investigation found that a vital shield plug was missing from the transport container, which allowed a beam of radiation to be emitted from its base.

A joint prosecution was brought by the two regulatory bodies. The contractor was ordered to pay a total of approximately 450 000 Euros in fines and costs.

Radiological consequences

Fortunately, it was concluded that there was no evidence that anyone had received a significant radiation exposure during the preparation and transportation of the source. However, due to the extremely high dose rates present, there was the potential for persons to receive a radiation exposure in excess of the dose limit within seconds and suffer deterministic injuries within minutes or hours. In particular, if the employees transporting the source had been exposed to the radiation beam for duration of the journey, this could have proved fatal.

Lessons learned

Basic control measures, designed to prevent incidents such as this occurring, were not being followed, in particular.

- Transport quality assurance procedures must be adhered to, to ensure that packages are safe to transport.
- Satisfactory radiation monitoring must be carried out by the consignors, to check the transport index and ensure that radiation dose rates are as expected.