



Unauthorised gamma radiography exposes site welders

Description of the incident

A radiography contractor arrived at an industrial site at lunchtime to carry out a number of radiographs on a boiler using a 300 GBq iridium-192 gamma source in a remote exposure container.

The radiographer was instructed not to perform any radiography work until after 5 pm (ie after the normal working hours on the site). However, during the afternoon the radiographer was seen dismantling some of his equipment and, upon questioning, it transpired that he had ignored the instructions and performed two radiographs. Three welding contractors were working inside the boiler at the time. Staff in the boiler house reported that they did not see any barriers erected, nor did they see any warning signs or lights, or hear any warning signals.

The site's Radiation Protection Adviser was requested to investigate the incident and make dose assessments. The radiography contracting company concerned has not been employed on the site again.

Radiological consequences

Estimates of the whole body doses received by the three were made by the Radiation Protection Expert following a reconstruction of their positions within the boiler. Fortunately no significant doses were received (less than 0.1 mSv).

Lessons learned

- The radiographer carried out radiography without meeting the site owner's authority (the site safety procedures require that radiographers are issued with a permit to work); indeed he had been expressly told that he may not commence work at that time. It is extremely important that contractors co-operate with site employers and agree a safe system of work. Even then, site operators (ie radiography clients) should consider supervising and auditing the radiographers during the work.
- The radiographer did not search the boiler area prior to the exposure and did not use barriers, signs or warning signals – all of which are required by his company's own procedures. Radiography companies should ensure that their staff are appropriately trained and are issued with appropriate procedures. They should also provide their own supervision and self-auditing arrangements to confirm that these procedures are followed in practice.
- The reason why the radiographer undertook the radiography immediately was not determined, but pressure of work may well be a factor (and might also explain why barriers and warning signals were not deployed). Proper planning and communication between employers can help avoid unnecessary delays – but it also needs to be ensured that radiography staff are not placed under undue pressure to finish jobs quickly at the expense of radiation safety.