



Report from a UK incident

Loss of control of well logging source being transferred from a transport container

Description of the incident

Well logging was being carried out on an off-shore drilling platform using a 50 GBq caesium-137 source when a worker failed to correctly transfer the source from its transport container into the logging tool.

The source lay unnoticed on the drill floor for approximately 4 to 5 hours: 14 workers from several different companies accessed the area during this time. A worker from the well logging operations eventually found the source, picked it up and placed it into the transport container.

The rig operators carried out an immediate investigation and notified the Regulatory Authority, who carried out an investigation. The regulator served three Improvement Notices relating to:

- inadequate risk assessment;
- insufficient training for employees engaged in well logging operations and
- incomplete contingency plans.

The company was subsequently prosecuted for the offences and fined £300,000.



Photograph of typical well-logging sources

Radiological consequences

- The source was partially shielded but elevated dose rates were present; the maximum dose rate was found to be 5 mSv/h at one metre from the source.
- The 14 workers who accessed the drill floor during the incident were estimated to have received whole body doses between 0 and 7 mSv.
- The worker who recovered the source is estimated to have received an absorbed dose of 250 mGy to his hand.

It was fortunate that no one received an over-exposure. Direct contact with the unshielded source for a few minutes could potentially have resulted in localised deterministic effects (e.g. skin burns). Medical examinations were offered to workers present at the time, as a precaution.



Photograph of oil platform showing typical well-logging transport containers and source transfer tools

Lessons learned

- The contingency plans were incomplete because the company had not carried out a suitable and sufficient prior risk assessment to identify all reasonably foreseeable incidents.
- This incident would have been immediately apparent if the transfer of the source into the logging tool had been verified using a radiation monitoring instrument.
- The following improvements were implemented as a result of this incident:
 - A new procedure was put in place to ensure that the dose rates on the drill floor are measured following the source loading to confirm that it has been safely transferred into the logging tool.
 - The logging equipment software was modified: if the radioactive source is not present in the logging tool when it is lowered beneath the seabed, an alarm is triggered to notify the operator that there is a problem.
 - All employees were given appropriate training in the practical aspects of the work and also in rehearsal of contingency plans.