

Senate Standing Committee on Economics
ANSWERS TO QUESTIONS ON NOTICE
Innovation, Industry, Science and Research Portfolio
Supplementary Budget Estimates Hearing 2010-11
20 October 2010

AGENCY/DEPARTMENT: AUSTRALIAN NUCLEAR SCIENCE AND TECHNOLOGY ORGANISATION

TOPIC: Yttrium-90 Events

REFERENCE: Question on Notice (Hansard, 20 October 2010, E6)

QUESTION No.: SI-4

Senator LUDLAM—That is helpful. If you could just confirm for us that there were two incidents at ANSTO Health, which I understand is the new name for ARI, on Monday, 27 September, the first of which involved a spillage of yttrium in a glove box around 8.00 am and a second that involved apparently the contamination of some clothing at around 12.45 am on that day, is this correct?

Dr Storr—It was at 12.45 pm, the second one.

Senator LUDLAM—Yes, you are quite right, 12.45 pm, thank you.

Dr Storr—Yes, I can confirm that there were two events on that day.

Senator LUDLAM—Were the incidents logged on that day or the following day?

Dr Storr—The incidents were reported on the day.

Senator LUDLAM—When is your written record of those incidents in your records? Could you table the incident reports that arose for us?

Dr Storr—The event reports, yes we can table them.

Senator LUDLAM—Does the data collected by the contamination monitors arising from those events still exist or has it been deleted?

Dr Storr—The data is recorded on the event reports for one of the monitors. I will have to take on notice whether the data from the portal monitor which the person who first picked up the contamination would have walked through is still available.

Senator LUDLAM—Whether that is kept, because that is routinely erased, is it not, or it falls off the back of the log every eight or 10 days?

Dr Storr—I will have to take the question on notice. I need to check the timing. I am not sure whether the data is kept electronically but it is recorded on the event report.

ANSWER

In order to monitor the environment and ensure safe working conditions for employees involved in the processing of radiopharmaceuticals at ANSTO Health, ANSTO utilises the following monitoring systems:

- **Localised radiation monitors** that are installed on the walls of the production facility. The monitors will alarm should the radiation in the area exceed a predetermined limit.
- Wearing of **electronic personal dosimeters** (EPD) that give a real-time measurement of external dose to the body, including audible alarms when conservative, pre-set dose rates or accumulated doses are detected.

- Wearing of a **thermoluminescent detector** (TLD) to measure external dose to the body (chest and wrist TLD) and hands (ring TLD). The TLD complements the EPD measurements by providing longer term dose measurements for the worker. These measurements are collected on a monthly basis and are used for the official dose record of the employee.
- Periodic whole-body monitoring to check if any radioactive material has been taken into the body. If radioactive material is detected, the resulting dose is calculated and included in the official dose record of the employee.
- Hand-held personal contamination monitors used to monitor the immediate work area.
- Hand and Foot monitor when exiting the radiopharmaceutical production area. Every ANSTO Health staff member must follow this standard procedure. The hand and foot monitor instantly indicates whether there is any contamination on the staff member and also indicates the amount of contamination, if present.
- Hand-held contamination monitor used to detect any potential contamination on clothing when exiting the radiopharmaceutical production area.

For the event on 27 September 2010, the primary method in which the contamination was detected was through the hand and foot monitor. The contamination was on the employee's trousers and was measured at 16 counts per second. To provide some context, a reading in the same range may be gained by measuring the naturally occurring radiation from some types of household-grade granite used for kitchen benches.

The hand and foot monitor has the capacity to store the time and value of measurements for up to 1000 readings. At an estimated rate of 100 readings a day (for staff exits), data remains on that monitor for approximately 10 days. It is standard procedure that should that monitor detect above background levels of contamination, an event report is raised and the contemporaneous readings from the monitoring system are recorded in that report, as was the case for the event on 27 September 2010.