**EDUCATION, SCIENCE AND TRAINING**

**SENATE LEGISLATION COMMITTEE - QUESTIONS ON NOTICE**
**2004-2005 BUDGET ESTIMATES HEARING**

**Outcome:** 3
**Output Group:** 3.2 – Assistance for science collaboration and innovation

**DEST Question No. E016_05**

Senator Wong asked on 2 June 2004, EWRE Hansard page 111.

**Question:**

Are you able to provide to the committee the current inventory and future waste proposed for the repository?

**Answer:**

*Radioactive Waste Management – inventory of low level and short-lived intermediate level radioactive waste*

The current inventory of Australia's low level and short-lived intermediate level waste is shown in Table 1. Table 2 illustrates the expected future arisings while Table 3 indicates the key radionuclides in the waste.

On 14 July 2004 the Prime Minister announced that the Australian Government had decided to abandon a national radioactive waste repository at Site 40a near Woomera in South Australia.

The Australian Government will establish a waste management facility for the Commonwealth's low and intermediate level waste on Commonwealth land at a yet to be determined site.

*Table 1: Summary of inventory of low level and short-lived intermediate level waste by state (approximate conditioned volumes for disposal)*

| State | Locations | Estimated volume |
|---|---|---|
| South Australia | Adelaide and regional hospitals, universities and other research organisations, private companies and some government departments<br>Locations include: Adelaide CBD and surrounding suburbs, including Salisbury; Mt Gambier, Woomera, Olympic Dam, Port Pirie, Whyalla and Loxton<br>Includes 2010 $m^3$ of slightly contaminated soil stored near Woomera from CSIRO research into the processing of radioactive ores during the 1950s and 1960s | 2228 $m^3$ |
| Victoria | Melbourne and regional hospitals, universities and other research organisations, private companies and some government departments<br>Locations include: Melbourne CBD and surrounding suburbs, including Clayton; Geelong, Sale and Wodonga | 33 $m^3$ |

| State | Locations | Estimated volume |
|---|---|---|
| New South Wales | Sydney and regional hospitals, universities and other research organisations, private companies and some government departments<br>Locations include: Sydney CBD and surrounding suburbs including Lidcombe, Liverpool, Menai (Lucas Heights), North Ryde; Griffith, Wollongong and Armidale<br>Includes 1320 $m^3$ of ANSTO material stored at Lucas Heights near Sydney | 1355 $m^3$ |
| Queensland | Brisbane and regional hospitals, universities and other research organisations, private companies and some government departments<br>Locations include: Brisbane CBD and surrounds, Esk, Mt Isa, Rockhampton and Townsville | 45 $m^3$ |
| Tasmania | Hobart, Launceston and regional hospitals, universities and other research organisations, private companies and some government departments<br>Locations include: Hobart CBD, surrounding suburbs and regional areas | 15 $m^3$ |
| Australian Capital Territory | Hospitals, universities and other research organisations, private companies and some government departments<br>Locations include: Canberra CBD, surrounding suburbs and regional areas | 8 $m^3$ |
| Northern Territory | Hospitals, universities and other research organisations, private companies and some government departments<br>Locations include: Darwin CBD, surrounding suburbs and regional areas | 16 $m^3$ |
| Western Australia | Low level and short-lived intermediate level waste in WA is disposed at the intractable waste disposal facility (IWDF), Mount Walton East | |
| TOTAL | | 3700 $m^3$ |

Table 2: Summary of future low level and short-lived intermediate level waste arisings.

| Locations and nature of waste | Estimated volume when packaged / conditioned |
|---|---|
| ANSTO (HIFAR and replacement research reactor) | 30 $m^3$/yr |
| Nationwide, other sources | Up to 10 $m^3$/yr |
| Moata Research Reactor (shut down in 1995) | 55 $m^3$ |
| Lucas Heights HIFAR research reactor decommissioning | 500–2500 $m^3$ |
| Lucas Heights replacement research reactor decommissioning | Amount expected similar to HIFAR |

Table 3: Estimated inventory of Australia's low level and short-lived intermediate level waste (from Supplement to the national repository EIS).

| State / Waste holder | Estimated total volume ($m^3$) (1) | Activity (GBq) in total volume(2) | Activity of key radionuclides (GBq) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | $^{3}H$ | $^{60}Co$ | $^{90}Sr$ | $^{137}Cs$ | $^{226}Ra$ | $^{232}Th$ | $^{238}U$ | $^{241}Am$ | $^{226}Ra/Be$ | $^{241}Am/Be$ |
| Queensland | 45 (1) | 883 | 297 | 86 | 56 | 440 | 5.3 | 2.0E-06 | 2.40E-06 | 1.03 | .07 | |
| Victoria | 26 (1) | 259 | 70 | 1.8 | 17 | 36 | 22 | 8.4E-04 | 0.007 | 105 | 22 | 4.1 |
| NSW | 26 (1) | 1350 | 610 | 5.3 | 370 | 240 | 81 | | 0.004 | 3.3 | | 37 |
| Tasmania | 15 (1) | 410 | 60 | 0.008 | | 320 | 14 | | | 3.8 | 0.7 | 19 |
| South Aust. | 20 (1) | 2.0 | | 0.003 | 1.7E-05 | 1.0 | 0.4 | 0.4 | | 0.2 | | |
| ACT | 3 (1) | 430 | 400 | 0.02 | 20 | 0.09 | 0.02 | 0.02 | 0.05 | 10 | | |
| NT | 16 (1) | 905 | 900 | 2.6 | 3.5E-05 | 2.2 | 3.0E-04 | | 2.0E-04 | 0.004 | | |
| Defence: | | | | | | | | | | | | |
| – St Marys (SA) | 20 | 36 | | 8.2 | 8.0 | 1.2 | 6.7 | | | | | |
| – Other (SA/Vic/NSW) | 190 | 725 | 560 | 1.1 | | | 6.3 | 0.2 | 41 | | | |
| ANSTO (NSW) | 1,320 | 671 | 17 | 330 | 14.4 | 280 | 2.8 | 3.1 | 14.0 | 2.4 | | |
| CSIRO – Soils (SA) | 2,010 | 0.3 | | | | | 0.01 | 0.2 | 0.01 | | | |
| CSIRO – Other (Vic/ACT/NSW) | 9 | 700 | 1.7E-04 | 190 | 3.6 | 500 | | | | | | |
| **TOTAL** | **3,700** | 6367 | 2914 | 625 | 489 | 1820 | 143 | 3.9 | 55 | 125 | 232 | 60 |

(1) State/Territory estimated volumes are nominal quantities held by the regulator, plus hospitals/universities and industry volumes. They include all waste that is expected to be disposed of in the repository (for estimated categories A, B and C from the NHMRC *Code of Practice for the near-surface disposal of radioactive waste in Australia*). The volumes are in conditioned form.

(2) Activities and volumes given are for items that have been previously classed as category A, B or C and those that have been provisionally estimated as being category A, B and C. (There are neither mass nor volume data for Queensland and NT wastes, and no mass data for SA and NSW wastes.)