

“National Inventory of Radioactive Waste” shows the Kimba dump is ANSTO’s dump

Briefing by David Noonan, Independent Environment Campaigner 03 Oct 2022

ARWA’s “[National Inventory of Radioactive Waste](#)” released on 6th Sept 2022 shows ANSTO is the predominant source of existing and future radioactive waste to be disposed and stored at Kimba.

The Australian Radioactive Waste Agency (see “2021 Inventory Summary, ANSTO”, p.7) states:

"The estimated volumes of ANSTO's future Low Level Waste (LLW) and Intermediate Level Waste (ILW) are substantially greater than previously reported."

ARWA report a five-fold increase in Low Level Waste to be disposed at Kimba, with the existing 2 490 m³ LLW intended to increase to a total of 13 287 m³ LLW over the next 100-year period.

ANSTO has produced over 92% of Australia's existing total LLW Inventory of 2 490 m³, with ANSTO holding 2 307 m³ of LLW at Lucas Heights, compared to all other LLW sources totalling 183 m³.

ANSTO intend to produce over 98% of future LLW in Australia over the next 100 years, 10 665 m³ of an additional future total 10 796 m³ of LLW, with all other sources adding only 131 m³ of LLW.

Overall, ARWA reports ANSTO will be responsible for over 97% of the total LLW that is intended to be dumped at Kimba over the next 100 years, with ANSTO's total LLW estimated at 12 972 m³ out of Australia's LLW inventory that is estimated to total 13 287 m³ over the next 100-year period.

ANSTO are reported as responsible for over 99.5% of the radioactivity in Australia's total LLW inventory to be dumped at Kimba (see Table 5 "LLW activity in 2021 Inventory", p.10). ANSTO are currently responsible for nearly 99% of the radioactivity in existing LLW.

ARWA state the increase in LLW is due to an "*about 10% increase annually*" in ANSTO's rate of generation of LLW (p.7); to the Inventory now estimating LLW over the next 100 years (while the 2018 Inventory estimated LLW over a 50-year period); and to increased ILW from decommissioning of nuclear reactors and waste facilities – all to be cut up and trucked over to dump at Kimba.

Defence is reported as the 2nd largest holder of LLW and producer of future LLW (see Table 3, p.9). Defence now holds 70 m³ of LLW (2.8% of total existing LLW). Defence intends 88 m³ of future LLW, equal to two thirds of non-ANSTO future arising LLW over the next 100 years, for a total of 158 m³ of Defence LLW. Note: the ARWA Inventory does not address potential nuclear submarine wastes.

ANSTO and other Commonwealth agencies predominant responsibility for LLW is striking:

Out of a total LLW Inventory of 13 287 m³ LLW intended to be dumped at Kimba over a 100-year period, ARWA reports only a total of 5 (five) m³ of LLW originates from non-Commonwealth sources.

The ARWA “National Inventory of Radioactive Waste” reports (p.9) total Hospital existing and future LLW at only 3 m³ and total “Research and Education” existing and future LLW at only 2 m³.

Hospital radioactive waste typically has such a low activity level it is managed on a ‘store and decay’ basis and is later disposed in general waste and does not qualify as Low Level Waste to go to Kimba.

Claims a national LLW disposal facility is needed at Kimba for hospital and medical waste are false. ANSTO’s existing and future LLW can remain safely and securely stored at Lucas Heights for decades.

ANSTO plans to more than double Australia's existing Intermediate Level Wastes

ANSTO are near solely responsible for plans to more than double Australia's total ILW inventory. ILW require radiation shielding, safe handling and purpose-built containers for storage and transport. The federal nuclear regulator ARPANSA states ILW require isolation for over 10 000 years. ILW are to be transported to agricultural land near Kimba to be stored above ground *indefinitely*.

ARWA reports ANSTO have produced and hold 96.5% of Australia's existing ILW packaged inventory at Lucas Heights, at 1 555 m³ of a total 1 611 m³ ILW. This is a substantial increase of 28% from the 2018 Inventory citing ANSTO ILW at 1 211 m³. Only 56 m³ of existing ILW is from non-ANSTO sources.

ANSTO propose to generate 97% of future ILW in Australia over the next 50-year period, to produce 2 198 m³ of a total future ILW of 2 265 m³ (see Table 6 "ILW volume in 2021 inventory, packaged m³", p.11). This compared to an estimated total of 67 m³ of future ILW from all non-ANSTO sources.

ARWA reports Australia's total inventory of ILW including nuclear materials, existing and future wastes over the next 50-year period, at 4 377 m³ (see [ARWA Report "2021 Inventory Summary"](#), Table 1, p.7). These hazardous wastes are to be transported to Kimba for above ground storage.

ARWA briefly report a separate category "**Nuclear materials inventory 2021**" (at p.14), with 450 m³ in existing storage and about 50 m³ estimated to be produced over the next 50-year period.

Nuclear materials are defined as 'safeguarded materials' subject to the "*Nuclear Non-Proliferation (Safeguards) Act 1987*" and are required to be held under a Permit from the Cth Agency ASNO. ARWA says nuclear materials may be treated as ILW, and include uranium, thorium, plutonium.

Nuclear materials feature ANSTO's nuclear fuel wastes - that were described as "highly hazardous" material by ARPANSA's inaugural CEO John Loy in evidence to an NSW Parliamentary Inquiry.

Existing total ILW including nuclear materials are reported at 2 061 m³ (see Table 1, p.7), which is a significant increase from the 2018 Inventory that cited 1 771 m³ of existing ILW.

ARWA now also report a separate category of "**sealed sources**" (p.13-14 and Table 9), without reporting on activity levels, and states (p.7) that these concentrated radiation sources have "*only a small implication for waste volumes*". Sealed sources are also to go to Kimba.

Defence is to add 72% of total future sealed sources, 730 of 1 013. ANSTO hold 50% of an existing 5 891 sealed sources. The total number of sealed sources over a 50-year period is given at 6 904.

Hospitals are stated to hold a total of only a single m³ of existing ILW with no future ILW (Table 6, p.11), and to hold a total of 82 sealed sources, with 5 arising over the next 50 years (Table 9, p.13).

Based on ARWA's Report, all non-ANSTO sources produce on average only approx. 1.3 m³ per year of LLW over the next 100 years and produce approx. 1.34 m³ per year of ILW over the next 50 years.

For further information, see Briefs by David Noonan:

["ALP Gov reports on EPBC Act decision to exclude shipping of reprocessed nuclear waste into SA from public scrutiny during assessment of waste dump plans"](#) (24 July 2022, 3 pages).

["Key explanatory ARPANSA quotes on nuclear waste management in Australia"](#) (April 2022, 3 pages);

Input to the CEO of ARPANSA on [Alternative Storage of ANSTO ILW at Lucas Heights](#) (Nov 2021).