

Measure twice, cut once:

Advancing responsible radioactive waste management in Australia

Radioactive waste management in Australia has been a contested, divisive and ultimately non-productive area of public policy for decades. The timing and circumstances are now conducive for adopting a revised approach that is more likely to advance responsible national radioactive waste management and agreed and lasting outcomes.

ACF has identified several key foundation principles for responsible radioactive waste management in Australia. We maintain that radioactive waste management should:

- not impose any federal facility on an unwilling community or jurisdiction
- be consistent with state and territory laws and leading international industry practise
- reduce unnecessary double-handling of Intermediate Level Waste
- ensure high storage standards at the two secured federal sites where most of the waste is currently sited
- recognise the ANSTO nuclear facility at Lucas Heights is the best place to manage Australia's worst waste until there is an agreed and integrated management approach
- inclusively and robustly examine the full range of future long-term management options.

Scale & current context

Australia holds around 4250 cubic metres of low-level radioactive waste (LLW) and 655 cubic metres of long-lived intermediate level waste (ILW). Around 95% of this material is currently stored at two secured Federal sites. Nearly all of Australia's intermediate level waste is held where it was created at the Australian Nuclear Science and Technology Organisation's (ANSTO) Lucas Heights nuclear reactor facility in southern Sydney. This material is Australia's highest-level radioactive waste and poses the most significant management challenge. Much of the low-level waste is at the Defence Department's Woomera site in northern South Australia.

Australia's highest-level radioactive waste is secured at the Lucas Heights nuclear reactor facility in southern Sydney and **can remain safely stored there for "decades to come."**

The National Radioactive Waste Management Project

The current preferred federal plan involves (i) emplacing containerised low-level radioactive wastes and covering these with earth and (ii) the extended above ground storage of intermediate level waste at a single site near Kimba on South Australia's Eyre Peninsula. The LLW would be disposed of in-situ and there is no intention to recover this material. There are plans to remove the higher-level ILW waste for future deep geological disposal at a location yet to be determined after a period of between 20 to 100 years. The current national approach of double-handling intermediate level waste is not consistent with best international practice. Instead it is based on unnecessary transport and handling and replacing above ground extended interim storage at ANSTO for above ground extended interim storage at a less resourced regional facility.

Former Resource Minister Matt Canavan identified the Napandee site near Kimba as the government's preferred waste location in February 2020 and since this time the federal government has been seeking to advance changes to Australia's radioactive waste laws that both cement this site selection and seek to remove this from any independent legal review.

There is considerable Aboriginal and wider community concern and opposition to the waste plan. Existing state legislation, the SA Nuclear Waste Facility (Prohibition) Act 2000, makes the federal plan unlawful in SA and the SA Upper House has called for the project not to go ahead. While the federal government could override any state legislative roadblocks, doing so would be inconsistent with leading practise for facility siting and open to regulatory and procedural contest.

The employment and economic opportunities provided by the federal radioactive waste plan are modest. There would be some short-term fencing and construction work and there is uncertainty and challenge to the proponents claim of 45 jobs. There is also a 'community benefit fund' and associated infrastructure and training packages of around \$30 million.



Stored radioactive waste. *Photo. ychal/Shutterstock.com*

The case for a revised approach:

Previous federal attempts over many years to impose a radioactive waste dump on multiple sites in regional South Australia and the Northern Territory have all failed and there is growing community and stakeholder concern over the Kimba plan.

Leading civil society organisations including environment, public health, Indigenous and trade union groups all support an expert, open and independent Inquiry into the full range of radioactive waste management options.

Radioactive waste remains a concern for thousands of years and its management demands the highest quality decision making and information. Enhanced and extended interim storage at the two current federal facilities offers a policy circuit-breaker and, coupled with an options review, is the best way to identify and advance lasting and responsible radioactive waste management.

Extended interim storage of Australia's intermediate level waste at Lucas Heights is the most prudent and credible management option, given this site is already home to the most problematic wastes, and:

- ANSTO is already both the continuing producer of and home to virtually all of Australia's higher level radioactive waste
- ANSTO has certainty of tenure, a secure perimeter and is monitored 24/7 by Australian federal police
- the waste will be actively managed as operations at the site are licensed for a further three decades
- it keeps waste management on the radar of the agency with the highest level of nuclear expertise and radiation response capacity in Australia.

After community opposition and Federal Court action ended an earlier proposed waste site at Muckaty in the Northern Territory, ANSTO constructed and commissioned a new purpose-built store dedicated to housing reprocessed spent nuclear fuel waste which returned from France in late 2015.

This Interim Waste Store has a conservative design life of 40 years, its license is not time limited and it has (if required) regulatory approval to store these reprocessed wastes 'until the availability of a final disposal option.

Extended interim storage at ANSTO helps reduce any political or external pressure to fast-track a 'remote' site for a national facility and increase prospects to advance responsible management.

Storage at ANSTO has been previously identified as a credible and feasible option by ANSTO, nuclear industry lobby group the Australian Nuclear Association and, most importantly, the federal nuclear regulator, the Australian Radiation and Nuclear Safety Agency (ARPANSA) whose CEO told a Senate Inquiry in June 2020 that intermediate "waste can be safely stored at Lucas Heights for decades to come."

At the same Inquiry ARPANSA confirmed it "is aware that some stakeholders have interpreted ARPANSA's decisions regarding the IWS as a requirement for relocation of the waste stored in the IWS, even suggesting that there is an urgent need for relocation. This is not correct. ARPANSA has not raised safety concerns regarding storage of waste at the IWS."

There are no regulatory or radiological impediments to extended interim storage at Lucas Heights. ANSTO's facility is prohibited from becoming a permanent disposal site, however there are no comparable constraints on it as a site for extended storage. Importantly, this approach also provides the ability to have an evidence based and open review of the best long-term management options.

Builders have a maxim: measure twice, cut once. This sensible approach should also inform Australia's approach to radioactive waste management, especially in relation to the unnecessary double-handling of intermediate level wastes.

Nothing about the nuclear industry, especially nuclear waste, is clean or uncomplicated but extended interim federal storage at existing sites – coupled with a wider robust public review of the full range of longer term management options – is the approach that is most likely to advance and realise lasting and responsible radioactive waste management in Australia.