



The case for a National Radioactive Waste Management Facility

A National Radioactive Waste Management Facility will bring together radioactive waste that has built up over about 60 years, which is currently spread over more than 100 locations around the country, and consolidate it into what will be a single, safe, purpose-built, state-of-the-art facility.

That National Radioactive Waste Management Facility will be for the storage of legacy and future Australian radioactive waste. Low level waste will be permanently disposed of at the Facility, and intermediate level waste will be temporarily stored at the Facility, likely for several decades. After the existing proposed facility is built, a separate process will take place to find a different site, for a different type of facility for the permanent disposal of intermediate level waste.

Radioactive waste is currently kept in a number of locations including at science facilities like the Australian Nuclear Science and Technology Organisation (ANSTO) and CSIRO, at the Department of Defence as well as at hospitals and universities.

It has long been recognised that Australia's radioactive waste needs to be managed at one single facility, in line with international best practice. To that end, Australia has had numerous parliamentary inquiries, reports, and consultation processes to find the right location for this permanent facility.

We are following a process that was designed by experts, and includes academics and environmental representatives, and which is consistent with that used in a range of other countries such as France, the UK and Canada.

Finding a location for the Facility

The process relies on three core principles:

1. A site that has voluntarily nominated by a landowner;
2. Land that is technically suitable to host a facility of this type; and
3. A community surrounding the facility who are broadly supportive of hosting the new industry, and who could provide an ongoing workforce over its operational lifetime.

At all points through the process, information is provided to the community transparently, and to inform decision-making.

There are currently three sites being considered for the project – one at Wallerberdina Station, and two at Kimba – and the aforementioned criteria must be met for any of these to be chosen as the final location for Australia's National Radioactive Waste Management Facility.

We are having this discussion with communities who have told us they want to have it.

The two communities are now in the second phase of the project, which involves in-depth community consultation and detailed technical assessments, to understand whether the nominated sites meet the technical requirements and whether the community is broadly supportive.



AECOM is conducting analysis at each site to understand their technical suitability for hosting a National Radioactive Waste Management Facility. Consultation continues in both communities to provide them with information on the project and to capture their views.

What radioactive waste will the Facility hold?

The National Radioactive Waste Management Facility will be for the permanent disposal of Australian low level waste, and will temporarily store intermediate level waste, likely for several decades. Australia does not produce high level waste and high level waste will not be kept at this facility.

A separate process will identify a different site at a different location for the permanent disposal of intermediate level waste. That is in line with international best practice and it is the requirement of the Australian regulator that this will proceed. The detail of this was reconfirmed in the new Framework, which was recently released and can be found at www.radioactivewaste.gov.au.

Why can't the waste stay where it is?

Radioactive waste and materials are currently stored in more than 100 sites across Australia, and in line with international best practice, statements made by the Australian independent nuclear regulator, and bipartisan legislation in the Australian Parliament, these stores need to be consolidated into a single, safe, purpose-built National Radioactive Waste Management Facility.

There are a number of reasons for this:

- **None of the facilities that store radioactive waste are disposal facilities.** Temporary storage facilities are not practical for material that requires monitoring for 200-300 years (low level waste), or even longer (intermediate level waste). The National Radioactive Waste Management Facility will be for the permanent disposal of low level waste with intermediate level waste temporarily stored there. A separate process will take place to find a different location for intermediate level waste disposal.
- The Australian regulator and international best practice require **responsible, long-term full life cycle management of radioactive waste.** A central, purpose-built, state-of-

the-art facility for the entirety of Australia's waste, means the regulator and community can be confident in knowing that waste is consolidated, its contents is fully understood and that it is being managed safely in line with best practice.

- The National Radioactive Waste Management Facility will need to be operational **for several hundred years with little or no change to it or the land it occupies.** Therefore it should be located in an area without the competing land uses seen in a metropolitan area and near a community that can support the long-term workforce required to operate it. This will also mean the Facility can provide benefits to the host community.
- The Department has already undertaken work to better understand the suitability of Commonwealth land to host the Facility, and **no such land is considered suitable at this time.**

The siting of Australia's radioactive waste facility **follows international best practice**, which places a strong emphasis on voluntary land nominations and community consent.

Why not at ANSTO or Woomera?

Just like the other facilities spread across the country, neither ANSTO nor the CSIRO-managed store at Woomera were built for the purpose of becoming the permanent storage or disposal location for Australia's radioactive waste.

The Woomera site is a Defence Establishment located near operational zones. The waste at Woomera must be relocated out of the controlled defence area.

Other sites, including Woomera have previously been considered for waste facility, and ruled out.

ANSTO's Lucas Heights campus is not large enough to store all of Australia's radioactive waste.

The Facility requires 100 hectares and the Lucas Heights campus is only 70 hectares in size, with already more than 80 buildings on it.

The remaining free space on the site will be needed to accommodate the expansion of the campus's future science infrastructure and research activities, as a dynamic hub for collaborative research, innovation and industry engagement.

The Lucas Heights campus is only licensed by the independent nuclear regulator ARPANSA, to store waste on a temporary basis, and on the condition that a plan is developed by the end of the decade for a final disposal pathway for its waste.

Where does radioactive waste come from?

Radioactive materials bring major benefits to Australia, through their use in medicine, scientific research, industry, agriculture and technological fields. Along with these benefits comes a responsibility for the safe and proper management of the by-product, radioactive waste.

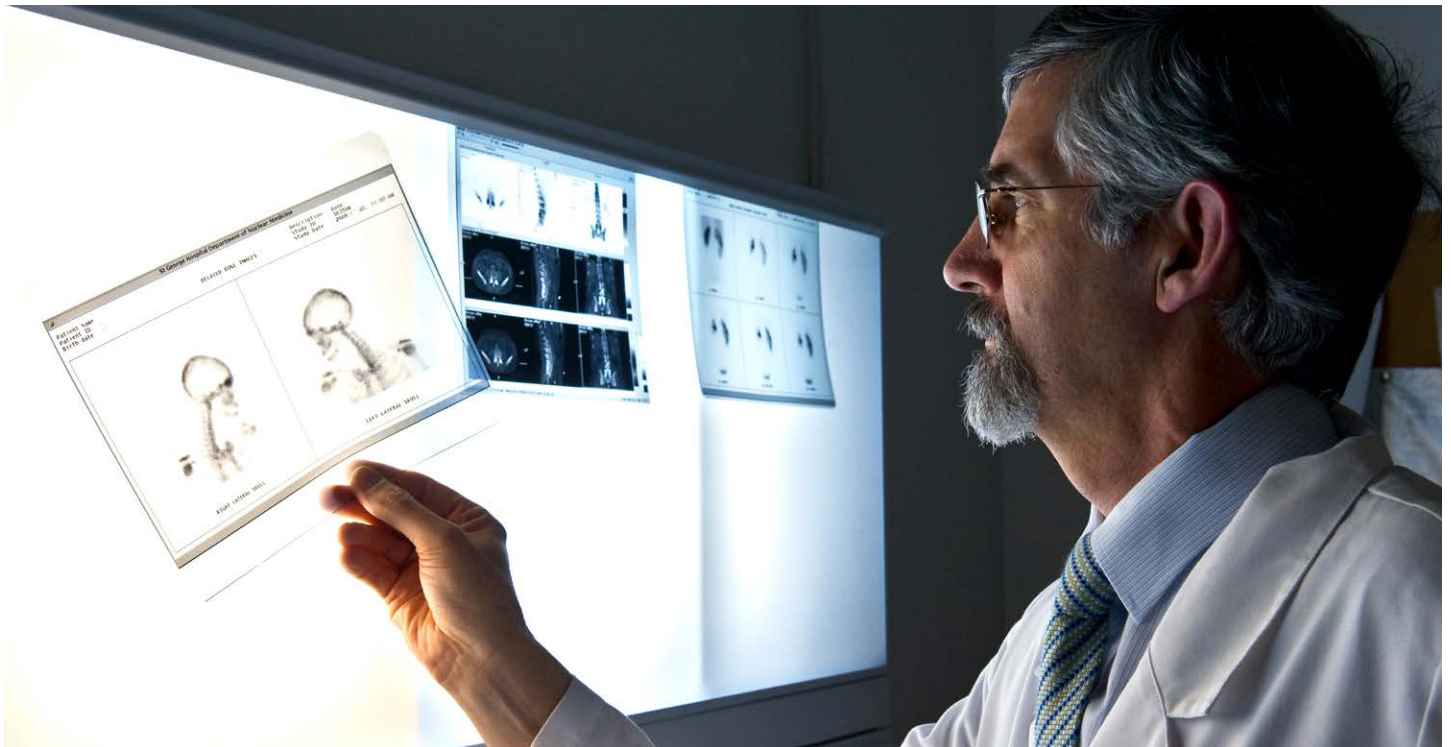
Much of Australia's current and future radioactive waste production is linked to the production of nuclear medicines that, on average, one in two Australians will need in their lifetime. Waste is generated in the production and use of nuclear medicines, as well as through research and from industry.

Nuclear medicine production in Australia is predominantly carried out at ANSTO, in the OPAL

multi-purpose research reactor. OPAL is used to produce the world's most commonly used nuclear diagnostic agent, molybdenum-99 (the parent isotope of technetium-99m), which is used for diagnostic imaging of heart and lung disease, and bone scans.

OPAL also currently supports a number of clinical trials, which are testing promising new treatments for prostate and pancreatic cancer, neuroendocrine tumours and childhood cancers.

OPAL is also used to irradiate more than 45 tonnes of high-grade silicon each year, the raw material that enables high-powered electronic devices such as solar farms, hybrid cars and wind farm technology.



One in two Australians, on average, will need to receive a dose of nuclear medicine treatment at some point in their life. Nuclear medicine is used in diagnosis or treatment of heart, lung and muscular skeletal conditions, as well as cancers such as neuroendocrine tumours and prostate cancer.



This document is part of a series of factsheets providing information on the process to site the National Radioactive Waste Management Facility.

For more information

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