

# The facts on the National Radioactive Waste Repository

As you may have heard, the Commonwealth Government is currently looking for a site for a low level radioactive waste repository in central-north South Australia.

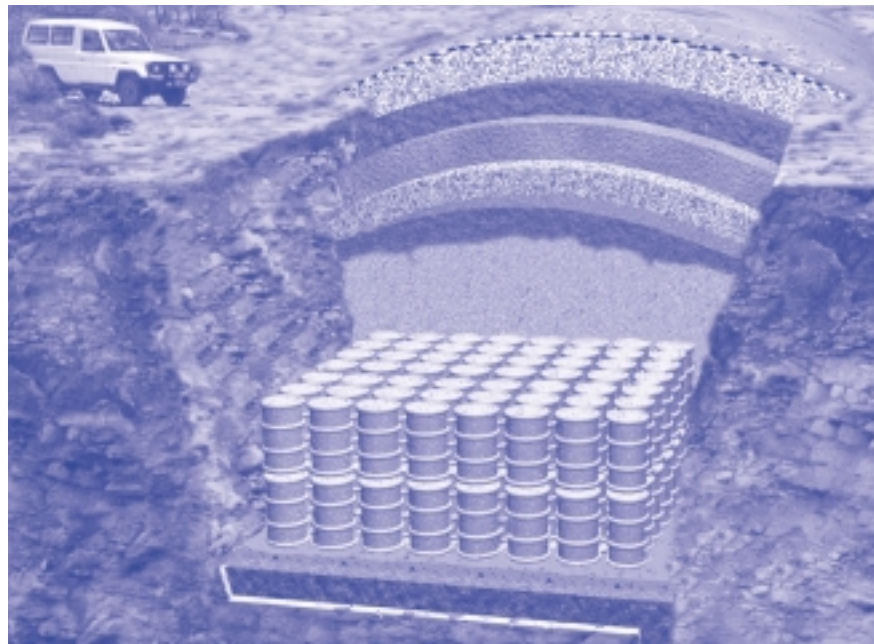
This newsletter talks about why we need a repository, why the central north has been chosen, the safety of a repository and other issues you may have questions about.

If you have any more questions, please feel free to contact us. Our details are on the back of this newsletter.

## Why do we need a repository?

All Australians benefit from the medical, research and industrial uses of radioactivity. For instance, over 20,000 South Australians every year use radioisotopes produced by the Lucas Heights research reactor in medical procedures such as cancer treatment.

But these beneficial uses of radioactivity do generate radioactive waste. Over the past 40 years, Australia has accumulated around 3,500



The actual disposal trenches in the repository will cover an area no bigger than a football field (100 by 100 metres) and will be surrounded by a buffer zone so that the total area of the site will be 11/2 by 11/2 kilometres. The repository will consist of one or more trenches about 20 metres deep lined with various materials as appropriate, and covered with layers of materials to control wind and water erosion and eliminate the possibility of accidental human contact.

cubic metres of low level radioactive waste of our own.

Over half of our low level waste consists of some 2,000 cubic metres of lightly contaminated soil that has been stored near Woomera for the past four years. The balance of our existing stock

of low level waste consists of paper, plastics, glassware and protective clothing, luminous watches, compasses, gauges and exit signs.

This waste is currently stored temporarily at over 50 locations around Australia, including hospitals and universities, and in the middle of capital cities.

The current temporary storage arrangements are far from ideal and have caused continuing concern among some local communities.

Space at many of the storage sites is also running out.

A purpose built repository is the responsible approach to

the long-term management of this material.

With its vast areas of semi desert and geologically stable country, Australia is in an ideal position to find a good site to locate its low level radioactive waste.

In Europe for example, with its far greater population densities, repositories have been safely established close to communities and farms.

The famous Champagne area in France is home to one of the world's largest repositories which will contain many times the material to be held at the Australian site.

It is recognised throughout the world that the best way to deal with low level waste is burial in a properly sited, designed and operated facility.

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One of the investigation sites in stony desert country in the central north region of South Australia.

# The latest news

Following recent consultation with the community in central-north South Australia, the Department of Industry, Science and Resources announced on 18 November 1999 that two sites had been withdrawn from being considered for the national radioactive waste repository.

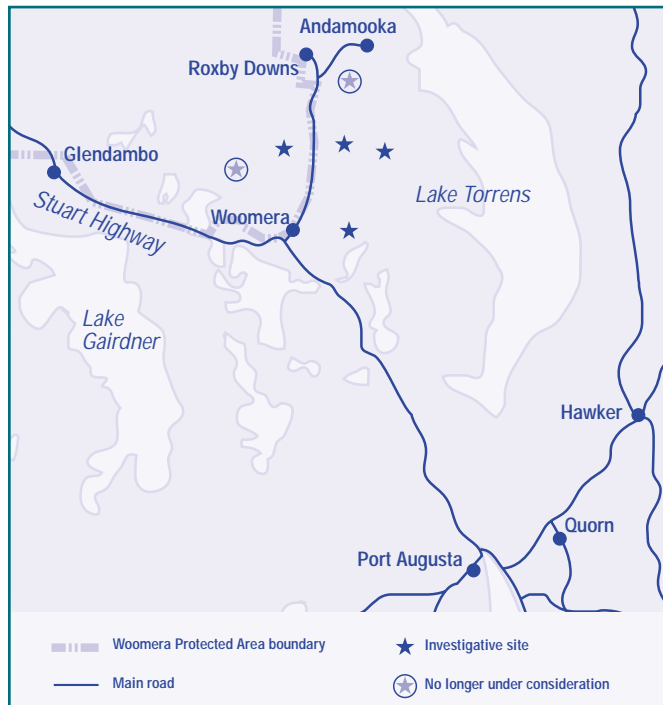
The two sites withdrawn were site 16 (located about 20 km south of Andamooka) and site 33 (located in the Woomera Prohibited Area, between Roxby Downs and Woomera).

Jeff Harris of the Department of Industry, Science and Resources, said there has been a strong commitment to consulting with the community on the siting of the repository.

He said that in October a Regional Consultative Committee meeting was held in Woomera to discuss the shortlist of six sites with the local community. The department had also been discussing the shortlist with pastoralists, indigenous groups and other stakeholders.

“Given the concerns raised by the Andamooka community and indigenous groups, we decided not to proceed with investigation of site 16,” Mr Harris said.

“With site 16 being withdrawn, the closest site to Andamooka will now be 40 kms away.



Investigative Sites in the Central-North Region of South Australia for the National Radioactive Waste Repository.

As well as site 16, Mr Harris stated that site 33 was withdrawn from consideration.

“Site 33 was withdrawn based on concerns raised by indigenous groups and the Department of Defence.

“The Department of Defence has indicated that site 33 could interfere with the operations of a nearby target range.

“However, contrary to some media reports, the Department of Defence has stressed that they are willing to consider other sites for the repository within the Woomera Prohibited Area.”

With the withdrawal of sites 16 and 33, consideration is being given to investigating another site within the Woomera Prohibited Area, as well as the four other sites remaining on the short-list.

A preferred site for the repository is expected to be announced during the first half of 2000, following further consideration of heritage issues and drill investigation of the remaining sites. The preferred site will then be subject to extensive environmental assessment involving further consultation with the local community.

## Finding a site for the repository

In 1992 the Commonwealth Government began an Australia-wide search for a suitable repository site.

In 1994, eight regions in Western Australia, Queensland, the Northern Territory, New South Wales and South Australia were short-listed on the basis of scientific, social and technical criteria and public comment.

After 4 years of further study the central north region of South Australia was identified as the best region in Australia to site a repository.

The assessment was made on internationally accepted criteria adapted to Australian conditions including:

- Geological stability
- Geochemistry
- Depth and quality of groundwater
- Low rainfall
- Surface drainage
- Transport access
- Low population density

Once the central north of South Australia was selected, the search began within the region for the best possible site.

Over the past year the number of possible sites in the region has been narrowed down to a short-list of four.

This process has involved extensive consultation with community groups, pastoralists and Aboriginal groups in the region, as well as test drilling at each site.

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This method has been safely practised in many countries around the world. In 1996, 30 countries were operating about 70 repositories for low-level or intermediate level waste in their country, with another 30 in the process of being established.

### How safe is a repository?

Beyond the repository buffer area radiation levels will be no greater than normal background. This means no members of the general public, animals or crops will be exposed to any radiation whatsoever from the repository. Due to the

short-lived nature of the material, the engineered barriers and the natural characteristics of the site, there is no possibility of any contamination of groundwater. Of course, the repository, will be constantly monitored to ensure its absolute safety.

# No to overseas waste!

The Commonwealth Government has given a 'categorical no' to Australia accepting other countries' nuclear waste.

The Minister for Industry, Science and Resources, Senator Nick Minchin, says it is the government's firm policy that each country should look after its own waste.

"Australia has a national responsibility to look after its own radioactive waste and that's the reason why we are establishing the waste repository - for our own waste, and no one else's," Senator Minchin said.

"But the government has been absolutely clear on the fact that Australia will not take any type of radioactive waste from overseas. We have told Pangea time and time again to forget about Australia as a site for overseas waste.

"I regret the scaremongering and dishonesty of the groups who say the low level repository is the thin end of the wedge for Australia accepting high level waste from overseas.

"We have a responsibility to store our own waste and that's where it ends."



In Europe many repositories have been safely established close to communities and farms. The Drigg repository in Cumbria in the United Kingdom, is surrounded by farmland and waterways.

## The store for intermediate level waste

Contrary to media reports you may have heard, no decision has been made to locate a store for intermediate level waste in South Australia.

However, we will need to find a location for a store for intermediate level waste but this will involve consideration of sites across Australia.

### Why do we have intermediate level waste?

Long-lived intermediate level waste comes from many sources, including the production of radioisotopes, radioactive materials used in medicine and the treatment of spent fuel rods from the Lucas Heights research reactor. The reactor produces radioactive materials used in medicine, industry and research, which benefit all Australians.

The table, right, using the latest available nuclear medicine statistics from Medicare, shows how people across Australia are benefiting from radioisotopes in medical diagnosis and treatment.

Since we need the medical and other benefits of radioactive products, we have to find a responsible way to deal with the intermediate waste which is generated as a result.

### How is intermediate waste stored?

About 500 cubic metres of long-lived intermediate level waste is currently held at various locations around Australia. 100 cubic metres of this waste belongs to the States and Territories.

South Australia holds its own intermediate level waste at over 10 sites around the State, including at hospitals and research institutions in Adelaide.

Another 35 cubic metres of intermediate level waste are currently stored in a bunker at Woomera.

Rather than have this intermediate level waste stored around the country, the government has decided that a central storage facility is required in the future for its safe and effective management.

But no decision has been made on where this store will be located. We do not need to have an intermediate store built until 2015 when reprocessed spent fuel rods are returned to Australia.

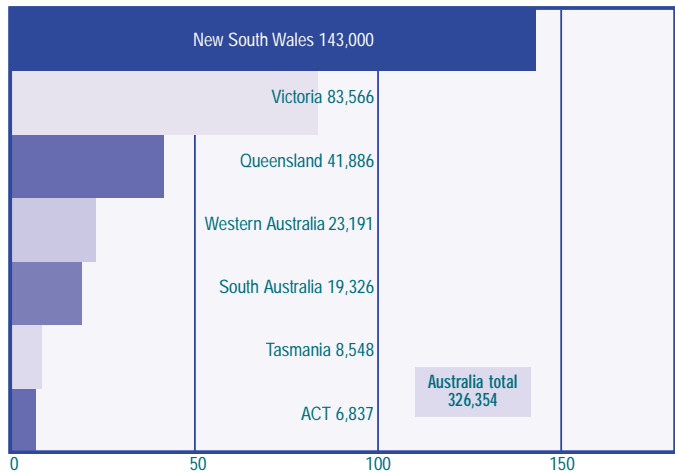
Before any decision is made, a number of options will be considered for siting the store in various locations around Australia. One option that will be considered is co-locating the store at the same site as the low level repository.

The Government has been open in stating that

co-location is an option. Co-location has been mentioned in a number of publicly distributed reports, media releases, radio interviews and discussions between Commonwealth and South Australian officials.

But co-location is only one option. It will be considered equally with other options for sites across Australia.

There is no hidden agenda for the central-north to be the site for an intermediate waste store.



MEDICARE DATA FOR 1996 Estimated number of patients who received a reactor-derived radio pharmaceutical

## Radiation - what is it?

All humans are exposed to natural radiation, or what is referred to as background radiation, which comes from outer space and from the rocks and soil on earth. There is also radiation from man-made sources, mostly medical applications.

Natural radiation exposure varies according to the altitude and the geology of where we live. For example, someone living at 3,000 metres is exposed to about 5 times the natural radiation level than someone living at sea level.

Everything we eat or drink is also slightly radioactive. Radioactive material occurs naturally in the human body.

There is no difference between the radiation produced by nature and that produced by man, with most man-made radiation the result of medical sources such as diagnostic X-rays for teeth, chest and limbs.

For a dental X-ray the average dose of radiation is below that of taking a return flight from Australia to Europe, which in turn, is

about one tenth of the average annual background radiation exposure in Australia.

Someone standing outside the buffer zone of the National Radioactive Waste Repository would not receive any exposure to radiation from the repository. The radiation level would be the natural background radiation level for the area.

A drum of waste material going into the repository would typically have a radiation dosage range from a few thousandth's of a milliSievert to a few

hundredth's of a milliSievert per hour. The safe limit for occupational exposure is 20 milliSieverts per year.

Compare this to the average background radiation dosage level in Australia which is about 2 milliSieverts a year.

Stringent safety measures will apply for those people working within the repository, which will be constantly monitored to ensure that radioactive material does not escape from the site.



Laboratory refuse will make up a high proportion of the radioactive material in the repository.

## We welcome your views

The Department of Industry, Science and Resources welcomes your views about the newsletter and the National Radioactive Waste Repository project. Your comments help us in assessing the impact of the newsletter and ensuring that it remains relevant and informative.

### Want to know more?

For more information on issues covered in The Monitor:

Internet site  
<http://www.isr.gov.au/resources/radwaste>

Email  
[Repository@isr.gov.au](mailto:Repository@isr.gov.au)

Postal  
National Radioactive Waste Repository  
Coal and Mineral Industries Division

Department of Industry, Science and Resources  
GPO Box 9839  
Canberra ACT 2601

Tollfree message  
1800 682 704 (further information can be requested by leaving a message on this number.)

## Transporting radioactive waste

Due to the small quantity of radioactive waste Australia produces, transport to the repository will be infrequent - probably only a few times a year.

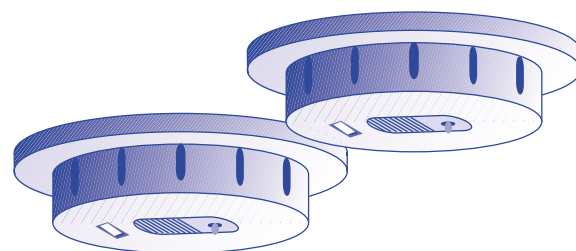
Transport of waste will be by road, and possibly rail, and will be conducted in accordance with international standards set out in the National Code of Practice for the Safe Transport of Radioactive Substances as well as relevant state and territory safety regulations.

Low level and short-lived intermediate level radioactive

waste is regularly transported every day in Australia and around the world and is considerably less hazardous than flammable and toxic materials.

There has been a long record of safe transport of radioactive materials with more than 20 million packages containing such material safely transported through the world each year.

Over 30,000 packages of radioactive material are safely transported in Australia each year.



One of the most common uses of radioisotopes is probably only a few metres away—in the smoke detector. These detectors contain a tiny amount of radioactive material which makes the detector sensitive to smoke.

Every home first-aid kit has items sterilised by radiation. They include cotton wool, burn dressings and bandages.