

EIS report available for public comment

The Environmental Impact Study into the proposed National Repository for low-level radioactive waste was released for public comment on 29 July 2002.

This exhaustive study was undertaken after an extensive site selection process and community consultation had identified one preferred and two alternative sites, all in northern South Australia.

The EIS is currently in the 'public comment' phase of the process, which will conclude on 20 September 2002. A supplementary report will then be prepared responding to issues raised by the public, and it will be submitted to the Minister for the Environment and Heritage. The Minister then has up to 60 days to make a decision on the proposal,

expected in late 2002/early 2003, together with any conditions that may be required.

What's in the EIS?

The report is in the form of two volumes, a main report (over 300 pages) and a volume of appendices (over 300 pages) plus a brief summary document of approximately 30 pages. The summary document reflects the content of the main report, and has 15 individual sections.

The many aspects covered by the summary report are shown with easily identifiable

headings - such as 'Description of Repository Facility' - and are indexed so that even the casual reader can readily locate sections.

A considerable effort has been made to minimise the use of technical and scientific language in the summary to make the text as easy to follow as possible, and the text is supported by appropriate tables and illustrations.

The text of the main document and appendices is more formal, and the appendices are of a highly technical nature - providing support for the key issues discussed in the main report. The idea is to have all the essential text about the EIS on hand for the reader.

Where can I find the EIS?

Copies of the EIS can be viewed at the following locations:

The South Australian State Library, North Tce, Adelaide

Australian Government Info Shop, 60 Waymouth Street, Adelaide

SA Government Environment Shop, 77 Grenfell Street, Adelaide

Woomera Heritage Centre

Roxby Downs Municipal Council offices, Richardson Place, Roxby Downs

Port Augusta Library, 4 Mackay Street

SA DEST, KPMG House, Level 4, 115 Grenfell Street, Adelaide

The full report (main document, and Appendices, as well as the Summary) can also be viewed on the Department of Education, Science and Training website www.dest.gov.au/radwaste/draftEIS

Do you want to have your say?

An important objective of the EIS process is to ensure that all relevant information has been collected and assessed so that the Commonwealth Government can make an informed decision on the proposal.

Making a submission is a way for the community to provide information to the proponent and the decision makers about the proposal. Interested persons, groups and authorities are encouraged to make a submission on the proposal and the draft EIS.

Viewing or obtaining a copy of the repository EIS

The Draft EIS will be available for public review from 29 July to 20 September 2002. Exhibition points are indicated above.

The Draft EIS and Summary will also be

available on the Department of Education, Science and Training's internet site: www.dest.gov.au/radwaste/draftEIS

How to make a submission

A submission can comment on any aspect of the proposal. It may provide information, options or suggestions on the material contained in the Draft EIS or may also identify errors or omissions. Comments may be made on general issues or specific items, they may cover related facts or topics that should be considered and may include suggestions on how to improve the proposal.

It is helpful if you can:

- ◆ provide your comments in point form so that the issues raised are clear to the reader
- ◆ refer each point to the appropriate sections of the Draft EIS

- ◆ include your name, address and date
- ◆ ensure that the submission is as clear as possible if hand written.

All submissions will be treated as public documents unless confidentiality is requested.

Submissions can be made by letter/fax/e-mail and should be sent to:

Radioactive Waste Repository EIS

Department of Education, Science and Training (Location 742)
GPO Box 9880 CANBERRA CITY ACT 2601

Facsimile: 02 6240 9184

Email: repository@dest.gov.au

Submissions must be received at DEST (Canberra) by 3pm on 20 September, 2002. Brief enquiries can be left on the Hotline (toll free) 1800 682 704

What happens next?

A Supplementary Report will be prepared taking into account and responding to the content of the public submissions received. The Supplement will be a public document. Together, the Draft EIS and Supplement will comprise the Final EIS.

After receiving the Final EIS, Environment Australia will prepare its advice to the Minister for the Environment taking into account the contents of the Final EIS and public submissions received.

The Minister for the Environment and Heritage will then provide his decision on the proposal to the Minister for Science including any conditions to be met to protect the environment. The final site will be determined by the environmental assessment process.

SA's proposed legislation

The SA Government's proposed legislation to ban the establishment of the national repository for low level waste in the state is inconsistent with the previously agreed national approach to radioactive waste management.

In 1992, all jurisdictions, including SA, agreed to a nationwide search for a site for a national repository for Australia's low level radioactive waste.

The SA Government's policy fails to recognise that, given the small amount of radioactive waste that Australia generates, national facilities make sense. It also fails to recognise the benefits South Australians receive from the use of radioactive materials in medicine, industry and research, including the benefits provided by the Lucas Heights research reactor.

It also fails to recognise that existing Commonwealth legislation, the Australian Radiation Protection and Nuclear Safety Act 1998, will have precedence over any state legislation, to the extent that they are inconsistent.

Licences issued under the ARPANS Act would cover the siting, construction and operation of the repository, including the transport of waste to the facility.

In establishing the national repository, the Commonwealth is acting to responsibly remove radioactive waste from the over 100 temporary storage locations in universities, hospitals and research institutions where it is currently held around Australia. The South Australian Government has not indicated what it is intending to do with its waste if it does not dispose of it in the national repository.



Public information days

A series of information sessions will be held in key communities during early August to explain the Environmental Impact Statement. Sessions will be held in Broken Hill, Port Augusta, Woomera, Roxby Downs and Andamooka.

They will be attended by representatives of the Commonwealth Departments of Education, Science and Training (the proponent of the national repository project) and Environment Australia (who will make the decision on the project); PPK Pty Ltd (the environmental consultants who wrote the EIS); and a radiation expert.

The sessions will enable members of the public to discuss the project and the EIS and to clarify any issues of concern that they may have. The information days represent an important element in the community consultation process for the repository project.

The sessions will be held at:

Broken Hill
Friday 16 August 2002, in the Westside Plaza Shopping Centre, from 9am to 5pm.

Port Augusta
Monday 19 August, at the front foyer of the Port Augusta Public Library, corner of McKay Street, from 10am to 4pm.

Woomera
Tuesday 20 August, in the foyer of the Dewrang Avenue Theatre, from 2pm to 9pm.

Roxby Downs
Wednesday 21 August, in the Roxby Downs Council Office in the main street, from 10am to 4pm.

Andamooka
Thursday 22 August, in the Andamooka Porch Hall, from 10am to 4pm.

Transporting low level waste

The transport of waste to the Repository would be nothing more than the continuation of the existing, routine movement of radioactive substances within Australia.

Over the past 40 years there have been no accidents during waste transportation in Australia where there has been any significant radiological release harmful to the environment or public health.

It is expected that waste material bound for the repository will be transported by road as this provides a safe, flexible, secure and cost-effective method.

The assessment has shown the major disadvantages of

rail transport to be additional handling of the material, and security difficulties in ensuring the same chain of custody when compared with road transport.

The use of ships is generally not relevant to the proposed repository. However, transport by ships or aircraft would be considered for the small amount of waste currently located in Tasmania.

Possible road routes to the repository have been identified and these

maximise the use of national highways, supplemented by state highways. Secondary roads were only selected where a connection between highways was needed.

In every case, the proposed routes have been nominated to reduce the impact of truck movements on communities. Also, over half the waste material is already stored near Woomera.

Responding to Emergencies

All states and territories have in place emergency response plans in the unlikely event of accidents or incidents involving radioactive (or other

hazardous) materials.

In most emergencies, the police, ambulance, fire services and State Emergency Services are the first to respond. In addition, the Commonwealth can provide additional assistance if required.

The state/territory teams have the required level of training, and the protective clothing and equipment needed to identify the nature of the hazard, and to retrieve material.

Resources are located in various country centres around each state, enabling rapid responses to incidents at relatively short notice.

What will the Repository contain?

One of the important requirements in the planning for a repository has been to determine exactly how much material exists, and specifically what types of material are currently being stored around the country.

The survey has shown that about 3,700 cubic metres of radioactive waste exists, the accumulation from over 40 years of research and medical and industrial uses of radioactive material.

Over half (2010 cubic metres) is slightly contaminated soil stored near Woomera, which arose from the CSIRO research into the processing of radioactive ores during the 1950s and 1960s.

The next largest single accumulation is 1320 cubic metres of ANSTO operational waste, including clothing, paper and glassware, stored at Lucas Heights near Sydney.

The Defence Department is storing 210 cubic metres, including contaminated soils from land remediation, sealed sources, gauges, electron tubes and other equipment, which is held at locations around the country.

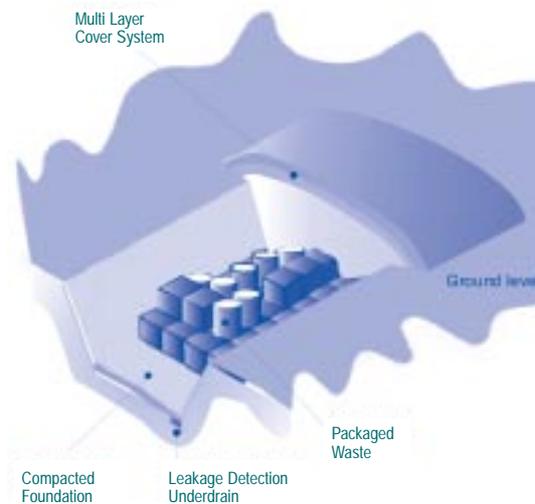
The remaining waste - approximately 160 cubic metres - comprises spent sealed sources and miscellaneous laboratory waste from hospitals, universities, industrial activities and other 'small users'.

This is stored in locations throughout Australia.

How much waste will be generated in the future?

The EIS process has determined that relatively small amounts of waste will be generated in future.

This is because recycling is now extensively practiced by



medicine, industry and research facilities.

It is anticipated that about 40 cubic metres of low level and short-lived intermediate level waste will be generated annually in the future.

Repository site selection a 9-year process

The selection of the preferred site and two alternatives for the repository has not been undertaken lightly and the EIS follows an extensive 9-year process involving an Australia-wide search and public consultation process.

The process was initiated by the Commonwealth Labor Government in 1992 after general agreement by the States and Territories on the need for a central, national repository for low-level waste. This decision recognized that, for the small amount of radioactive waste that Australia has, it would not be technically and economically efficient for each jurisdiction to establish its own disposal facility.

In 1994 eight regions, in Western Australia, Queensland, the Northern Territory, New South Wales and South Australia, were identified as areas likely to contain suitable sites based on the strict selection criteria.

After another four years of study, in 1998 the Central-north region of South Australia was identified as the best region in Australia to locate the repository. Following further extensive tests and public consultation, the preferred site and the two alternative sites were announced in January 2001.

The Store

Despite confusing media reports, it also needs to be emphasised that no decision has been made to store intermediate level waste in South Australia. Siting the national repository is an entirely separate process involving different selection criteria. Site selection for the intermediate level store is currently in progress. A short-list of possible sites on Commonwealth land is expected to be announced in late 2002.

Why the sites were chosen

The requirement was to locate a site suitable for the national repository so that low level waste presently housed at more than 100 urban and rural locations around Australia could be relocated.

Much of the waste being stored is housed in non-purpose built facilities potentially posing greater risk to the environment and people than disposing of it in a single purpose-built repository.



So that the material can be removed from unsuitable locations, it is proposed to construct a national near-surface repository at either the preferred site on the Woomera Prohibited Area or at either of the two nearby alternative sites.

The proposed sites are located approximately 400 kilometres north of Adelaide, between the townships of Woomera and Roxby Downs. They are located in stony desert country with sparse saltbush.

The preferred site, at Evetts Field West (Site 52a) and

the alternatives (Sites 45a and 40a) were chosen after a lengthy, rigorous search.

The selection criteria included:

- Geology (including clay content of rocks and geological structure)
- Ground water
- Transport access
- Prospects for long-term control and security

The views of regional stakeholders were also taken into consideration as heritage clearances.

Major survey of flora, fauna in EIS

A detailed literature review and an extensive field survey of flora and fauna were carried out as part of the EIS, with no significant adverse impacts expected.

There are no vegetation communities with recognised conservation status at any of the three sites.

The potential for impact upon the biological environment along the access roads to all three sites was assessed. The survey found that impact would be minimal if access roads were upgraded within the existing disturbed corridors and using existing materials from those corridors.

The survey found five threatened animal species within the three sites, the most significant being the Plains Rat. The other four species are vagrant or nomadic bird species.

The survey also found eight introduced mammal species and three bird species all contributing to decline of native species. However, the conclusion is that, providing suitable management actions are undertaken, such threats would not increase as a result of construction and operation of the waste repository.

The principle impacts would be associated with construction and these potential adverse environmental impacts can be managed or minimised through careful planning and monitoring.

The small area to be cleared would ensure only limited impact on vegetation communities.

The survey further concludes that the development of stock, pest animal and kangaroo proof fencing around the preferred site, and elimination of pest species from within the fenced area, would likely result in the development of a very useful ecological enclosure and reference area.

Low risk profile short and long term

It has been determined that not only would there be no routine radioactive discharges from the site, any risks which might arise in future years when the site is no longer under institutional control are acceptably low.

As part of the EIS process, the existing radiation at the sites was evaluated, and assessments were also made of any risks associated with operations, what risks there may be through various potential accidents or evolutionary scenarios, and the situation when the 200-year institutional period expired.

Site measurements at all sites showed no unusually high values of either naturally occurring radionuclides (e.g. uranium or thorium) or artificial radionuclides (such as from weapons testing).

The likely risks arising from a variety of naturally occurring scenarios (such as transition to a wetter climate state) and man-made scenarios (such as an aircraft crash) were assessed and found to be very low.

During the operation of the repository, radioactive waste would be brought to the site in an approved waste form and package. After being checked, the waste would be disposed of in the trench. Provision would be made for some simple repackaging of waste, if it was required.

The results of the various scientific assessments were that, in every case, the risk of radiation exposure is low or very low.

Protecting the geological environment

Extensive testing has been undertaken to ensure that the water table in the area of the three sites is not at risk.

Drilling investigations were undertaken in previous phases of the selection process and a further investigation was carried out during the environmental assessment process.

A series of hydrological (water) model simulations were undertaken to assess the potential infiltration of rainwater through various capping and base lining system scenarios.

Additional modelling of the movement of water from the surface through soil and rock to the water table was carried out.

The assessment indicates that rainwater infiltration would be minimal in all the cases examined, with the least infiltration experienced with a composite lining system at the base of the cover layer.

As an additional precaution it is proposed to compact the base of the repository and grade the finished surface to a sump to collect any free water and direct it to a sampling well.

In the highly unlikely event of any accident/seepage, the results from modelling to measure the movement of solutes through unsaturated soil and rock indicate that the amount of solutes originating from the repository reaching the watertable under a scenario of continual low level seepage for 100 years would be so low as to be, to all practical extent, undetectable.

Design and features

A preliminary design and an outline of the operational requirements have been undertaken, but the plans will be refined at the completion of the current EIS process.

The repository would be on a site measuring 1.5 kms by 1.5 kms but the waste would be buried only in the central area of 100 m by 100 m.

A multi-barrier approach would be adopted to containing the waste using

some, or all, of the following:

- ◆ the conditioned* waste packages
- ◆ the waste form
- ◆ the trench/borehole design
- ◆ the host rocks, arid environment and ground and surface water characteristics of the site.

The preliminary design calls for the waste to be buried in trenches and boreholes.

The trenches are expected to be about 12 metres wide

at the base to enable construction equipment to have access to them, and the depth is expected to be 15 to 20 metres below ground level. There will be five metres of cover between the surface and the top of the buried waste.

Boreholes would be approximately two metres in diameter and between 15 to 20 m deep. A suitable cover would be placed over the buried waste to limit infiltration of rainwater and to discourage entry of animals, plant roots and humans, and to inhibit erosion.

On the site there will be an operations building, decontamination/washdown facilities for plant and equipment, an office, a health physics facility, and services such as power, water and sanitation.

(* conditioning is those operations that produce a waste package suitable for handling, storage or disposal. Conditioning may include converting the waste to solid form, enclosure of the waste in containers, and, if necessary, providing an overpack).