

Geological disposal

Radioactive substances regulation - briefing note

January 2017

Much radioactive waste has already been produced as a result of the UK's nuclear power, research and defence programmes.

Nuclear sites and other users of radioactive material such as hospitals and universities continue to produce radioactive waste.

New nuclear power stations, proposed for England and Wales, will add further to the amount of radioactive waste produced.

All this waste needs to be properly managed to protect people now and in the future.

Geological disposal

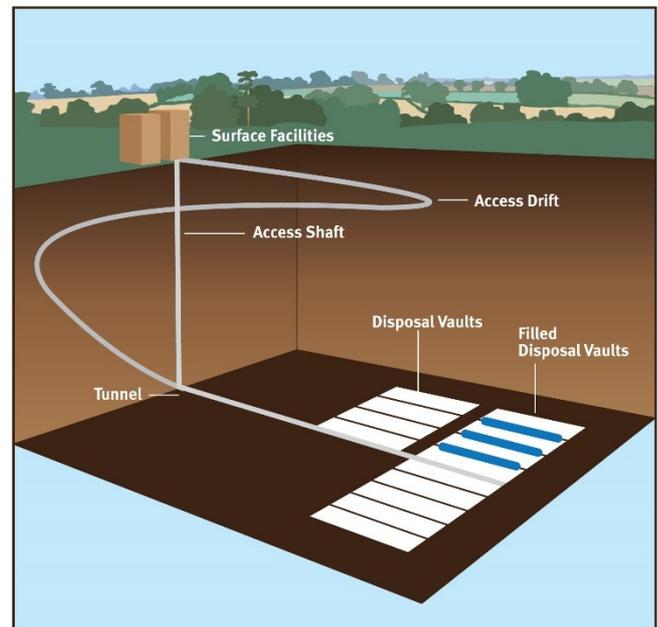
Geological disposal has been accepted by UK Government as the best available approach and a sustainable way of managing higher activity radioactive waste in the long term.

We use the term 'higher activity radioactive waste' to refer radioactive wastes that are unsuitable for disposal in existing near-surface radioactive waste disposal facilities.

Geological disposal involves disposal of radioactive waste in a specially designed facility deep underground. Disposal means placing radioactive waste in the facility with no intention to retrieve it afterwards.

The design of the facility and its contents, and the properties of the surrounding rock provide barriers against the escape of radioactivity. The depth of the facility will protect the waste from effects at the surface, such as future climate change.

The design of a geological disposal facility will depend on its host geology and different possible



Operational geological disposal facility

designs exist for clay formations, salt deposits and hard rock such as granite.

The artist's impression shows a facility design with vaults for waste disposal, access tunnels and a shaft for access from the surface.

Our view on geological disposal

In our view, geological disposal is an environmentally safe and sustainable option for long-term radioactive waste management.

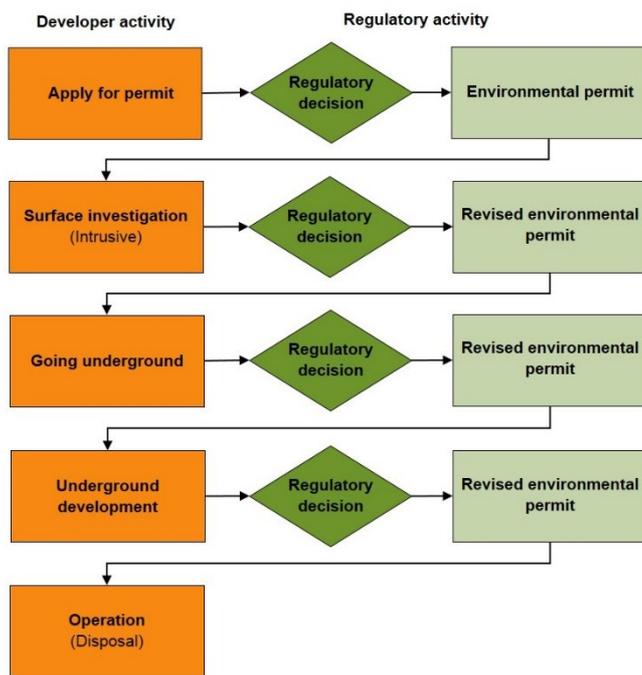
In the absence of a geological disposal facility, higher activity wastes must be managed in interim facilities that are designed, constructed, operated and maintained to provide safe, secure and environmentally acceptable storage.

We wish to see progress towards implementing geological disposal because continuing storage of wastes at the surface would require ongoing management and intervention lasting many years, and for some wastes potentially several hundred thousand years, which would place an unnecessary burden on future generations.

Our regulatory role

We are the environmental regulator for England. We would be responsible for making sure that any future geological disposal facility in England meets the required high standards for protecting people and the environment when it is being developed, while it is operating and after it has closed.

We will regulate the development of any future geological disposal facility using a process known as ‘staged regulation’. The diagram shows a simplified outline of how we expect staged regulation to work.



At the outset, the developer will need to obtain an environmental permit from us before starting site investigation work such as drilling boreholes to investigate the geology at a potential site.

Our regulatory approval will be required before the start of each subsequent development stage. Work would not need to stop completely at each of these decision points; a developer may continue to gather information while we make a regulatory decision but work on the next stage would only be allowed to start if we decide to issue a revised environmental permit.

The developer will not be allowed to dispose of radioactive waste without an environmental permit.

We will not grant an environmental permit to allow disposal operations to start if the facility does not meet our required regulatory standards.

After start of operations, regulatory control will be required for many decades and possibly for more than a hundred years.

Selecting a site

As the environmental regulator in England, we do not have a role in the decision-making process for selecting a site for a geological disposal facility. During the site selection process, we will work with communities, local authorities and others to increase understanding of our role and regulatory process. We will also provide advice and comment on environmental matters within our regulatory remit.

Working with others

We are working with the Office for Nuclear Regulation which regulates nuclear safety, security, safeguards and transport of radioactive material. We are working together as joint regulators of any future geological disposal facility in England.

We are also actively involved in the UK Government’s programme for implementing geological disposal. We provide advice and comment on regulatory issues to Government, the Nuclear Decommissioning Authority (NDA), local authorities, communities and the public.

Getting involved

During the site selection process, we will participate in public events and, if these are near you, you can come and speak to us.

You can also contact us by e-mail: geological.disposal@environment-agency.gov.uk

Our regulatory role will start when a developer decides to apply for an environmental permit. As part of our regulatory process, we will consult widely and this can include holding public events. You can participate in our events or you can respond in writing to our consultation.

Further information

<https://www.gov.uk/government/collections/geological-disposal-facility-qdf-for-high-activity-radioactive-waste>

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03708 506 506

incident hotline
0800 80 70 60

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0345 988 1188

www.gov.uk/environment-agency