Planning Guidance for on-site disposals – context and background

Purpose

To produce guidance for issue by MHCLG/BEIS to local authorities and site operatives as to the context of on-site disposal.

The purpose of the guidance is to provide site operators, planning regulators and third parties with a common understanding of:

- When planning permission is required
- The vires and responsibilities for site operators, planning authorities and other regulators
- The processes to be followed by operators and planning authorities
- Engagement with a wide range of stakeholders.
- Timescales and routes for engagement

Background

The Guidance to be written will be concerned with planning permissions required for the on-site disposal of low and very low level radioactive waste.

The UK currently has 36 licensed nuclear sites, including power stations, MOD facilities, nuclear fuel processing facilities, and facilities for research, healthcare and waste processing. Of these 36 sites, 20 are being decommissioned.

In the early stages of decommissioning of a nuclear reactor, the spent fuel and higher activity wastes are removed and stored securely elsewhere, resulting in radiological hazards on the site falling by over 99%. In the final stages of decommissioning and clean-up, risks and hazards are comparable to those on non-nuclear industrial sites undergoing clean-up and the focus is on land remediation. Figure 1 presents the lifecycle of a nuclear power plant.

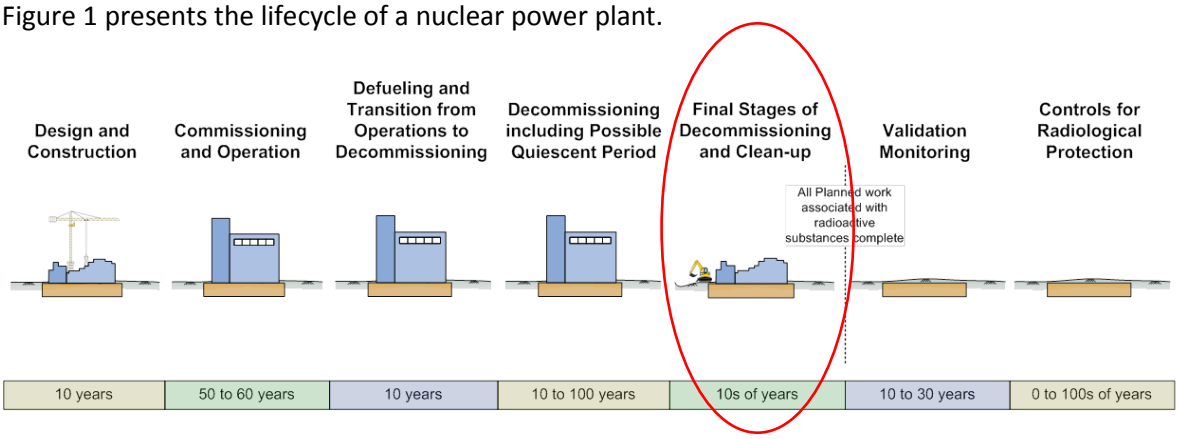


Figure 1: Lifecycle of a nuclear power plant

During these final stages, as buildings are demolished, large amounts of waste are generated. Most of the waste volume is conventional waste, in the form of rubble, concrete, brick, soil, drains and

pipelines. However, a small percentage is radioactive; mostly Low Level Waste (LLW) and Very Low Level Waste (VLLW). Although the proportion of waste that is radioactive is small, the amounts are nevertheless significant, typically thousands of cubic metres.

Under some circumstances, it may be safe to leave lightly contaminated structures in-situ ("in-situ disposal") or to use lightly contaminated rubble to fill voids or to undertake landscaping on site ("disposal for a purpose"), or it may be appropriate to construct barriers around lightly contaminated material ("engineered disposal facilities"). Collectively, this report refers to these methods of waste management as "on-site disposal".

The relevant environment agency[1] regulates radioactive waste management on nuclear and former nuclear sites. The relevant legislation (The Environmental Permitting Regulations (England and Wales) 2016) and the equivalent Scottish legislation the Environmental Authorisations (Scotland) Regulations 2018) both allow for on-site disposal ***if detailed studies demonstrate that it is safe to do so and that the environmental and social benefits of such disposal outweigh the benefits of excavating and removing this material to the appropriate disposal facilities elsewhere***. Once an environmental permit has been granted, the disposal will remain subject to regulation by the relevant environment agency until the land can be released for unrestricted use, which may be several decades later.

Planning permission is required for anything which would constitute a development[2] on a site, and disposal of waste on-site would likely fall into that category. At present, there is no clear planning guidance on this subject available for planning officers in England[3]. In England, each local waste planning authority is required to develop a "Waste and Minerals Plan", which sets out local policies on recycling, waste transport and waste disposal. Some of these plans include explicit policies on radioactive waste from nuclear sites but others (at present) do not. In the cases where policies on radioactive waste have been developed, these do not always address the question of on-site disposal.

Given the large number and scale of the decommissioning projects taking place in the 2020s and 2030s, we anticipate that there may be a significant increase in the number of planning applications for on-site disposals. This guidance is intended to assist planning officers in making their recommendations. Since planning is a devolved matter, this guidance applies only to England.

Waste management options

Radioactive waste management should take account of a range of possible site end states and opportunities to optimise site clean-up. As such, the site operator may consider disposing of waste

[1] The Environment Agency in England, the Scottish Environment Protection Agency in Scotland and Natural Resources Wales in Wales

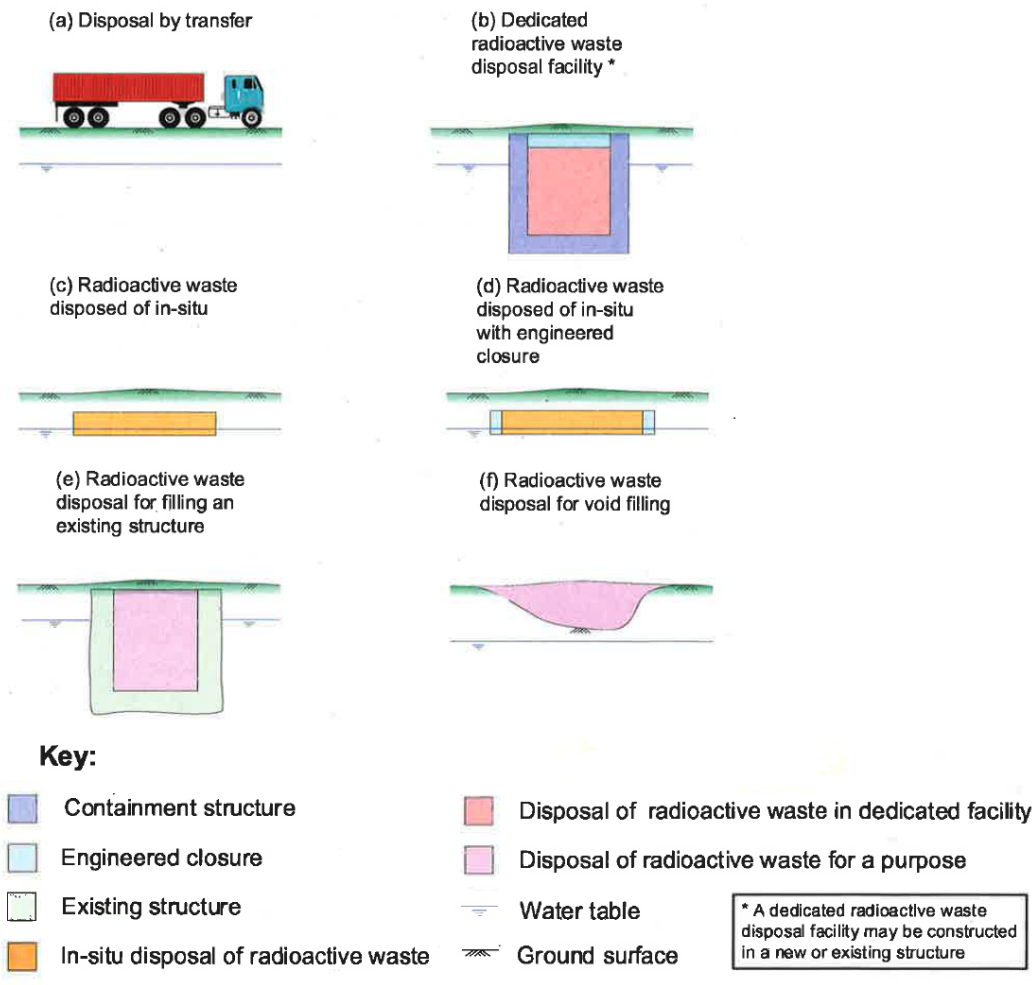
[2] A "development" is defined in Section 55 of The Town and Country Planning Act 1999 as "the carrying out of building, engineering, mining or other operations in, on, over or under land, or the making of any material change in the use of any buildings or other land."

[3] Planning is a devolved matter. The Scottish and Welsh Governments intend to develop equivalent guidance on the issue of on-site disposal.

on-site if there is a case to do so. For example, in some situations it might be necessary or appropriate to remove all low and very low level waste from a site which is being decommissioned. However, there may also be instances where it is the best overall solution to dispose of some waste on the site if, for example, the risk of excavating and transporting the waste would be greater.

There are several waste management options that can be considered by site operators when they are determining the sustainable approach to clean-up of a nuclear site. These are described in the Guidance on Requirements for Release from Radioactive Substances Regulation (GRR). There is, effectively, a hierarchy of radioactive waste disposal options, since more hazardous radioactive wastes require solutions providing greater levels of protection to people and the environment.

Some of the options for radioactive waste disposal are shown below.



On-site disposal can be split into two separate categories:

- **In-situ disposal** (i.e. leaving existing structures in place). This option might be considered in situations where the risk to workers or to the environment might be greater if the structure were to be removed.

- **Disposal for a purpose** (for example, using lightly contaminated rubble to fill voids or existing structures). This type of disposal could be an option where otherwise new material would need to be brought in to fill the structure or void.

Both these options would require the operator to apply for an environmental permit to be authorised before they can dispose of radioactive waste on-site, and the relevant Environment Agency would need to determine that it was safe before doing so. The Waste Management Plan produced by the operator must also demonstrate that they have taken measures to ensure that the process of disposing of waste on site will not cause any secondary waste to be created, or create any residual contamination.

Other types of disposal of waste on-site include the development of a facility with an engineered closure. The proposed guidance does not cover planning applications concerning this type of disposal.

Benefits of On-site Disposal

On-site disposals carried out correctly would still comply with international and domestic safety standards and legislation whilst offering an opportunity to optimise the decommissioning process through:

- Reduced waste generation
- Reduced pressure on limited waste disposal facilities (figures)
- Reduced risk of accidents to workers
- Reduced lorry traffic
- Reduced risk of traffic accidents
- Reduced pollution (traffic and greenhouse gases)
- Earlier re-use of sites
- Reduced costs (for nuclear liability, licence and remediation).

Potential Disadvantages

An on-site disposal may need to remain under environmental permit for years or decades. This could have implications for the use of relatively small parts of the former nuclear licensed site. For example, parts of the site where contaminated rubble has been used for infilling voids might not be suitable for development without further clean-up.

Roles

It is apparent from the description of the decision process and the permission application process that government, regulators, site owners and operators each have a role to play in decisions relating to the preferred option for the site. These roles are described below.

Government

National / Devolved Government

The Department for Business, Energy and Industrial Strategy (BEIS) is responsible for the development of policy regarding nuclear energy and nuclear installations across the UK. This

includes the policy, legislative and regulatory framework that relates to nuclear site decommissioning and clean-up.

The Department for Environment, Food and Rural Affairs (DEFRA) promotes sustainable development, whether in the UK or internationally. Their aim is to enhance the quality of life through promoting: a better environment; thriving rural economies and communities; diversity and abundance of wildlife resources; countryside for all to enjoy; and sustainable and diverse farming and food industries that work together to meet the needs of consumers.

Local Government (inc. - Land Use Planning)

The land-use planning system is separate to and independent of Radioactive Substances Regulation (RSR). Local planning authorities may be consulted on relevant RSR applications in their area and the relevant environment agency would be consulted by the planning authorities on relevant planning applications, but the granting of one is not dependent on the granting of the other. Land use planning is regulated under the Town and Country Planning Act 1990 in England and Wales, or the Town and Country Planning (Scotland) Act 1997 in Scotland.

Many parts of England have two-tier local authority areas where the county council is the Waste Planning Authority and will therefore be responsible for all waste planning applications. The district, borough or city council would deal with proposals not directly related to the waste management aspects of the scheme, including any alternative end land-use.

Nuclear Licensed Site Owners and Operators

The Nuclear Decommissioning Authority

The Energy Act 2004, designates to the Nuclear Decommissioning Authority (NDA) responsibilities for the decommissioning and clean-up of designated sites, installations and facilities and treatment, storage and disposal of hazardous material. The NDA's role is to develop and implement a strategy to deliver Site End States for these designated sites as soon as reasonably practicable with a progressive reduction of risk and hazard. Currently NDA has 17 designated sites, out of a total of 36 nuclear licensed sites in UK.

Non NDA Site owners

19 of the nuclear licensed sites are not owned by NDA or designated to NDA for decommissioning and clean-up. Examples are MoD sites, Horizon and EDF reactor sites, and other nuclear sites in the nuclear fuel cycle, waste management, pharmaceutical and research sectors. The role of these site owners is to develop a strategy for the decommissioning and clean-up of the site at the end of operations, and to determine the site end state.

Site Licence Companies

The Site Licence Company is the regulated entity and the statutory liability holder. It operates and manages the site in a manner that is compliant with the Licence conditions and the conditions of the environmental Permit(s). In the context of decommissioning and clean-up, the Site Licence Company manages the progress towards the delivery of the Site End state and is responsible for making the decision on the preferred waste management option. Site Licence Companies on NDA sites will

therefore develop waste management options that are consistent with the Site End State described in NDA's Strategy.

Regulators

ONR

The Office for Nuclear Regulation (ONR) regulates safety and security at licensed nuclear sites in the UK. These include the existing fleet of operating reactors, fuel cycle facilities, waste management and decommissioning sites and the defence nuclear sector. Their role is to provide efficient and effective regulation of the nuclear industry, holding it to account on behalf of the public. In line with the UK's goal setting approach to regulation, ONR sets out its broad regulatory requirements, and it is for licensees to determine and justify how best to achieve them. ONR has attached 36 conditions to each nuclear site licence within which the licensees are required to operate. These conditions include conditions on accumulation and disposal of radioactive waste, managing leaks of radioactive waste, and decommissioning.

Environment agencies

The disposal of radioactive waste on or from nuclear sites is regulated by the relevant environment agency[4]:

- The Environment Agency (in England)
- Natural Resources Wales (in Wales)
- Scottish Environment Protection Agency (in Scotland)

Processes

The first step in the process of deciding whether an on-site disposal is appropriate is to establish the next planned use of the site. For example, an on-site disposal might be acceptable if the next planned use is open access, but might not be acceptable if construction work is required. The site operator should ensure that their proposal is consistent with the Local Plan, which sets out the priorities for land-use within the local authority's remit. The site operator should engage with local planners, local elected representatives, local stakeholders and the Environment Agency. This is the pre-application consultation process.

Once there is consensus on the next planned use, the site operator should develop a waste management plan and site-wide environmental safety case for submission to the Environment Agency.

Depending on the nature of the contaminated material and the next planned use, on-site disposal may be appropriate. Any such disposal will require a permit from the Environment Agency and may also require a planning permit.

[4] Northern Ireland has no nuclear sites but the environmental regulator is the Northern Ireland Environment Agency (NIEA).

The Environment Agency will assess the application to determine whether the proposed on-site disposal is safe and, if so, whether it represents the best practicable option in terms of the overall environmental and social impact. The assessment of whether on-site disposal represents the best practicable option will take into account issues such as conventional risks to workers during excavation of material, traffic from transporting the material and costs. As described in the GRR[5], if an environmental permit is granted for an on-site disposal, conditions may be attached, for example, monitoring of radioactivity levels, or controls such as fences.

To date, the information we have suggests that:

- In -situ disposal (i.e. leaving existing structures in place) requires an environmental permit but may not require a planning permit.
- Engineered disposal facilities require both an environmental permit and a planning permit.
- Disposal for a purpose (for example, using lightly contaminated rubble to fill voids) requires both an environmental permit and a planning permit.

The application to the local planning authority will require an environmental impact assessment and must take into account a wide range of factors, including:

- the local waste and minerals plan;
- the geology of the site (for example, whether the site is prone to flooding);
- the stability of any engineered barriers that may be constructed around or over material left in-situ;
- issues such as traffic, noise, dust and disturbance to local residents.

The dimensions of the disposal should also be made clear; for example, an application to leave a long pipeline in-situ may be treated differently to an application to chop up the same pipeline and leave the material in a more compact disposal.

Timescales are long: NuLeaf has advised that *"there would need to be pre-application consultation as well as substantial technical documentation. This process could take around two years to complete. In terms of a planning application, the in-situ disposal of radioactive waste would require an Environmental Impact Assessment, so the statutory period would be 16 weeks for determination of the application but the Local Authority is not obligated (unless through a planning performance agreement – which is unlikely) to issue a decision in this time period. Applicants can appeal to the Planning Inspectorate for "non-determination" after the 16 weeks, so the onus is on the Local Planning Authority to make the decision. However, the appeal process adds further time and, given the nature of the proposal, would likely need to be undertaken through a public inquiry."*

Site operators are therefore strongly encouraged to engage early with local planners, local elected members and other local stakeholders.

[5] Management of radioactive waste from decommissioning of nuclear sites: Guidance on Requirements for Release from Radioactive Substances Regulation, SEPA, EA, NRW (https://www.sepa.org.uk/media/365893/2018-07-17-grr-publication-v1-0.pdf)

Two important issues are whether the volumes disposed of require the application to be considered as a nationally important infrastructure project and what to do if the waste is mixed radioactive and hazardous waste. These two issues are considered separately, below.

Would the disposals be considered "Nationally Important Infrastructure Projects"?

If the annual mass of waste disposed of exceeds 100,000 tonnes in any given year, the disposal could be considered a "Nationally Important Infrastructure Project". With the exception of Sellafield, the proposals are for less than around 30,200 m3 of LLW/VLLW per site (total, not yearly average). If we assume an industry standard density for waste of around 1.25 tonnes/m3, this means that these proposals are for less than 37,750 tonnes (total, not annual) per site and therefore would not qualify as Nationally Significant Infrastructure projects. At Sellafield, estimated volumes are higher – a total of between 1.2-1.6 million m3 for VLLW and a total of less than 18,200 m3 for LLW. However, these volumes refer to the total volume of waste over a 100 year period. We do not expect the tonnage of waste disposed of on-site to exceed 100,000 in any one year and therefore this disposal would not qualify as a Nationally Significant Infrastructure Project.

What is the situation for mixed hazardous and radioactive waste?

There might be a further complication that the waste, other than as being radioactive, might be hazardous or, more likely, as part of a mixture. This might be the case if asbestos is still present with the waste being disposed as it is hazardous waste if, as a whole, it contains 0.1% or more asbestos (e.g. 100 tonnes). We are not expecting applications for the disposal of mixed hazardous and radioactive waste and this guidance does not cover any such applications.

End.