Decision Document

Application from Sita (Lancashire) Limited under the Environmental Permitting (England and Wales) Regulations 2010

to dispose of radioactive waste at

Clifton Marsh Landfill Site,
Preston New Road,
Preston,
Lancashire,
PR4 0XE

Date: 14 August 2012

Executive Summary

In November 2009 we received an application from Sita (Lancashire) Limited for authorisation under the Radioactive Substances Act 1993 to dispose of solid, low level radioactive waste (LLW) at their landfill premises at Clifton Marsh, Preston New Road, Lancashire. The site already accepted LLW from a limited number of consignors holding permits that specifically allowed controlled burial at Clifton Marsh; the application was for Sita themselves to be permitted, in line with modern practices and Government policy. Sita also sought permission for on-site burial of a greater range of radionuclides than were included in the permits held by consignors.

We have reviewed this application carefully and consulted a range of organisations and individuals who have expressed an interest previously. During the period over which the application was reviewed the Environmental Permitting (England and Wales) Regulations 2010 came into force and so a final decision on the application has been made in relation to these regulations and under relevant transitional arrangements. This determination also follows a decision by the European Commission in accordance with Article 37 of the Euratom Treaty. Based upon our review and the consultation comments we received we have decided to issue a permit to Sita for the disposal of LLW at the Clifton Marsh Landfill Site. This permit contains a number of limits and conditions which must be complied with. The main limits and conditions are for:

- Limiting the total activity of each of a number of groups of radionuclides that may be disposed of in any one year;
- Limiting the specific activity (in becquerels per gram) of disposals;
- Managing the radioactive waste so that it remains safely contained right up to the point of burial in the landfill site;
- Assuring the quality of radioactive waste receipts, record keeping and reporting of data to us; and
- Carrying out monitoring, including specified environmental monitoring.

In coming to this decision, we concluded that:

- Overall, the application is sound and consistent with relevant policy, legislation and guidance;
- The environmental permit will ensure the protection of the public and the environment from the effects of the radioactive waste disposals;
- The permit will introduce stringent controls on disposal of radioactive waste;
- The permit conditions are proportionate and risk based;
- Our decision will not place a grossly disproportionate burden on Sita's resources in meeting the requirements of the permit, or require grossly disproportionate expenditure for sampling, monitoring and managerial control of disposals; and
- Sita's existing environmental permits will not be affected and will continue to provide proportionate regulation of non-radiological disposals to the site.

EPR 10 describes "receipt of radioactive waste" and "accumulation of radioactive waste" as "radioactive substances activities" in their own right. In order to avoid any doubt, we included these activities in the permit. Note that "accumulation" is limited to a maximum of two weeks – we included it primarily so that if any waste arrived and could not be buried immediately, Sita would not be obliged to require the driver to take it back on the road again.

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Legislation update and transitional arrangements

i. Sita's application for the disposal of radioactive waste was made under the Radioactive Substances Act 1993 (RSA93) in November 2009. The Environmental Permitting (England and Wales) Regulations 2010 (EPR 10) came into force on the 6th April 2010 and have now superseded the provisions of RSA93.

ii. Permissions under RSA93 were described as "Registrations" or "Authorisations". Under EPR 10, radioactive substances activity permissions are termed "Environmental Permits" or simply "Permits".

iii. Several other types of environmental permit are issued under EPR 10, notably (in the case of Clifton Marsh) those for "Installations" carrying on activities such as conventional waste disposal. Where necessary in this document, "landfill environmental permit" refers to a conventional waste disposal permit and "RSA permit" refers to a permit for a radioactive substances activity.

iv. Regulation 75 of EPR 10 sets out how "Transitional applications" are to be determined. Sita's application was deemed to be an application for a "radioactive substances activity" environmental permit, the relevant "activities" being receipt, accumulation and disposal of radioactive waste.

v. Under RSA93 we made reference to Best Practicable Means (BPM) and Best Practicable Environmental Option (BPEO). Under EPR 10 we now refer to Best Available Techniques (BAT) which is taken to be broadly equivalent to BPM and BPEO.

INTRODUCTION

1.1 The Environment Agency has responsibility under the Environmental Permitting (England and Wales) Regulations 2010 (EPR 10) for regulating "radioactive substances activities" in England and Wales. In particular, we regulate all disposals of radioactive waste, including discharges into the air, the sea, rivers, drains or groundwater, disposals to land, and by transfer to other sites.

1.2 We regulate the disposal of radioactive waste through an overall system of regulatory control that is underpinned by issuing permits, under EPR 10, to operators at each relevant site. These permits specify the limitations and conditions that we impose on the disposal of radioactive waste. We can include any limitations and conditions we think fit. It is an offence under EPR 10 not to comply with the limitations and conditions in a permit.

1.3 Our overall system of regulatory control includes:

- Deciding whether or not we should grant applications for new permits or changes to existing permits, and setting appropriate limits and conditions in any permits that we issue, which ensure that the public and the environment are well protected;

- Periodically reviewing permits and operators' environmental performance, and varying permits to make sure that the relevant limits and conditions are up to date and effective and continue to ensure that the public and the environment are well protected;
- Carrying out announced and unannounced inspections;
- Investigating incidents;
- Using our powers of enforcement, including prosecution, as necessary;
- Undertaking waste, effluent and environmental monitoring and assessments of public radiation exposure.

1.4 Our primary aim is to ensure that, if granted, any new or varied permit will properly protect the public and the environment.

1.5 In November 2009 we received an application from Sita (Lancashire) Limited for authorisation under RSA 93 to dispose of solid, low level radioactive waste (LLW) at their licensed landfill premises at Clifton Marsh, Preston New Road, Lancashire. We reviewed the application and requested further information from Sita. Once we were satisfied that the application was substantially complete, providing sufficient information for our technical review, we consulted upon the application and a draft EPR 10 environmental permit. This took place from June to July 2011.

1.6 During the early stages of our technical review, the Department of Energy and Climate Change (DECC) informed us that a submission to the European Commission in accordance with Article 37 of the Euratom Treaty would be required. A submission was prepared and submitted in September 2010 and, in March 2011, the European Commission provided a positive opinion (see Annex 1).

1.7 We have now concluded our technical review and given careful consideration to the consultation responses received and the opinions of the European Commission. We have held many discussions with Sita by telephone, at our offices and theirs, and at the Clifton Marsh site, and are content with their state of readiness to hold a new permit.

1.8 This Decision Document sets out our considerations and decisions with respect to the application. It provides an overview of the application, our determination process, consultation comments and our responses, and our final considerations in relation to this application. Our final decision is presented.

1.9 This document accompanies and should be read in conjunction with the permit (CD0235) presented in Annex 2. Further background information can be found in the June 2011 Introductory Document which accompanied the consultation material, as well as the application material submitted by Sita. This application material included an Environmental Safety Case (ESC) and Radiological Risk Assessment, along with additional information provided by Sita in response to our requests.

1.10 Information about how we regulate disposal of radioactive waste to landfills, and some 'frequently asked questions' on the subject can be found on our website at: http://www.environment-agency.gov.uk/business/sectors/100241.aspx

Site overview

1.11 The Clifton Marsh Landfill Site is an existing landfill site operated by Sita (Lancashire) Limited, located on the North side of the River Ribble, to the West of Preston. It accepts conventional waste mainly from Preston, Blackpool and Fylde areas, as well as radioactive waste. Most of the non-radioactive disposals is degradable household, industrial and commercial waste, inert waste, and contaminated soil. Phases 1 to 3 of the site are complete and current disposals are to Phase 4, which is itself divided into smaller cells. The application considers the potential radioactive inventory of the entire landfill, not just projected future disposals into Phase 4.

1.12 In the 1970s, a large area on the North of the river was earmarked for possible use as a landfill site. Initially, it was all referred to as "Clifton Marsh", but the Western-most section was subsequently referred to as "Grange Farm". Grange Farm landfill site was used for waste disposal up to 1986, when the present Clifton Marsh site was first licensed and came into operation.

1.13 LLW disposal at Grange Farm and Clifton Marsh commenced in 1974, through authorisations granted originally to British Nuclear Fuels Ltd. in respect of their sites at Capenhurst and Springfields. More recently, the authorisations became environmental permits, held by Urenco UK Ltd. and Sellafield Ltd. (at Capenhurst) and by Springfields Fuels Ltd. (at Salwick). Compliance with such permits required collaboration between the consignor and the landfill operator, and we decided several years ago that regulation would be improved if the landfill site operators themselves held permits. Sita's decision to apply for a permit took account of this change in our approach. Granting a permit to Sita would mean varying those consignors' permits; consignors would be authorised for transfer of their waste, but not its actual burial (which would fall within the scope of Sita's permit).

1.14 Non-radioactive waste legislation has also developed since the first use of Clifton Marsh. Phases 1 to 3 are capped and their aftercare falls within the scope of a permit (reference WML474 (EAWML54097)) that was previously called a Waste Management Licence. Disposals to Phase 4 are regulated by way of an environmental permit, reference number BK2348IU.

1.15 Phase 4 is designed as a containment landfill to meet Environment Agency guidance. The older phases do not have any engineered, low permeability liner to inhibit the passage of leachate to groundwater. However, leachate entry into the aquifer below phases 1 – 3 is partly hindered due to a "pseudo-liner" of low permeability sewage sludges deposited at the base of each phase prior to commencement of disposals.

1.16 Leachate arisings are pumped to two lagoons where methane is removed by air-stripping; this process is regulated under environmental permit XP3032MQ. The leachate is then piped off-site to a nearby sewage treatment works operated by United Utilities plc.

1.17 The site is bordered to the West by an access road to a sewage treatment works,

to the South by the banks of the River Ribble, to the East by Savick Brook, and to the North by farm land. This section of the River Ribble is classed as a National Nature Reserve, managed under the Wildlife and Countryside Act 1981, and has several other important conservation designations. These include Natura 2000 (a European designation, under the Conservation of Habitats and Species Regulations 2010), Ramsar (as a wetland of International Importance) and a Site of Special Scientific Interest (SSSI), containing sand / mud flats and an extensive salt marsh, which are particularly important both for supporting breeding salt marsh bird populations and as areas of international importance for wintering waterfowl. Newton Marsh is another nearby SSSI, to the North West of the site.

Scope of the application

1.18 Sita's application is for on-going co-disposal of LLW by burial alongside non-radioactive controlled waste.

1.19 In submitting their application, Sita assumed that the landfill site would remain open until the end of 2020, and this formed the basis of their calculations for how much radioactivity they might dispose of each year. The application addressed matters relevant to the permitting of radioactive substances activities; there was no need to include details relating to other regulatory regimes, such as planning or health and safety legislation. Sita would of course have to comply with all legislation applicable to landfill site operation, not just environmental permitting.

1.20 To determine how much radioactivity can be buried in a landfill site, the key parameters are the numbers of becquerels of each radionuclide and, to a lesser extent, their concentration per cubic metre of waste. Total volume or mass of radioactive waste disposals is less significant. Sita assumed in their application that they might be disposing of about 250,000 cubic metres of total waste per year, and that LLW might represent about 10% by volume of these disposals.

2. OUR PROCESS

2.1 Sita approached the Environment Agency in 2008 to discuss their intention to apply for a radioactive substances authorisation. The application would have two aims: to allow them to receive radioactive waste from a greater range of consignors, and to comply with recommended regulatory practice, whereby authorisations for controlled burial at landfill sites would be held by landfill operators. We met to advise them on the type of information we expected to see in an application and also to encourage them to engage at an early stage with local stakeholders. Sita subsequently arranged a well-attended presentation and public exhibition of their proposals, at Freckleton Village Hall, in July 2009. We also took part, to explain our regulatory processes and to take note of concerns that were brought to our attention.

2.2 In late 2009 and early 2010, we gave a briefing on Sita's proposals to Preston City Council and attended a further public exhibition arranged by Sita and Lea Parish Council. We also kept the Springfields Fuels Ltd.'s Site Stakeholder Group well-informed of the progress of Sita's proposals. This stakeholder group meets at least twice a year and has representatives from Fylde Borough Council, Lancashire

County Council and several other local bodies who have legitimate interests in activities at Clifton Marsh.

2.3 We received Sita's application under the RSA 93 in November 2009 and began an initial review. This review highlighted the need for some further information and clarification for our detailed review and subsequent consultation. We wrote to Sita on 17 December 2009 requesting further information, and received a response on 2 May 2010. The response partially addressed our questions, but certain information remained outstanding.

2.4 We held further discussions with Sita during the second half of 2010 and early 2011, seeking additional clarification of sections of the application and supporting documents. Sita provided updated reports and addenda, particularly a revised Environmental Safety Case and Radiological Risk Assessment. By June 2011 we considered that our assessment of Sita's application was sufficiently advanced to progress to stakeholder consultation. To assist the consultation, we prepared an explanatory document and a draft environmental permit. We also provided written briefs to key county and district council members and the local MP prior to consultation.

2.5 The consultation lasted from 2 June to 8 July 2011. As well as our statutory consultees, we consulted Local Authorities, local Parish Councils, the present consignors, the applicant and other groups who requested sight of the consultation material. The full list of consultees was:

- The Health and Safety Executive (Office for Nuclear Regulation)
- The Foods Standards Agency
- Lancashire County Council
- Fylde Borough Council
- South Ribble Borough Council
- Preston City Council
- West Lancashire District Council
- Freckleton Parish Council
- Lea Parish Council
- Newton with Clifton Parish Council
- Springfields Fuels Ltd.
- Sellafield Ltd. (Capenhurst site)
- Sita (Lancashire) Ltd.
- Urenco UK Ltd. (Capenhurst)
- NULEAF (Nuclear legacy advisory forum)
- Springfields Site Stakeholder Group
- Seven members of the public who previously expressed an interest

We also placed the consultation material on our web site.

2.6 We received responses from most of the organisations we consulted. We thank the organisations for these responses and, after careful consideration, have responded to the matters raised in Section 3 of this document. As part of preparing our responses we have informed relevant government organisations of any issues raised that were of relevance to them. This included the Nuclear Decommissioning Authority (NDA) and the Department of Energy and Climate Change (DECC).

2.7 In parallel we completed our technical review and other relevant considerations. This is detailed further in Section 4 of this document.

2.8 After completing the above steps we have decided to issue an environmental permit to Sita for the receipt, accumulation and disposal of LLW at Clifton Marsh landfill site. We have prepared an environmental permit to be issued alongside this Decision Document to all consultees, the applicant and also to be placed on the Public Register.

2.9 As noted above, we made DECC aware of this application and the consultation responses received. The Secretary of State has powers of direction under the Environmental Permitting Regulations 2010 concerning the application and our decision. In April 2012 we received confirmation from DECC that it would not be appropriate to refer the application for consideration by the Secretary of State, and we are therefore implementing our decisions by issuing the permit shown in Annex 2.

2.10 In this Decision Document, as in all our regulatory work, we aim to be:

Transparent by having rules and processes which are clear to those in business and local communities;

Accountable by explaining ourselves and our performance;

Consistent by applying the same approach where possible within and between sectors and over time;

Proportionate (or risk-based) by allocating resources according to the risks involved and the scale of outcomes, which can be achieved; and

Targeted (or outcome-focused) by having environmental outcomes central to our planning and in assessing our performance.

3 CONSULTATION RESPONSES AND OUR COMMENTS

3.1 The consultation responses received from local stakeholders and statutory consultees are summarised below (in italic text), along with our responses and the way in which we have taken these into account in the determination process. We thank consultees for their responses.

3.2 *Two respondents expressed general objection to our granting a permit.*

3.3 We acknowledge that not everyone will be happy for Sita to receive a Radioactive Substances Activity Permit; however, environmental permitting decisions depend primarily on environmental protection, and we consider in this case that the necessary standards are met.

National Strategy

3.4 *Lancashire County Council felt that the national LLW strategy was not delivering the numbers of LLW management facilities necessary to counter concerns over self-sufficiency and meeting the proximity principle. The application was driven by short term cost and convenience of an existing facility, wouldn't fulfil long-term strategy for LLW management, and threatened to delay or undermine better alternatives from coming forward.*

3.5 The adequacy or otherwise of national facilities for LLW management in England and Wales is not what our permitting decisions are based upon, and does not represent a valid reason for us to refuse a permit application for one such facility. Similarly, our consideration of the ability of a landfill operator to safely manage and dispose of radioactive waste does not in itself consider the potential sources of waste and application of the proximity principle. Instead, these issues are considered in our regulation of consigning operators, who are required to apply BAT, taking account of the proximity principle, in determining how to manage their wastes. However, we have made the Council's observations available to the Nuclear Decommissioning Authority (NDA), who are responsible for the National Nuclear Low Level Radioactive Waste Strategy. Disposal of LLW at Clifton Marsh helps reduce the quantities of waste going for disposal at the LLWR, which is an important element of the strategy, so granting the permit actually helps to fulfil that strategy.

Apparent disconnect between planning and permitting regimes

3.6 *Six consultees made comments in this area. A number of comments drew attention to the different end-dates in Sita's planning permission (now 31 December 2015) and draft permit (31 December 2020); one pointed out that even 2015 had not yet been agreed by the planning authority at the time of consultation. It was suggested that the permit end date should be 31 December 2015 to match the then-expected (and since confirmed) extension to planning consent. A 2020 date in the permit could be seen as proposing a role for Clifton Marsh that went beyond planning permission and was outside the area development plan.*

3.7 Environmental permits are not normally time-limited, even for facilities that are expected to have a finite operating life. Thus the Clifton Marsh non-radioactive "landfill" environmental permit contains no reference to ending disposals in 2015 or at any other specified time. Effectively, disposals could continue until the site is physically full. However, in the case of LLW, the total quantity of radioactivity is more important than the number of tonnes or cubic metres of the waste. Sita's radiological safety case supporting their application was based on a particular rate of radioactive waste disposal, continuing until the end of 2020. We therefore based the limits in the permit to fit within the envelope of the safety case, and included a condition prohibiting radioactive waste disposals after 2020.

3.8 The purpose of EPR 10 as applied to radioactive substances activities in this situation is to protect the public and the environment from any impacts of radioactive waste disposal. This is separate to any planning considerations, and the Environment Agency is the responsible regulator for this. Similarly, planning considerations, and relevant conditions, are separate matters for the local planning

authority to consider. It would not be appropriate for either regulatory organisation to set conditions that are relevant under another regime. It would therefore be wrong for the permit to make any reference to 31 December 2015. Equally, it is incorrect to suggest that the permit implies any role that is somehow "outside" the scope of planning permission; Sita will still have to comply with conditions in their planning consent, just as they have to comply with conditions in their environmental permits. Thus, in the absence of any extension to planning permission beyond 31 December 2015, disposals would need to cease at that time, irrespective of an extant environmental permit.

3.9 *One consultee suggested that limits applied through planning consents – specifically those relating to annual tonnage limits from inside and outside the North West – should be repeated in the permit. Another suggested that radioactive waste disposals should be limited largely to existing producers operating on existing authorisation.*

3.10 As indicated already, it is not for the Environment Agency to impose conditions which are properly the remit of the Planning Authority, nor vice versa. The primary role of environmental permit conditions is to protect the public and environment local to the site where the permit is held. Quantities originating from inside or outside "the North West", or from existing or new customers, do not affect radiological impact close to Clifton Marsh, hence while they may be appropriate in planning consents, they are not appropriate to include in environmental permits.

3.11 Government Policy, indicated within their March 2010 Environmental Permitting Guidance on Radioactive Substances Regulation, is for landfill sites accepting LLW for controlled burial to have their own permits. The continued use of "existing authorisations" – those held by Springfields Fuels Limited, Sellafield Limited (Capenhurst) and Urenco UK Limited – would go against that policy and our approach to regulation. We expect any operator wishing to dispose of wastes to any site to demonstrate that the route represents BAT, taking account of principles which include the proximity principle. The demonstration of BAT is the responsibility of the operator and not ourselves. We would not wish to prevent any other operator from choosing to make use of this route for disposal if it can be demonstrated to represent BAT.

3.12 *Some consultees referred to the changed circumstances for decommissioning of Springfields and queried whether account had been taken of the remaining life of Clifton Marsh being four years rather than nine.*

3.13 The Environment Agency understands that considerably more than four years' physical capacity remains at Clifton Marsh, and accepts that at the rate proposed, it would be safe to continue radioactive waste disposals until 2020, based on the radiological risk assessment provided with the application. Decommissioning work at the Springfields site is only one activity that contributes to radioactive waste disposal at Clifton Marsh, and was never expected to be complete by 2020, so the "changed circumstances" (meaning the long-term lease of Springfields Site to the Westinghouse Electric Company) make less difference than might be imagined.

3.14 *Another consultee felt that permitting Clifton Marsh beyond the period allowed by planning permission would be perverse, when there had been so much investment to move up the waste hierarchy away from landfill, which was the lowest category.*

3.15 We place great store by the waste hierarchy, for radioactive waste as well as non-radioactive waste, and encourage waste minimisation, reuse or recycle wherever possible, as do the national nuclear LLW strategy and LLW policy. However, it must be accepted that even with best efforts to avoid and minimise waste disposal, like most areas of waste production, some amount of disposal is necessary, and suitable facilities must be made available for this purpose. Where waste disposal is required, we expect demonstration by those generating the waste that all options to minimise, re-use or recycle have been considered. Land burial should only be used for the remaining waste for which, on balance. it represents the Best Available Technique to manage that waste. We expect all options to move up the waste hierarchy to be considered, for example decontamination of metallic waste to allow recycle, or the viability of re-use of lightly contaminated rubble for construction. However, due to the nature of the waste, the extent or type of contamination, or limited availability of alternative routes, there will inevitably be some cases where land burial is the only practicable option.

Failure to take account of alternative facility planned for Springfields

3.16 *Lancashire County Council said that their Minerals & Waste framework proposals included an on-site LLW disposal facility at Springfields by 2015. They didn't expect Clifton Marsh to be a long-standing or large volume receiver of LLW, and wanted to encourage focus on alternatives to landfill disposal and / or locations, such as Springfields. They had worked with the local waste producer to develop solutions for sustainable LLW management, that would limit the scope of land filling at Clifton Marsh to the very short term.*

3.17 *Several consultees referred to support, expressed by members of Springfields Fuels Ltd.'s Site Stakeholder Group during a NDA consultation, for a Springfields on-site facility. Some commented that they expected to see a landfill site at Springfields by 2015, rendering use of Clifton Marsh unnecessary. One suggested that BPEO (best practicable environmental option) and proximity principle favoured a SFL on-site facility rather than Clifton Marsh. Another described the application as ill-conceived when proposals were on-going for an on-site facility at Springfields to manage the bulk of LLW destined for Clifton Marsh. Springfields Fuels Ltd. confirmed they wanted to develop their own on-site landfill, though they had not as yet applied for either planning permission or environmental permits.*

3.18 We would caution against any assumption of an on-site facility being available at Springfields by 2015. Whilst we are not aware of any matters that make this impossible, a number of technical and regulatory obstacles have yet to be overcome, including (as a minimum) planning consent, environmental permitting and funding. There is no guarantee that we will grant the necessary environmental permits, nor that the favoured site is suitable for a landfill. Similarly, it should not be assumed that a disposal facility at Springfields would make the use of Clifton Marsh unnecessary. As a permitted landfill site, Clifton Marsh may continue to receive radioactive waste disposals from permitted operators other than

Springfields. If disposal to the Clifton Marsh site continues to be or is BAT, then the site will continue to serve a purpose.

3.19 In terms of environmental permitting, we do not consider sites at Clifton Marsh and, potentially, Springfields as alternative options to one another. We grant or refuse permits primarily on the basis of environmental protection and treat each application on its merits. Pursuit of landfill development options elsewhere therefore cannot influence our decision process for Clifton Marsh.

Wider socio-economic factors

3.20 *Lancashire County Council suggested that Sita's considerations of BAT (best available techniques) didn't appear to include wider social, economic or environmental factors (including transport) outside the immediate vicinity of the landfill site. The Council was not convinced these could be adequately addressed in the authorisation process for waste consignors.*

3.21 We are content that Sita's application addressed radiological and other relevant impacts close to Clifton Marsh. Many socio-economic factors fall under planning legislation; those relevant to environmental permitting and with impacts further afield, such as transport, are more for potential waste consignors to address in their optioneering and BAT assessments. Potentially, factors such as proximity can affect a consignor's choice of disposal site, but because transport is only one factor, it does not automatically follow that the best practicable environmental option is for consignors to send waste to the nearest available site.

Clifton Marsh should be reserved for local disposers only rather than the highest bidders

3.22 *Two respondents said there was no local support for Clifton Marsh taking low level waste from any more consigning sites than at present. Springfields and Capenhurst sites should have priority, over Sita's financial gain. Allowing other sites to consign to Clifton Marsh might mean Springfields having to send their waste further afield. Other consultees suggested that any demands for disposal needs outside Lancashire should be met locally to meet proximity principle and avoid long-distance waste transportation. Financial changes might not be controllable if Sita could set their own charges. Increasing volumes of low level waste at Clifton Marsh could shorten the landfill's operating life.*

3.23 As stated earlier, it is not an option for Springfields and Capenhurst disposals to continue under arrangements which started in the 1970s; Sita must themselves be permitted for carrying out the disposal activity at Clifton Marsh. Equally, it is not for us to intervene in commercial aspects of the arrangements between Sita and their clients.

3.24 Sita have indicated that they do not foresee Clifton Marsh running out of landfill capacity in the near future. We therefore note the comments speculating about what might happen to patterns of waste disposal in the future, but do not share those concerns. Similarly we have commented already (see above) on the need for operators to consider and demonstrate BAT in selecting and implementing

appropriate waste management arrangements, irrespective of any regional or other boundaries that may exist.

Proximity principle

3.25 *One consultee suggested that bringing waste from other parts of the country was contrary to Government requirements to "dump" nuclear waste at the site nearest to where it was created. Another said that the application did not reflect objectives for self-sufficiency and proximity.*

3.26 We expect waste producers to identify and secure robust arrangements for the management of their wastes, and to demonstrate that these represent BAT, taking account of the proximity principle amongst other factors. It may not be BAT for operators to dispose of their waste near to where it is created. Our prime concern is the proper protection of members of the public and the environment. We would not accept the proximity principle as being a reasonable argument for accepting any reduction in the standards of environmental protection that we expect.

3.27 The proximity principle becomes more influential where equivalent levels of environmental protection can be provided by disposal sites at different distances from the point of waste production. Such consideration would still, however, need to be balanced against other factors such as the cost and transport implications. This, inevitably, means that sometimes the preferred option might not be the nearest to the site of origin of the waste.

Transport

3.28 *Fylde Borough Council said that Government policy encouraged use of local waste management facilities; the proposal would allow Sita to canvas potential customers from a much wider area, increasing transportation distances. If Springfields built and used their own on-site facility and Clifton Marsh was still available, volumes of waste transported through the area would increase.*

3.29 The Office for Nuclear Regulation's Radioactive Materials Transport programme team (RMT) is responsible for the regulation of the transport of radioactive materials and waste and for ensuring that a robust regime exists for the safe transport of such substances. The issue of additional nuisance and congestion relating to transport is a relevant consideration in the environmental impact assessments undertaken in support of applications for planning consent. We expect consigning operators to take account of the environmental impact of transport in their consideration and demonstration of BAT. In the UK as a whole, transported volumes of radioactive waste are a small fraction of the total volumes of all waste movements and the environmental impact of transport activities is low compared to the potential environmental impact of failing to secure robust waste management arrangements.

Adequacy of controls at consigning sites

3.30 *One consultee felt that SITA must ensure BPEO had been implemented, regarding waste hierarchy principles, prior to bringing waste on site. Another respondent*

expressed general concern that LLW might be brought from the LLWR near Drigg, or that higher level waste might be "dumped" at Clifton Marsh.

3.31 We agree that waste consignors must determine BAT (which incorporates BPEO and takes account of the waste hierarchy) before waste arrives at a disposal site. As the landfill operator, Sita has to have a written management system for securing compliance with permit conditions, one of which requires that they only accept radioactive waste that meets acceptance criteria and can be disposed of in accordance with the permit. We therefore expect Sita to have auditing and quality assurance arrangements in place, to provide assurance that consignors are capable of sending waste to Clifton Marsh that is consistent with their permit and meets Sita's requirements also. Such auditing and quality assurance should limit the possibility of transferring consignments of waste that might not comply with the permit or SITA's acceptance criteria.

3.32 It is important to stress that burying a non-compliant consignment of waste at Clifton Marsh would not in itself make the site unsafe or cause it to fall outside the environmental safety case. The conservatism within the site limits and supporting risk assessments is sufficient to allay concerns from any such minor unapproved disposals, and the permit limits are designed to restrict disposals to those that have been demonstrated to be safe. We expect the operator and consignors to comply with their permits, but if there should nevertheless be a breach of permit conditions, we would investigate and take appropriate enforcement action, possibly including prosecution.

Radiological risk assessment and environmental safety case

3.33 *One consultee commented that coastal landfill storage facilities could affect the shoreline environment if waste management practices were poor; however, they were satisfied that an appropriate radioactive waste assessment appeared to have been carried out. Sita wished to stress that taking no account of foundations or concrete at the base of a house hypothetically built on the landfill was conservative. The Food Standards Agency said they were satisfied with measures to avert and minimise adventitious release of off-gases, run-off water and leachate; also that radiological impact was likely to be minimal even in the event of system failure. Other consultees noted that Springfields Fuels Ltd. would be sending much less waste to Clifton Marsh than that implied by the application. Also that it was misleading to refer to expected arisings for decommissioning the whole site; and that the application quoted different figures (2% and 3.3%) for the proportion of disposed waste being radioactive waste.*

3.34 We agree that good waste management practice is important at landfill sites (coastal or otherwise), and the need for robust site instructions and management arrangements is an important condition in every permit. Sita's and the Food Standards Agency's points are noted, as are the comments about the likely quantities of decommissioning waste and proportion of total waste likely to be radioactive waste. However, since the safety case depends principally upon the quantities of radioactivity in the landfill (in becquerels), we do not feel they make a material difference to the determination process.

The permitting process

3.35 *The Office for Nuclear Regulation expressed general support for granting a permit to Clifton Marsh and thereby helping to conserve limited disposal space at the Low Level Waste Repository near Drigg. Lancashire County Council made several comments about the Environment Agency's authorisation process, suggesting that it didn't properly consider sustainable waste management practices; threatened to undermine national strategy delivery; didn't take account of (and did not carry) public acceptability; and didn't instil confidence (because of use of different dates from planning permission). This and similar applications were being determined in an ad-hoc manner, with no rigorous assessment of better alternatives, including considering moving more waste up the waste hierarchy, or on-site disposal. They also commented that "Materials acceptance criteria" and operating procedures were "outstanding" and that it was inappropriate to determine the application in their absence. Another consultee said there was no need to amend the current Authorisations, as disposal requirements of low level waste from Springfields and Capenhurst could be met within existing arrangements. They also said that any revisions must be in line with NDA's UK Strategy for solid low level waste from nuclear industry. Another consultee referred to our role and ability to enforce permit conditions at a time of cuts, and sought assurance that the Environment Agency would remain the primary regulator.*

3.36 Bearing in mind that the permit determination is for a site receiving LLW for burial, we do not accept the implied criticisms regarding sustainable waste management practices, national strategy and waste hierarchy. We primarily seek sustainable waste management practices through regulation of consigning sites – requiring them to apply BAT and to be consistent with National LLW policy and strategy. However much optimisation, re-use and minimisation takes place at the consigning sites, there is always likely to be a solid, low level radioactive waste stream, as this is usually preferable to alternative liquid or gaseous radioactive waste streams. Government policies and regulatory practices have long-recognised the role of land disposal of slightly-radioactive solid wastes, provided disposals are supported by robust radiological assessments, as is the case for Clifton Marsh. Safety of the public and the wider environment is our number one priority, and we are satisfied that the radiological risks presented by activities at Clifton Marsh are well within levels that are widely considered to be acceptable. Even after more than thirty years of radioactive waste disposal at Clifton Marsh, the site contribution to radiation levels in the locality is negligible.

3.37 We consider that the comments regarding dates featuring in the planning permission, on-site disposal and retention of the existing Springfields and Capenhurst authorisations have been dealt with fully already, earlier in this section.

3.38 Whilst it is true that Sita had not finalised their Materials Acceptance Criteria and Operating Procedures by the time of consultation, they had discussed outlines and drafts with us. We would not grant a permit unless we were satisfied that they would be preparing these documents, and once a permit is in force, receiving radioactive waste without those documents in place and agreed with the Environment Agency would itself be a breach of that permit. But we understand Sita's preference to not issue the documents formally until a permit is about to come into force, since they would have no legal basis until the permit took effect.

3.39 We note that the NDA, in their August 2010 UK Strategy for the Management of Solid Low Level Radioactive Waste from the Nuclear Industry, stress that disposal capacity is a precious resource and must be used sparingly and as a last resort. This applies particularly to making best use of the LLWR near Drigg. We recognise that having available alternative options for the disposal of radioactive waste that does not need the level of containment and control provided by the LLWR helps considerably to reduce pressure on the LLWR's remaining capacity

3.40 We appreciate the consultee's concern regarding the on-going ability of the Environment Agency to be an effective regulator. At present, we do not foresee any difficulty in continuing to deliver our duties regulating facilities carrying on radioactive substances activities.

Draft permit

3.41 *Sita made an editorial comment on part of the introductory note in the draft permit. In the main body of the draft permit, they also commented on intentions regarding an improvement condition, conditions 2.6 and 3.4, and the site plan. Another consultee supported the principle of activity concentration limits for disposal. A further consultee queried whether the draft permit was apparently doubling the activity disposal rates covered by the existing permits.*

3.42 We have discussed Sita's comments with them and made minor changes where we felt appropriate, but these do not materially affect the application of the relevant conditions.

3.43 Limits in the Springfields and Capenhurst permits were based around the consignors' needs at the time the limits were set, but Sita have sought higher limits based on making fuller use of the remaining capacity of the landfill site and accepting a potentially wider range of LLW. This is perfectly reasonable, provided that it stays within the envelope of a sound environmental safety case, and we believe that this is so for the proposed new limits for Clifton Marsh.

3.44 The application assumed disposals lasting up to the end of 2020 and limits in the permit reflect the application; if the site closure date were to change, lower or higher annual limits might be appropriate. Similarly, if LLW disposals (in activity terms) happen to have been well below permitted limits for several years, there would effectively be surplus radiological capacity. This could be utilised either by increasing annual disposals for the remainder of the life of the permit or extending the life of the permit. Either of these would require an application to vary the permit conditions, regardless of whatever variation of planning consent might be required.

Radiological impact and environmental monitoring

3.45 *One consultee suggested that although the effects of Clifton Marsh might be acceptable, the combination with lots of other sources of radiation might be a real threat. Another consultee asked whether Sita would take on some of the monitoring currently done by Springfields Fuels Ltd., as he felt concerned by the*

potential for leachate leakage into the Ribble Estuary and wondered if it might even be happening already.

3.46 Radiation dose from different sources, including medical, other man-made radiation and natural sources, are essentially additive, and there are a number of different "constraints" and "dose limits" to help ensure that members of the public are not exposed to unsafe levels of ionising radiation. In the UK, the average total dose from all sources is about 2.7 milliSieverts each year. We consider it highly unlikely that any member of the public receives a measurable additional contribution to total annual radiation dose resulting from radioactive waste disposals at Clifton Marsh.

3.47 It is correct that Springfields Fuels Ltd. are currently responsible for monitoring radioactivity in the environment, not just near their own site, but also in the River Ribble, to where they are permitted to discharge their slightly radioactive trade effluent. Being the largest consignor to Clifton Marsh, they also carry out a programme of groundwater borehole monitoring at the landfill site, and it is this which will change upon issue of a permit to Sita. Sita will assume responsibility for monitoring leachate, groundwater and landfill gas for radioactivity, under what will be a statutory programme, and the results will be provided to us as regulator and made available publicly.

3.48 There is no evidence of any significant leakage of radioactivity to the environment to date from Clifton Marsh, from either our own, Sita's or Springfields Fuels Ltd.'s environmental monitoring programmes.

3.49 The radioactive waste buried at Clifton Marsh since the 1970s has all been solid waste, and the radioactive elements within the waste have been almost entirely uranium, thorium and their daughter products. Most of these are heavy metals, in chemical forms that have low solubility in water and are not volatile. One daughter product – radon – is a gas, capable of migrating through the landfill site, but the amounts produced are small by comparison with natural radon levels in some parts of the UK, and not expected to constitute a hazard. Being an inert gas, radon normally disperses harmlessly into the atmosphere if released, and its radionuclides have short half-lives of a few days or less.

3.50 Radon apart, the only realistic mechanism for radioactivity to escape from the landfill is by the passage of water. Landfill sites are designed with barriers to keep water out for the most part and for any rainwater that does get in to be collected and channelled to a "leachate" collection system. This would be a potential route to the River Ribble, since leachate is treated at a nearby sewage treatment works before discharge to the estuary. However, the Clifton Marsh leachate has been sampled and found to have levels of radioactivity well below any that would constitute a hazard.

3.51 Should any water by-pass the leachate collection system, it might enter local groundwater. Clifton Marsh is encircled by several dozen groundwater monitoring boreholes, which have been sampled frequently over many years. Interpreting the results of samples needs some caution, as uranium and some other radionuclides measured (such as thorium) occur widely in nature as well as being present in solid radioactive waste buried at Clifton Marsh. Not surprisingly, the data show a degree of spread, though with no clear pattern, and none are at levels which would cause

us concern. The great majority of results have been very low, supporting the conclusion that there is no significant leakage of radioactivity into groundwater at Clifton Marsh.

3.52 For several years now, radioactive waste disposals have been into a part of Clifton Marsh constructed to the most modern containment standards. Lined cells, which will be covered later by impervious caps, reduce still further the potential for water ingress and egress and for any water to come into contact with radioactivity within the disposal cells.

3.53 Continuing disposal of LLW to Clifton Marsh Landfill will help to reduce the volume of waste going for disposal at the Low Level Waste Repository (LLWR) near Drigg in Cumbria. We support the intention to reduce the overall volume of waste going to the LLWR, to preserve its limited capacity for wastes which warrant the higher levels of engineered containment it provides.

4 OUR CONSIDERATIONS

4.1 This section summarises what we have considered during our determination process.

4.2 Waste disposal should be the option of last resort and we expect to see the waste management hierarchy applied as far as possible to minimise waste arisings and subsequent disposal. For LLW arisings which are unavoidable and which cannot otherwise be re-used or recycled, continuing disposal to Clifton Marsh (or any other) landfill site will help reduce the volumes going to the LLWR near Drigg in Cumbria. In general we support the intention to reduce the overall volume of waste going to the LLWR, to preserve its limited capacity for wastes which warrant higher levels of engineered containment. This intention aligns with the 2007 UK Government and Devolved Administrations Policy for the Long Term Management of Solid Low Level Radioactive Wastes in the United Kingdom, published on 26 March 2007.

Legal and policy considerations

4.3 As part of our determination we have considered the requirements of all relevant UK policy and legislation, including:

- The Environment Act 1995;
- Government “Policy for the Long Term Management of Solid Low Level Radioactive Waste in the United Kingdom”, published in March 2007;
- UK Strategy for the management of solid low level radioactive waste from the nuclear industry;
- Statutory Guidance to the Environment Agency concerning the regulation of radioactive discharges into the environment, issued in 2009;
- OSPAR and UK Strategy for Radioactive Discharges;
- The Environmental Permitting Regulations 2010;
- The Environmental Permitting (England and Wales) (Amendment) Regulations 2011;
- The Groundwater Regulations 2009;

- The Justification of Practices Involving Ionising Radiation Regulations 2004;
- The Basic Safety Standards Directive (BSSD) 2000 in relation to both optimisation and limitation of doses to members of the public;
- The Conservation of Habitats and Species Regulations 2010;
- The National Parks and Access to the Countryside Act 1949;
- The Wildlife and Countryside Act 1981, sections 28G and 28I;
- Section 85 of the Countryside and Rights of Way Act 2000;
- The Human Rights Act 1998.

4.4 We have also referred to relevant guidance, including:

- Environment Agency Guidance Note: Disposing of radioactive waste to landfill[1]; and
- The UK Environment Agencies Near-surface Disposal Facilities on Land for Solid Radioactive Wastes: Guidance on Requirements for Authorisation, February 2009[2] (referred to as the NS-GRA), which we have applied in a manner proportionate to the hazard presented by the relevant waste disposals.

4.5 We believe that the application and our decision are consistent with policy, legal considerations and guidance. Further details are provided below.

The Environment Act 1995 (EA 95)

4.6 The Environment Agency was brought into being through the provisions of EA 95, and it is through EA 95 that we are given powers to regulate radioactive substances, including powers to conduct inspections and take enforcement action. Certain key duties falling to the Environment Agency are identified below together with other relevant information.

Sustainable development

4.7 Section 4 of EA 95 sets out the principal aim of the Environment Agency: "(subject to and in accordance with the provisions of this Act or any other enactment and taking into account any likely costs) in discharging its functions so to protect or enhance the environment, taken as a whole, as to make the contribution towards the attaining the objective of achieving sustainable development" as described in ministerial guidance. A widely quoted definition of sustainable development is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs".

4.8 In relation to England, the most recent Ministerial Guidance was issued to the Environment Agency in December 2002 (the Sustainable Development Guidance)[3]. The Guidance links to the UK Sustainable Development Strategy[4] although this strategy was subsequently updated (see below).

[1] Available at: http://www.environment-agency.gov.uk/business/sectors/100241.aspx
[2] Available at: http://publications.environment-agency.gov.uk/pdf/GEHO0209BPJL-e-e.pdf
[3] The Environment Agency's Objectives and Contributions to Sustainable Development: Statutory Guidance, December 2002.
[4] A Better Quality of Life: A strategy for sustainable development in the UK (May 1999), Cm 4345

4.9 The Sustainable Development Guidance states that our main contribution to sustainable development will be to deliver our various objectives in a way that takes account (subject to and in accordance with EA 95 and any other enactment) of economic and social considerations. In respect of radioactive substances regulation, the Sustainable Development Guidance refers to the objective of regulating solid radioactive waste disposal in accordance with statutory duties, statutory guidance and Government policy.

4.10 The UK Sustainable Development Strategy was updated in 2005 with the publication by the Government of The UK Government's Sustainable Development Strategy (March 2005), Cm 6467. This states that: "Our [UK] Strategy for sustainable development aims to enable all people throughout the world to satisfy their basic needs and enjoy a better quality of life without compromising the quality of life of future generations" and introduces five guiding principles. In summary, these are:

- living within environmental limits;
- ensuring a strong, healthy and just society;
- achieving a sustainable economy;
- using sound science responsibly; and
- promoting good governance.

4.11 We have considered the principal aim of the Environment Agency, set out in section 4 of EA 95, and the guidance issued by the Government in December 2002. We consider that the overall approach described in this document and the application of the BAT requirements contribute towards achieving sustainable development.

Statutory purpose of the Environment Agency's pollution control powers

4.12 Section 5 of EA 95 sets out the statutory purpose for which the Environment Agency's pollution control powers, including our powers under EPR 10, must be exercised, namely: "preventing or minimising, or remedying or mitigating the effects of, pollution of the environment". We consider that we have properly exercised our pollution control powers contained in section 5 of EA 95, for the purpose of preventing or minimising pollution of the environment, through the limits and conditions in the permit and through our consideration of BAT.

Economic and social well-being of local communities in rural areas

4.13 Under section 7(1)(c)(iii) of EA 95, the Environment Agency must have regard to the effect our proposals may have on the economic and social well-being of local communities in rural areas. Our assessment of the impact of discharges shows that the impacts are low. We have not identified any effects that would require us to include additional limits or conditions in the permit.

Duty to take into account likely costs and benefits

4.14 Section 39 of EA 95 places on the Environment Agency a general duty to take into account likely costs and benefits in considering whether and how to exercise our

powers (unless and to the extent that it is unreasonable for it to do so). Section 56 specifies that costs include costs to any person and costs to the environment. We have taken into account the likely costs and benefits of exercising our powers in accordance with section 39 of EA 95 and the Sustainable Development Guidance and are satisfied that the limits and conditions in the permit are appropriate.

Government Policy

Radioactive Waste Management – low-level, solid radioactive waste

4.15 We have considered the Government "Policy for the Long Term Management of Solid Low Level Radioactive Waste in the United Kingdom", published in March 2007. This policy amended or replaced relevant parts of the 'Review of Radioactive Waste Policy: Final Conclusions (Cm2919) White Paper published in July 1995. The Government stated that it saw no reason to preclude controlled burial of radioactive waste from nuclear sites from the list of options to be considered in any options assessment, provided the necessary safety assessments could be carried out to the satisfaction of the environmental regulators. Sita's application is consistent with current Government Policy.

UK Strategy for the management of solid low level radioactive waste from the nuclear industry

4.16 We have considered the "UK Strategy for the Management of Solid Low Level Radioactive Waste from the Nuclear Industry". One aim of the strategy is to make best use of the LLWR in Cumbria by ensuring that only those wastes requiring enhanced safety, security and environmental protection through engineered multi-barrier containment are consigned to that site for disposal. The strategy recognises the contribution that alternative sites, including landfills, will provide. It does not set out to prescribe which disposal options or sites will be preferred, but recognises the role that the supply chain may play. The application for Clifton Marsh is consistent with the approach in this strategy.

4.17 The strategy states that "disposal of LLW to landfill by means of controlled burial may be considered provided the necessary safety assessments can be carried out to the satisfaction of the environmental regulators". We have been provided with a safety assessment and have considered this in some detail. We are satisfied with the safety assessment.

Radioactive waste management - BAT

4.18 In 2009, the Government issued Statutory Guidance to the Environment Agency concerning the regulation of radioactive discharges to the environment (the Statutory Guidance). Its main focus was the change from Best Practicable Means (BPM) and Best Practicable Environmental Option (BPEO) to Best Available Techniques (BAT), in order to ensure consistency with other environmental protection terminology used in England, Wales and other countries.

Biodiversity, Heritage, Landscape and Nature Conservation

4.19 We have considered the conservation objectives set out in sections 6 and 7 of the Environment Act 1995 and our duties under section 85 of the Countryside and

Rights of Way Act 2000. Our view is that the limits and conditions of the new permit are sufficient to meet these objectives and our duties and that no other requirements are necessary.

4.20 We have considered our duties under the National Parks and Access to the Countryside Act 1949 and believe that the Clifton Marsh Landfill site is not likely to affect any National Parks adversely.

4.21 We have considered our duties under sections 28G & 28I of the Wildlife and Countryside Act 1981. These duties relate to Sites of Special Scientific Interest (SSSIs), including the Ribble Estuary SSSI which lies adjacent to the Clifton Marsh site. We consider that the limits and conditions of the new permit are enough to meet our duties and that no changes are likely to damage any of the flora, fauna or geological or physiographical features, by reason of which a Site of Special Scientific Interest is of special interest.

4.22 Under the Conservation of Habitats and Species Regulations 2010 (the Habitats Regulations) we must be satisfied that the integrity of designated "European sites" will not be affected adversely by the permits that we issue. We have considered the potential impact of radioactive waste disposals at Clifton Marsh landfill site on plant and animal life in the Ribble and Alt Estuary Natura 2000 and Ramsar site[5], also the associated Nature Reserve and Local Wildlife site. We are satisfied that the integrity of these sites will not be affected adversely by the proposed activities or our decision.

Groundwater Regulations 2009

4.23 The Groundwater Regulations now apply to radioactive substances; as a result, we needed to confirm that their requirements were met in relation to radioactive waste disposal. We therefore reviewed the relevant information on prior investigations undertaken at the site, such as hydrogeology, potential impacts on groundwaters and groundwater pathways (operational and post-closure phase), optimisation of groundwater releases and monitoring provisions. We are satisfied that the proposals are consistent with the Groundwater Regulations 2009 and that appropriate ongoing monitoring and review is in place.

Best Available Techniques (BAT)

4.24 Best Available Techniques (BAT) is a concept at the heart of much environmental legislation throughout Europe. We define it in the permit as "the latest stage of development (state of the art) of processes, of facilities or of methods of operation which indicate the practical suitability of a particular measure for limiting discharges, emissions and waste." Its meaning is equivalent to a combination of two previously-used concepts, BPEO (best practicable environmental option) and BPM (best practicable means).

4.25 We require sites consigning radioactive waste to use BAT to minimise the creation of radioactive wastes requiring disposal, including application of the waste hierarchy and consideration of available disposal routes. Before waste can be sent for off-site disposal, operators have to evaluate alternative options, including

[5] A Ramsar site is a wetland of international importance

recovery and treatment, and it is implicit in BAT that they should select the radioactive waste management option that provides the most benefit or least damage to the environment as a whole, in the long term as well as in the short term, taking into account operational doses and risks, and social and economic factors. Transport costs and the type of receiving facility would be two such factors, though we would not expect significant distinction between different facilities of the same type (such as different permitted incinerator sites, or different landfill sites permitted to accept the same type of waste).

4.26 When permitted landfill sites receive waste for disposal, we again require use of BAT to help minimise impacts on the environment. In particular, operators have to dispose of radioactive waste in such a way as to minimise the radiological effects on the environment and members of the public. They also have to use BAT when carrying out sampling and monitoring, and review their techniques regularly to ensure they remain best available. Use of BAT helps to ensure that any radiation risks to the public and the environment will be as low as reasonably achievable (usually abbreviated to ALARA). We have considered the level of management options and engineering controls submitted by Sita and consider them to represent BAT.

Potential releases to the environment

4.27 The application is for the co-disposal of solid low level radioactive waste with other controlled waste, by burial in a landfill site. Some of the buried non-radioactive wastes degrade with time, generating landfill gas. In addition, although the present phase of Clifton Marsh is designed for total containment, any water that might infiltrate the landfill cap and other barriers would mix with the waste. As a result, landfill sites contribute both gaseous and aqueous discharges to the environment, through landfill gas (which is usually collected and burned as a fuel) and water percolating through the waste (collected as leachate). Small amounts of volatile or soluble radioactive elements may in principle migrate into these gaseous and aqueous waste streams.

4.28 We consider that placing waste into the landfill site constitutes its disposal, and do not separately authorise any subsequent discharges to air, water and land. However, we require their potential impact to be assessed and justified as acceptable within the constraints of guidance we provide. We believe Sita have provided appropriately conservative modelling and justification of potential discharges, which are likely to be very small, if they can even be measured. We will require Sita to carry out a range of environmental monitoring periodically, including local surface waters, groundwater, leachate discharges and landfill gas. This monitoring will provide re-assurance that the landfill site is behaving as designed, and provide early warning of any unexpected behaviour.

Radiological Risk Assessment and Environmental Safety Case

Requirements

4.29 For applications to dispose of LLW to a landfill site, we require a site specific radiological impact assessment. We allow this to refer to published generic

research and development such as material published by SNIFFER[6] and the HPA-RPD[7]. The assessment must be sufficient to demonstrate that dose impacts will be acceptable, although a simple approach suffices in some cases. We also require consideration of the principles outlined within the NS-GRA and a statement that the requirements within the NS-GRA will be met.

4.30 The NS-GRA indicates that the approach to assessing safety should be proportionate to the hazard presented by the waste. Lower concentrations of radionuclides in waste would normally result in lower radiation doses, allowing the impacts to be assessed using a more simplistic, but cautious approach. If such a simplistic but cautious approach is adopted, more stringent radiation dose criteria are set for the operational and post closure periods. These are 0.02 mSv yr^{-1} for scenarios that are expected to occur and 1 mSv yr^{-1} for scenarios that are not certain to occur.

4.31 When we specifically permit liquid or gaseous discharges to the environment, we are also required by Government to assess doses to the public from the expected discharges and compare the doses with appropriate criteria. The current criteria are: the source constraint (0.3 mSv yr^{-1}) and the public dose limit (1 mSv yr^{-1}). To put these dose criteria in context, the average annual total dose to members of the public in the UK is about 2.7 mSv, most of which is from natural sources.

4.32 A radiological assessment supporting a landfill application for radioactive waste disposal should:

- Address all the key exposure situations likely to arise from the disposal (some are specified, for example gaseous impacts, effects of leachate and post-closure intrusion into the wastes);
- Consider both the operational and post closure phases of the landfill;
- Present a suitable description of the site;
- Present a suitable description of the wastes, timeframes over which disposals are made and proposed disposal methods;
- Present information on the expected source term (radionuclides and their quantities);
- Make use of the best available science on health and the environmental effects of radiation, and realistic assumptions of the behaviour and dietary patterns of representative members of the exposed public. This is consistent with applying our Radioactive Substances Regulation – Environmental Principles[8] in a proportionate manner;
- Describe and justify the radiological assessment methodology adopted;
- Be presented clearly and transparently in a manner that can be readily reviewed.

[6] Assessing the capability of controlled landfills to accept the disposal of solid low-level radioactive waste. SNIFFER. UKRSR03. 2006.
[7] Radiological assessment of disposal of large quantities of very low-level waste in landfill sites. QQ Chen, K Rowe, SF Mobbs and KA Jones. HPA-RPD-020. March 2007.

[8] Available at: http://publications.environment-agency.gov.uk/pdf/GEHO0709BQSB-e-e.pdf

Review

4.33 Sita submitted an Environmental Safety Case and Radiological Risk Assessment addressing the above requirements and proposing means of operation and limits on disposals. The radiological assessment of dose to the public from past and future disposals is based on assumed levels of disposals and predicting the behaviour and concentrations of radionuclides once they are in the environment. We reviewed all of the assumptions made and were satisfied they were reasonable.

4.34 During our review of the application we checked that Sita had:

- Applied and considered relevant legislation, policy, guidance and dose criteria;
- Used appropriate data in their calculations and assessments (e.g. radionuclide properties);
- Made reasonable assumptions where these were necessary (e.g. dilution factors);
- Used appropriately conservative data and assumptions;
- Used appropriate modelling to support their assessment;
- Considered a representative range of scenarios during both the operational and post-closure period in a proportionate manner (e.g. effects on house dwellers or impacts on farm produce via leachate);
- Proposed limitations on the radioactive waste that could be tracked back and demonstrated to ensure relevant dose criteria would always be met;
- Not made transcription or other such errors, and presented information clearly;
- Used logical reasoning and argument in their assessment and application.

4.35 Where necessary, as well as carrying out thorough checks on Sita's work, we also repeated certain calculations using our own models and data to ensure reproducibility. Sita's initial, scoping assessment suggested that the highest doses for comparison against the criteria would be associated with the following exposure pathways –

Operational phase	Normally expected to occur	Public – exposure to aerosols formed from leachate lagoons
	Not certain to occur	Leachate spillage – ingestion of fish
Post-closure phase	Normally expected to occur	Seafood consumers – ingestion of samphire
	Not certain to occur	Human intrusion – site resident exposure to Rn^{222}

4.36 The more detailed assessment concentrated mainly on the scenarios associated with the higher calculated doses. From our review we concluded that Sita had undertaken a largely conservative assessment that had looked at impacts that were expected to occur (e.g. to anglers, irrigation of food, sewerage workers, farming families and 'bathtubbing' of the landfill) and those that were not certain to occur (e.g. intrusion into the waste by workers, house construction on the waste, agriculture on the waste and fires). The Table below summarises Sita's results in

comparison to our regulatory screening criteria and background doses, with disposals at the limits sought in the application.

Category		**Exposure pathway**	**Maximum Estimated Doses** **mSv/year**	**Regulatory Criterion for a simplified approach** **mSv/year**	**Average UK Radiation Doses from all sources**
Operational phase	Normally expected to occur	Public – farming family (via sludge used for land conditioning)	0.017 #	0.02	2.7 mSv yr^{-1}, taking account of natural and other man-made sources
	Not certain to occur	Leachate spillage – ingestion of fish	0.89 *****	1	
Post-closure phase	Normally expected to occur	Seafood consumers – ingestion of samphire	0.0053 **$**	0.02	
	Not certain to occur	Human intrusion – site resident exposure to Rn^{222}	12.7 **£**	1	

Notes

This is the calculated dose from cobalt-60 if that accounted for all the disposals of the most restrictive group of beta emitters, at the disposal limit. If all other radionuclide groups were disposed of at maximum limits, the sum of the total individual doses would be about 0.02 mSv/year; however, because the dose contributions peak at different times, the critical group dose would always be less than the criterion in any one year.

***** This is the calculated total dose from all radionuclides, but only including carbon-14 from the most restrictive group of beta emitters, at the disposal limit. Because the dose contributions from different radionuclides peak at different times, the critical group dose would always be less than the figure given, in any one year.

$ This is the hypothetical calculated dose from all radionuclides at their disposal limits. Because of (i) the use of group limits and (ii) the dose contributions peaking at different times, the critical group dose would always be less than the figure given, in any one year.

£ This figure is based on radon diffusing directly from the waste mass into property assumed to be built on top of it. The applicant states that no account has been taken of any foundations or concrete at the base of a house.

4.37 The first three figures are below the relevant criterion for a simplified approach, but the fourth is higher, warranting further consideration. Greater potential impact represented by higher calculated doses has to be balanced against the probability of that scenario – house building – actually taking place. We consider house building on a disused landfill site close to an estuary unlikely in practice. Even if it occurred, the risks from radon are well recognised and can be readily mitigated if the occupant is aware of the risk, just as radon risks are already managed successfully in other parts of the UK, such as Cornwall.

Limit-setting

4.38 We have set annual LLW activity disposal limits broadly in line with what Sita sought and substantiated in their application, with one exception. The application looked at various groupings of radionuclides, and we accepted most of these as appropriate except that titled "uranium and associated surrogates", which included iodine-129. It is not credible that Sita could receive large amounts of iodine-129 in LLW, but we felt it was nevertheless inappropriate to apply what we considered to be an over-generous limit for a grouping including this radionuclide. We therefore moved iodine-129 to a different limited group, with a lower limit.

4.39 The need or otherwise for activity concentration limits was considered. LLW is defined as waste having up to 4 GBq/tonne alpha activity or up to 12 GBq/tonne beta-gamma activity; above either of those concentrations, waste must be considered as "intermediate level waste". We did not specify any lower concentration limits to applicants seeking landfill co-disposal permits; it was up to Sita in consultation with their existing and potential new customers to decide what market demands were and then assess what they could receive and determine the capacity of the landfill site to receive it. They decided to limit waste overall to no more than 200 Bq/gram, with small quantities allowed to be up to 1,000 Bq/gram (provided that any 10 tonne mass within the buried waste does not exceed 200 Bq/gram on average). We examined this aspect of Sita's proposal and associated risk assessment and decided that it was substantially acceptable. However, we decided that a lower activity concentration limit should apply to strontium-90, which was otherwise predicted to give somewhat higher doses than other radionuclides. These activity concentration limits have therefore been incorporated within the permit.

Summary

4.40 Having completed our review we were satisfied that the assessment and case presented was sound. On this basis, subject to the discussion above, we have in general adopted the proposed limitations on disposal, which were also those in the draft environmental permit upon which we consulted. Details of the limits adopted can be found in the environmental permit in Annex 2. Overall we were satisfied that:

- All of the requirements for the radiological assessment had been met and that the assessment had made use of appropriate data, models, calculations and assumptions;
- The limitation adopted will provide for safe disposal and protection of the environment;
- All the NS-GRA principles and requirements have been met in a manner proportionate to the hazard presented by the waste;
- The overall approach to assessment and making the case was reasonable and with clarifications provided following further information requests was clear and complete. Suitable conservatisms have been applied, allowing a sufficient margin of safety;
- Reasonable operational methods have been proposed.

Other Considerations

4.41 In addition to the above considerations a number of other key issues were addressed in our determination, some of which have led to specific conditions within the environmental permit.

Stakeholder engagement and dialogue with the host community

4.42 Through Requirement 2 of the NS-GRA we expect the applicant to undertake adequate dialogue with host communities and other stakeholders. Sita developed an engagement plan early on in their application process and actively engaged with local community groups and representatives, as well as local businesses. In addition to meeting with local groups and community representatives, press releases were issued, and public exhibitions were held. Overall we were satisfied with the extent of engagement undertaken.

Planning permission

4.43 LLW disposal at Clifton Marsh was an existing activity at the time of application, adequately covered by existing planning permissions. We were aware that the current planning permission only had a limited time to run, but also that Sita had sought an extension. As referred to in the previous section, we do not incorporate planning conditions into environmental permits; waste disposals can only take place if both environmental permits and planning permission are in force. Planning Permission to continue operations until 31 December 2015 was granted by Lancashire County Council on 18 July 2011.

Compliance history

4.44 We consider the operators of Clifton Marsh to have a satisfactory compliance history regarding their landfill environmental permit and to have contributed towards satisfactory compliance by the existing consignors to Clifton Marsh utilising their own radioactive substances activity permits. Landfill sites sometimes have problems with wind-blown litter, odour and noise. However, the nature, containment and burial methods for radioactive wastes make it unlikely that they would contribute significantly to any such problems in the future.

Existing landfill environmental permit and non-radiological protection

4.45 Sita currently holds an environmental permit (EA/EPR//BK2348IU/V003) for the Clifton Marsh Landfill Site which places limits and conditions on the disposal of controlled (non-radioactive) waste and hazardous asbestos waste. This permit will not be affected in any way by this decision, nor will the permits for the older phases (1 to 3) or leachate treatment.

4.46 LLW usually falls outside conventional waste legislation and standards because of its radioactive classification. It is often benign from a non-radiological point of view – the concentration of potentially harmful substances may be very small, or they may be in chemical forms that render them immobile and non-leachable. However, we consider that any radioactive waste with non-radiological, hazardous properties should be assessed against standards consistent with those for non-radioactive waste. Waste should only be accepted for burial if its non-radiological hazards have been assessed and shown to not present an unacceptable risk to the environment, and the potential risks need to be evaluated in a site environmental safety case, along with radiological risks. The RSA permit therefore specifies that the operator may only make disposals of radioactive waste that fulfil the relevant acceptance criteria, defined in the environmental safety case for radioactive waste.

4.47 Most LLW meeting the acceptance criteria will not require any special precautions to be taken, during disposal, against non-radiological hazards. The only exception would be any radioactively-contaminated asbestos, which would have to be disposed of in the dedicated asbestos cell in phase 4.

4.48 Note that any requirement for treatment of radioactive waste going to the landfill will be regulated at the consigning site, not at the receiving site. Through our regulation of consigning sites, we will expect consignors to demonstrate satisfactory application of the waste management hierarchy, and we will also encourage and require beneficial treatment where practicable.

Operational methods and procedures

4.49 Sita are well-accustomed to receiving LLW at Clifton Marsh, and their operational methods and procedures for receipt and disposal have been adjusted in readiness for compliance with the permit. Many of the relevant methods and procedures are already in place, well documented and tested. We are therefore able to take confidence from this past experience.

4.50 As Sita will not be authorised to dispose of any aqueous radioactive waste, we expect them to ensure that receipt and disposal of waste on the site will avoid contaminating any vehicles or equipment (which would potentially lead to the need for decontamination). The permit includes conditions requiring wastes to be covered or contained whenever necessary, so as not to contaminate vehicles or waste handling equipment.

4.51 Sita anticipate burying radioactive waste on the same day it is received on site, though it is always conceivable that they may receive consignments which, upon examination, might not comply with their acceptance criteria. To allow some leeway to resolve any such situations in a controlled manner, we have permitted Sita to

accumulate waste on site for a maximum of 14 days. Accumulated waste must be contained or at least covered, to prevent any dispersal by wind.

4.52 We have also required that radioactive waste must be covered by non-radioactive waste after disposal, to prevent any dispersal by the wind.

4.53 We consider Sita's developing procedures for the management of radioactive waste receipt and disposal to be fit for purpose at the time of introducing the permit. Through our regulation of the site we will monitor development of the management system to ensure it is suitably developed and able to ensure compliance with the permit.

Monitoring

4.54 The permit requires Sita to inspect waste both on receipt and after deposit to ensure, as far as reasonably practicable, that it conforms to the consignor's characterisation documentation provided for that radioactive waste. We also expect Sita to have robust procedures to confirm waste received for disposal is as expected and to have appropriate procedures in place to audit and check consignments before receipt. We are satisfied with the procedures in place and, through our regulation of the site, will continue to monitor these systems to ensure compliance with the permit.

4.55 Environmental monitoring programmes are already in place at Clifton Marsh, and we have decided that these should continue, in order to provide re-assurance that any migration of radioactivity from the site into the environment remains low and within levels considered by the radiological assessment. Sita will be required to take a number of samples and measurements on a routine basis and to report the results to us, which we will make available to the public through our Public Registers. The required monitoring includes surface waters, ground waters, leachate and landfill gas, and is detailed in a separate document from the permit, referred to as a "Compilation of Environment Agency Requirements ("CEAR") document. This monitoring will provide broad coverage of potential discharge pathways and allow identification of any adverse trends developing. It should be noted that other organisations (Springfields Fuels Ltd., the Food Standards Agency and ourselves) also conduct environmental monitoring for radioactivity in the vicinity, including the River Ribble both upstream and downstream of Clifton Marsh. These diverse monitoring programmes provide additional reassurance that if significant radioactivity were to migrate out of the landfill site, it would be detected through trends in some of the monitoring results.

Records and reporting

4.56 We will require Sita to maintain certain specified records and to report some of these to us on a regular basis, particularly records relating to the amounts, nature and radioactive content of disposals on a consignment basis, such that there is clarity of the waste inventory at any time. We will generally require summary reports of this information on an annual basis, such that we can confirm disposals remain within permit limits. The main recording requirements are detailed in the aforementioned CEAR document.

Improvements

4.57 We have included five improvement requirements in the permit, as summarised below:

1. An updated site stability risk assessment (for protection against flooding) must be submitted within three months. This (and the second requirement) mirror improvement requirements in the landfill environmental permit;
2. A review of the stability risk assessment every six years;
3. A review of how Sita have demonstrated compliance with the permit, application of BAT and generation of an action plan as necessary to be provided every three years; and
4. A requirement to submit, within three months, a fully consolidated environmental safety case document (as the safety case has been supplemented during the course of the determination and comprises several different documents).
5. A requirement to provide, within twelve months, the results of uranium leachability tests on a range of wastes considered for disposal at Clifton Marsh. Sita's present acceptance criterion on leachable uranium is based on limited data, and the extra results would allow them to substantiate suitable acceptance criteria with greater confidence.

4.58 We intend these requirements to drive continual improvement and ensure that the site's understanding and operation remains up to date with current best practice.

5. CONCLUSIONS AND DECISION

5.1 We have concluded that:

- Overall, we consider the application to be sound and to be consistent with relevant policy, legislation and guidance;
- We believe the Permit will ensure the protection of the public and the environment from the effects of radioactive waste disposals;
- The permit will ensure stringent controls on disposal of radioactive waste;
- The permit conditions are proportionate and risk based;
- Our decision will not place a grossly disproportionate burden on Sita's resources in meeting the requirements of the permit, or require grossly disproportionate expenditure for sampling, monitoring and managerial control of disposals; and
- The existing landfill environmental permit will not be affected and will continue to provide proportionate regulation of non-radiological disposals at the site.

5.2 We have decided to issue a permit as described in this Decision Document and as shown in Annex 2. We recognise that a number of objections have been raised with regard to this application by consultees (see Section 3). However, many of the issues raised are not directly relevant to the technical assessment of Sita's application, but relate more to planning policy and strategy for LLW disposal. As such we have responded to these comments as best we are able to, taking account of government policy, and have taken full and careful account of those that are relevant to the permitting process.

5.3 The environmental permit is based on a template permit for a landfill site. We have developed the template to make sure that it is up to date and effective, and that the relevant conditions properly protect people and the environment. The conditions are consistent with our Radioactive Substances Regulation – Environmental Principles[9]. The permit comprises:

- A certificate granting the authorisation to carry on radioactive substances activities;
- A schedule (Schedule 1) of standard conditions and limitations applicable to solid radioactive waste disposals and intended to be broadly common at all disposal sites;
- Additional Schedules (numbered 2 to 6) describing the permitted activities, additional requirements, numerical limitations and conditions on waste accumulation and disposal, notification requirements for environmentally significant events, interpretation, and site plan.

5.4 Continuing disposal of LLW to Clifton Marsh Landfill will help to reduce the volume of waste going to the LLWR near Drigg in Cumbria. In general we support the intention to reduce the overall volume of waste going to the LLWR, to preserve its limited capacity for wastes which require higher levels of engineered containment. However, waste disposal should be the option of last resort and we expect to see the waste management hierarchy applied as far as possible to minimise all waste generation and disposal to any location. This intention aligns with the government's LLW policy.

6. NEXT STEPS

6.1 We made DECC aware of this application and the consultation responses received. The Secretary of State has powers of direction under EPR 10 concerning the application and our decision. In April 2012 we received confirmation from DECC that it would not be appropriate to refer the application for consideration by the Secretary of State, and we are therefore implementing our decisions by issuing the permit shown in Annex 2.

6.2 We will specify or approve further detailed compliance requirements as required by the permit prior to its first use.

6.3 Both the environmental permit and this Decision Document will be placed on the public register.

6.4 We note that permitting Sita to receive and dispose of LLW at Clifton Marsh does not in itself guarantee that disposals can take place. Sites wishing to consign waste to Clifton Marsh for disposal will have to have their existing permits varied to allow transfers to take place, and we may not grant the necessary variations if we do not consider that consignors have carried out the necessary waste options study to support selection of the optimum disposal route for each type of waste.

[9] Radioactive Substances Regulation – Environmental Principles (The Environment Agency) – see http://www.environment-agency.gov.uk/business/sectors/111010.aspx

7. GLOSSARY OF TERMS AND ABBREVIATIONS

ALARA	As low as reasonably achievable
BAT	Best Available Techniques.
Bq	Becquerel: The standard international unit of radioactivity equal to one radioactive transformation per second. A Megabecquerel (MBq) equals 1 million transformations per second. A Gigabecquerel (GBq) equals 1 thousand million transformations per second. A Terabecquerel (TBq) equals 1 million million transformations per second.
BPEO	Best Practicable Environmental Option.
BPM	Best Practicable Means.
CEAR	Compilation of Environment Agency Requirements.
DECC	Department for Energy and Climate Change.
Disposal	Defined under EPR 10, in relation to waste, to include its removal, deposit, destruction, discharge (whether into water or into the air or into a sewer or drain or otherwise) or burial (whether underground or otherwise).
Dose	A general term used as a measure of the radiation received by man and usually measured in Sieverts.
Dose Constraint	A restriction on annual dose to an individual from a single source applied at the design and planning stage of any activity in order to ensure that when aggregated with doses from all sources, excluding natural background and medical procedures, the dose limit is not exceeded. The dose constraint places an upper bound on the outcome of any optimisation study and will therefore limit any inequity that might result from the economic and social judgements inherent in the optimisation process.
Dose Limit	A limit of 1mSv/y to members of the public is applied for all man-made sources of radiation (other than from medical exposure). This limit is incorporated within UK law.
EA 95	The Environment Act 1995.
ESC	Environmental Safety Case.
EPR 10	The Environmental Permitting Regulations 2010.
HSE	Health and Safety Executive.

HPA-RPD	Health Protection Agency – Radiological Protection Division.
IAEA	International Atomic Energy Agency.
LLW	Low level waste: Waste containing levels of radioactivity greater than those acceptable for disposal with normal refuse but not exceeding 4 GBq/tonne alpha-emitting radionuclides or 12 GBq/tonne beta-emitting radionuclides.
LLWR	Low Level Waste Repository.
NDA	Nuclear Decommissioning Authority.
NS-GRA	Guidance on Requirement for Authorisation of Near-surface Disposal Facilities on Land for Solid Radioactive Wastes.
ONR	Office for Nuclear Regulation (part of the Health and Safety Executive).
PPC	Pollution Prevention and Control.
RSA 93	The Radioactive Substances Act 1993.
Radioactivity	The property of some radionuclides to spontaneously disintegrate emitting radiation such as alpha particles, beta particles and gamma rays.
Radiological assessment	An assessment of the radiation dose to members of the public including that from discharges, which will result from operation or decommissioning of a facility.
Radionuclide	A general term for an unstable atomic nuclide that emits ionising radiation.
Sv	Sievert: A measure of radiation dose received. A millisievert (mSv) is one thousandth of a sievert.

ANNEX 1 - EC ARTICLE 37 OPINION

COMMISSION OPINION

of 10 March 2011

relating to the plan for the disposal of radioactive waste arising from the Clifton Marsh Low-level Radioactive Waste Disposal Facility, located in Lancashire, United Kingdom, in accordance with Article 37 of the Euratom Treaty

(Only the English text is authentic)

(2011/C 77/02)

On 23 September 2010, the European Commission received from the British Government, in accordance with Article 37 of the Euratom Treaty, General Data relating to the plan for the disposal of radioactive waste arising from the Clifton Marsh Low-level Radioactive Waste Disposal Facility.

On the basis of these data and additional information requested by the Commission on 11 October 2010 and provided by the British authorities on 25 November 2010, and following consultation with the Group of Experts, the Commission has drawn up the following opinion:

1. The distance between the disposal facility and the nearest point on the territory of another Member State, in this case Ireland, is 180 km.

2. During the disposal facility's operational period:

— radioactive waste will be emplaced in the disposal facility without intention of retrieval,

— the disposal facility will not be subject to a discharge authorisation for liquid and gaseous radioactive effluents. However, radioactive gases will emanate from the disposal facility; these are not liable to affect the health of the population of another Member State,

— in the event of unplanned releases of radioactive effluents, which may follow an accident of the type and magnitude considered in the General Data, the doses received in another Member State will not be liable to affect the health of the population.

3. After the disposal facility's operational period:

The measures envisaged for the final closure of the disposal facility as described in the General Data, provide reliance that the conclusions under point 2 above will remain valid in the long term.

In conclusion, the Commission is of the opinion that the implementation of the plan for the disposal of radioactive waste in whatever form arising from the Clifton Marsh Low-level Radioactive Waste Disposal Facility in the United Kingdom, during its normal operational life and after its final closure, as well as in the event of an accident of the type and magnitude considered in the General Data, is not liable to result in the radioactive contamination of the water, soil or airspace of another Member State.

Done at Brussels, 10 March 2011.

For the Commission

Günther OETTINGER

Member of the Commission EN 11.3.2011 Official Journal of the European Union C 77/3

ANNEX 2: ENVIRONMENTAL PERMIT

Permit with Introductory Note

The Environmental Permitting (England & Wales) Regulations 2010

Sita (Lancashire) Limited

Clifton Marsh Landfill Site
Preston New Road
Preston
Lancashire
PR4 0XE

Permit number

CD0235

Clifton Marsh Landfill Site
Permit number CD0235

Introductory Note

This introductory note does not form a part of this permit

The permit allows the operator to carry on specified radioactive substances activities, namely receipt, accumulation and disposal of radioactive waste, on the specified premises.

The permit is issued under the provisions of regulation 13 of the Environmental Permitting (England and Wales) Regulations 2010. Those Regulations are concerned with the control of radioactive material and the receipt, transfer, accumulation and disposal of radioactive waste.

The operator must also comply with other legislation to which the keeping or use of radioactive material and the transfer, accumulation and disposal of radioactive waste is subject. This includes legislation enforced by the Health and Safety Executive and Office for Nuclear Regulation.

The Clifton Marsh facility is a conventional waste disposal landfill site, covering an area of 92 hectares, and is split into four phases. Phases 1, 2 and 3, now undergoing restoration, were developed on a dilute and attenuation basis. Current disposals are to Phase 4, which is being developed on a full containment basis, with composite lining and leachate collection system. It is being developed in a series of 5 cells, of which one is a separately engineered mono-cell for asbestos waste.

The site accepts conventional waste mainly from Preston, Blackpool and Fylde areas. Most of the waste accepted falls into the categories of degradable household, industrial, and commercial wastes; inert waste and contaminated soils. An adjacent landfill site to the West, Grange Farm, was used for waste disposal until the present site came into operation in 1986. Low level radioactive waste disposal at Grange Farm and Clifton Marsh commenced in 1974, through authorisations granted originally to British Nuclear Fuels Ltd. in respect of their sites at Capenhurst and Springfields.

Leachate collected from the site is treated in two lagoons (by aeration to remove methane) before being piped to United Utilities Limited for final treatment at the adjacent Preston Waste Water Treatment Works. Landfill gas is collected and used for electricity generation in gas engines located on the site.

Most wastes deposited at the site go directly to the tip face for disposal using a landfill compactor. Accumulation is only permitted for a maximum of fourteen days before disposal, and is subject to conditions requiring containment against the weather. After disposal, the wastes are covered by the end of each working day to prevent odour, windblown litter and scavenging by birds.

Other existing Permits relating to this site		
Type of Permit	**Reference Number**	**Date of issue**
Landfill Waste Management Licence (Phases 1 - 3)	WML474 (EAWML54097)	14 May 1993
Landfill Environmental Permit (Phase 4)	BK2348IU Latest variation (V003)	30 July 2004 9 June 2011
Leachate Treatment Plant	XP3032MQ Latest variation (V002)	28 September 2007 15 March 2011

The status log of the permit sets out the permitting history, including any changes to the permit reference number.

Status Log of the permit			
Description	**Reference Number**	**Date**	**Type of change made or comments**
Application	CD0235	Duly made 02/11/09	
Additional Information received	-	07/05/10	
Additional Information received	-	09/12/10	
Permit determined	CD0235	14/08/12	

End of Introductory Note

Permit

Permit number
CD0235

The Environment Agency hereby authorises, under regulation 13 of the Environmental Permitting (England and Wales) Regulations 2010,

Sita (Lancashire) Limited ("the operator"),

whose registered office is

Sita UK
Sita House
Grenfell Road
Maidenhead
Berkshire, SL6 1ES

company registration number **02640956**

to carry on radioactive substance activities at

Clifton Marsh Landfill Site ("the premises")
Preston New Road
Preston
Lancashire, PR4 0XE

to the extent authorised by and subject to the conditions of this permit.

Name		Date
Mr Stephen Hardy		14 August 2012

Authorised on behalf of the Environment Agency

The permit shall take effect from 1 September 2012

1 Management

1.1 General management

1.1.1 The operator shall manage and operate the activities:

(a) in accordance with a written management system that is sufficient to achieve compliance with the conditions of this permit; and

(b) using sufficient competent persons and resources.

1.1.2 The operator shall maintain records demonstrating compliance with condition 1.1.1.

1.1.3 Any person having duties that are or may be affected by the matters set out in this permit shall have convenient access to a copy of it kept at or near the place where those duties are carried out.

1.1.4 The operator shall manage and operate the activities in consultation with such suitable RPAs, or other such qualified experts approved by the Environment Agency in writing, as are necessary for the purpose of advising the operator as to compliance with this permit.

2 Operations

2.1 Permitted activities

2.1.1 The operator is only authorised to carry out the activities specified in schedule 1 table S1.1 (the "activities").

2.2 The site

2.2.1 The activities shall not extend beyond the site, being the land shown edged in blue on the site plan at schedule 6 to this permit.

2.3 Operating techniques

2.3.1 The operator shall use the best available techniques in respect of the disposal of radioactive waste pursuant to this permit to

(a) minimise the activity of gaseous and aqueous radioactive waste disposed of by discharge to the environment;

(b) minimise the volume of radioactive waste disposed of by transfer to other premises; and

(c) dispose of radioactive waste at times, in a form, and in a manner so as to minimise the radiological effects on the environment and members of the public.

2.3.2 The operator shall maintain in good repair the systems and equipment provided:

(a) to meet the requirements of condition 2.3.1;

(b) to carry out any monitoring and measurements necessary to determine compliance with the conditions of this permit;

(c) to measure and assess the exposure of members of the public and radioactive contamination of the environment.

2.3.3 The operator shall check, at an appropriate frequency, the effectiveness of systems, equipment and procedures provided to meet the requirements of condition 2.3.1.

2.3.4 The operator shall have and comply with appropriate criteria for the acceptance into service of systems, equipment and procedures for:

(a) carrying out any monitoring and measurements necessary to determine compliance with the conditions of this permit;

(b) measuring and assessing exposure of members of the public and radioactive contamination of the environment.

2.3.5 The operator shall post copies of this permit on the premises, in such characters and in such positions to be conveniently read by persons who have duties on the premises which are or could be affected by the matters set out in this permit.

2.4 Improvement programme

2.4.1 The operator shall complete the improvements specified in schedule 1 table S1.2 by the date specified in that table unless otherwise agreed in writing by the Environment Agency.

2.4.2 Except in the case of an improvement which consists only of a submission to the Environment Agency, the operator shall notify the Environment Agency within 14 days of completion of each improvement.

2.5 Pre-operational conditions

2.5.1 The activities shall not be brought into operation until the measures specified in schedule 1 table S1.3A have been completed.

2.5.2 The operations specified in schedule 1 table S1.3B shall not commence until the measures specified in that table have been completed.

2.6 Receipt of radioactive waste

2.6.1 The operator shall:

(a) only accept radioactive waste which this permit allows the operator to accumulate and dispose of, and which meets the operator's acceptance criteria for radioactive waste as defined in the environmental safety case without the need for any mixing or dilution;

(b) for each type of radioactive waste that the operator is prepared to receive, produce a written specification of the information required to enable the disposal of that type of radioactive waste in compliance with this permit;

(c) provide that written specification to any person from whom the operator is prepared to receive radioactive waste of that type;

(d) only accept a consignment of radioactive waste that is accompanied by a legible note providing the information specified in condition 2.6.1 (b);

(e) keep a copy of any such note received;

(f) provide a receipt to the consignor in respect of each consignment of radioactive waste that the operator accepts.

2.6.2 The operator shall visually inspect:

(a) without unloading it, radioactive waste that is not in an enclosed container or enclosed vehicle on arrival at the premises; and

(b) radioactive waste at the point of burial;

and shall establish as far as reasonably practicable whether it conforms to the consignor's characterisation documentation provided for that radioactive waste.

2.6.3 The operator shall ensure that any radioactive waste which does not comply with the specifications produced pursuant to condition 2.6.1 is returned to the consignor as soon as practicable, unless the Environment Agency agrees otherwise in writing.

2.6.4 The operator shall neither dispose of, nor accept delivery of, radioactive waste for disposal by burial on the premises -

(a) whenever landfill disposal activities authorised by environmental permit BK2348IU have ceased; or

(b) after 31 December 2020.

2.6.5 Before the operator first receives radioactive waste from a consignor, the operator shall inform the local authority, in whose area of responsibility the premises is situated, of the origin and nature of the radioactive waste.

2.6.6 The provisions of condition 2.6.5 do not apply to the extent that it would require the disclosure of information relating to sealed radioactive sources.

2.7 Accumulation of radioactive waste

2.7.1 The operator shall not accumulate radioactive waste unless it is of a type specified in Schedule 2, Table S2.1.

2.7.2 The operator shall not accumulate radioactive waste in quantities exceeding the limits on activity or volume given in Schedule 2, Table S2.1.

2.7.3 The operator shall not accumulate radioactive waste for a time exceeding the limit given in Schedule 2, Table S2.1.

2.7.4 The operator shall keep accumulated radioactive waste under cover or in containers that prevent, so far as reasonably practicable, the dispersal of radioactive contamination.

3 Disposals of radioactive waste and monitoring

3.1 Disposals of radioactive waste

3.1.1 The Operator shall not dispose of radioactive waste unless the waste type and disposal route are both specified in the same table in Schedule 3.

3.1.2 The Operator shall not dispose of radioactive waste in excess of any of the limits on disposals given in schedule 3.

3.1.3 The Operator shall not dispose of radioactive waste unless:

(a) all the relevant radioactive waste acceptance procedures have been completed and it fulfils the relevant radioactive waste acceptance criteria as defined in the environmental safety case; and

(b) it has not been diluted or mixed solely to meet condition 3.1.3(a) or any other condition of the permit.

3.1.4 The operator shall, after each disposal of radioactive waste,

(a) cover it whenever necessary to prevent wind-blown dispersal; and

(b) cover it, using non-radioactive material or waste, no more than eight hours after disposal or by the end of the working day, whichever is sooner.

3.1.5 The operator shall, not later than 14 days after the end of each month or within such longer period as the Environment Agency may approve in writing, record all disposals of radioactive waste made during that month.

3.2 Monitoring

3.2.1 The operator shall:

(a) take samples and conduct measurements, tests, surveys, analyses and calculations as necessary to determine compliance with the conditions of this permit;

(b) use the best available techniques when taking such samples and conducting such measurements, tests, surveys, analyses and calculations, unless the Environment Agency specifies particular techniques in accordance with condition 3.2.4 (a);

(c) define and document the techniques being employed to determine the activity of radioactive waste disposals, and inform the Environment Agency in writing in advance of any modifications to those techniques that have a potential to change the results obtained.

3.2.2 The operator shall maintain records of all monitoring required by this permit including records of the taking and analysis of samples, instrument measurements (periodic and continual), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.

3.2.3 For the monitoring of disposals and the environment required by condition 3.2.1 or 3.2.4, the operator shall employ monitoring equipment, techniques, personnel and organisations which have either MCERTS certification or MCERTS accreditation (as appropriate), where available, unless otherwise agreed in writing by the Environment Agency.

3.2.4 If required by the Environment Agency, the operator shall

(a) take such samples and conduct such measurements, tests, surveys, analyses and calculations, including environmental measurements and assessments, at such times and using such methods and equipment as the Environment Agency specifies;

(b) keep samples, provide samples, or dispatch samples for tests at a laboratory, as the Environment Agency specifies, and ensure that the samples or residues thereof are collected from the laboratory within three months of receiving written notification that testing and repackaging in accordance with the relevant legislation are complete.

3.2.5 The operator shall carry out:

(a) regular calibration, at an appropriate frequency, of systems and equipment provided for:

(i) carrying out any monitoring and measurements necessary to determine compliance with the conditions of this permit;
(ii) measuring and assessing exposure of members of the public and radioactive contamination of the environment.

(b) regular checking, at an appropriate frequency, that such systems and equipment are serviceable and correctly used.

4 Information

4.1 Records

4.1.1 All records required to be made by this permit shall:

(a) be legible;

(b) be made as soon as reasonably practicable;

(c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and

(d) be retained until notified in writing by the Environment Agency that records no longer need to be retained.

4.1.2 The operator shall keep on the premises all records, plans and the management system required by this permit, unless otherwise agreed in writing by the Environment Agency.

4.1.3 The operator shall maintain a documented environmental safety case in relation to the burial of radioactive wastes, which demonstrates

(a) the use of best available techniques to protect members of the public and the environment; and

(b) protection of members of the public and the environment from the non-radiological hazards of the radioactive waste;

throughout the life-cycle of the activities.

4.1.4 The operator shall

(a) retain records made in accordance with any previous relevant permit issued to the operator and related to the premises covered by this permit;

(b) retain records transferred to the operator, which were made in accordance with any previous relevant permit related to the premises covered by this permit.

4.2 Reporting

4.2.1 The operator shall send all reports and notifications required by this permit to the Environment Agency using the contact details supplied in writing by the Environment Agency.

4.2.2 The operator shall supply such information in relation to -

(a) the disposals of radioactive waste; and

(b) the samples, tests, surveys, analysis and calculations, environmental monitoring and assessments undertaken in accordance with conditions 3.2.1 and 3.2.4;

in such format and within such timescales as the Environment Agency may specify in writing.

4.3 Notifications

4.3.1 The operator shall notify the Environment Agency without delay following the detection of:

(a) any malfunction, breakdown or failure of equipment or techniques and any accident, which has caused, is causing or may cause significant pollution or may generate significant amounts of radioactive waste;

(b) the breach of a limit specified in this permit, or disposal of waste other than by a relevant permitted route;

(c) any significant adverse environmental effects.

4.3.2 Any information provided under condition 4.3.1 shall be confirmed by sending the information listed in schedule 4 within the time period specified in that schedule.

4.3.3 Where the Environment Agency has requested in writing that it shall be notified when the operator is to undertake monitoring and / or spot sampling, the operator shall inform the Environment Agency when the relevant monitoring and / or spot sampling is to take place. The operator shall provide this information to the Environment Agency at least 14 days before the date the monitoring is to be undertaken.

4.3.4 The operator shall notify the Environment Agency within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:

(a) where the operator is a registered company:

(i) any change in the operator's trading name, registered name or registered office address; and
(ii) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.

(b) where the operator is a corporate body other than a registered company:

(i) any change in the operator's name or address; and
(ii) any steps taken with a view to the dissolution of the operator.

4.3.5 Where the operator proposes to make a change in the management system or resources, which might have, or might reasonably be seen to have a significant impact on how compliance with the conditions of this permit is achieved:

(a) the operator shall notify the Environment Agency at least 28 days before making that change or, where that is not possible, without delay; and

(b) shall include in the notification a description of the proposed changes.

4.3.6 Where the operator proposes to make a change to the acceptance criteria for radioactive waste buried on the premises, the operator shall:

(a) notify the Environment Agency at least 28 days before making that change, or where that is not possible, without delay; and

(b) include in the notification a description of the proposed changes.

4.4 Interpretation

4.4.1 In this permit the expressions listed in schedule 5 shall have the meaning given in that schedule.

4.4.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made "without delay", in which case it may be provided by telephone.

Schedule 1 - Operations

Table S1.1 activities

Activity reference	Activity listed in Schedule 23 of the Environmental Permitting Regulations	Description of specified activity	Limit of specified activity
A1	Sch 23 Part 2 para 5(4)(a)	Receipt of radioactive waste for the purpose of disposal	Radioactive waste received at the site must have been transferred to the premises either (a) in accordance with a radioactive substances activity environmental permit held by the consignor; or (b) as a transfer for which the consignor is exempt from the requirement to hold a radioactive substances activity environmental permit.
A2	Sch 23 Part 2 para 5(2)(c)	Accumulation of radioactive waste	
A3	Sch 23 Part 2 para 5(2)(b)	Disposal of radioactive waste on or from the premises	

Table S1.2 Improvement programme requirements		
Reference	**Requirement**	**Date**
S1.2.1	The operator shall submit a stability risk assessment to the Agency for assessment. The report must - • update and improve upon the 2005 Stability Risk Assessment; • consider the stability of the flood defence bund(s) and the engineered basal / sidewall lining and capping systems to all phases of the landfill site (including Phases 1, 2 and 3), in terms of the site's ability to withstand potentially increased groundwater pressure and erosion and hydrostatic pressure from the River Ribble; • include a list of measures for implementing any necessary improvements to the landfill site; and • contain dates for the implementation of individual measures. The operator shall implement the report's measures as approved by, and from the date(s) stipulated by, the Agency.	Three months from the effective date of this permit.
S1.2.2	The operator shall review the stability risk assessment referred to in S1.2.1 above, and shall submit a report of the review to the Agency.	Six years from the effective date of this permit, and every six years thereafter.
S1.2.3	The operator shall provide the Agency with a report of a review of the activities undertaken to demonstrate compliance with the limits and conditions specified within this permit (including checks, monitoring, sampling and audits). The review shall consider whether best available techniques are being used, and the report shall include a programme for carrying out any necessary changes identified by the review.	Every three years from the effective date of this permit or as otherwise agreed in writing by the Agency
S1.2.4	The operator shall provide hard and electronic copies of the environmental safety case (as defined in this permit), consolidated so as to include the June 2012 addendum, materials acceptance criteria and other main supporting documents, as well as figures and tables.	Three months from the effective date of this permit.
S1.2.5	The operator shall provide a report giving the results of uranium leachability tests on a range of wastes considered for disposal at Clifton Marsh, with the extent / range of the tests to be agreed in writing with the Environment Agency. The report is to include a review of the existing leachable-uranium acceptance criterion and a justification for the proposed criteria resulting from the review.	Twelve months from the effective date of this permit.

Table S1.3A Pre-operational measures
No measures specified

Table S1.3B Pre-operational measures for future development			
Reference	**Operation**		**Pre-operational measures**
	Disposal of radioactive waste for which the dry weight availability from water leach tests exceeds any of the following:		The operator shall resubmit his Material Acceptance Criteria for Permitted Radioactive Material, justifying any changes to the limits in this table, and providing all supporting calculations and assessments, including a revised H1 Assessment, as required by the Agency as a prerequisite for agreeing such changes.
	Hazardous substances such as chromium, arsenic, cadmium, mercury	2.2 mg / kg	
	Non-hazardous substances, such as nickel, zinc, manganese, vanadium, cobalt, lead, copper	1.4 mg / kg	
	Uranium and thorium	296 mg / kg	

Schedule 2 – Accumulation of radioactive waste

Table S2.1: Accumulation of radioactive waste				
Specified waste type	**Radionuclide or group of radionuclides**	**Activity limit**	**Volume limit**	**Period limit**
Solid Low Level Waste	Any radionuclide	The standard LLW limits apply	None specified	14 days

Schedule 3 – Disposals of radioactive waste

Table S3.3 Specified disposal by on–site burial in Phase 4 of the site

Specified Waste type	Radionuclide or group of nuclides	Activity limits		Volumetric Limits
		Annual limit GBq/year	Specific activity limit Bq/gram	
Solid Low Level Waste	Radionuclides of Uranium (U^{232}, U^{233}, U^{234}, U^{235}, U^{236}, U^{238}), taken together	500 #	N/A	-
	Radionuclides of Thorium (Th^{228}, Th^{229}, Th^{230}, Th^{232}, Th^{234}), Tin-126 and Niobium-94, taken together	100 #	N/A	-
	Radionuclides of Caesium (Cs^{134}, Cs^{137}), Europium (Eu^{152}, Eu^{154}, Eu^{155}), Ruthenium (Ru^{103}, Ru^{106}), Actinium-227, Silver-110m, Barium-133, Carbon-14, Chlorine-36, Cobalt-60, Iodine-129, Niobium-95, Antimony-125, Strontium-90, Technetium-99, Zinc-65 and Zirconium-95, taken together	10 #	N/A	-
	Radium-226, Radium-228, Lead-210 and Polonium-210, taken together	6 #	N/A	-
	Cerium-144, Iron-55, Manganese-54, Nickel-63, Promethium-147 and Plutonium-241, taken together	2,000 #	N/A	-
	Radionuclides of Americium (Am^{241}, Am^{243}), Curium (Cm^{242}, Cm^{243}, Cm^{244}), Alpha-emitting Plutonium radionuclides (Pu^{238}, Pu^{239}, Pu^{240}, Pu^{242}), Silver-108m, Neptunium-237 and Protactinium-231, taken together	50 #	N/A	-
	Tritium	10,000 #	N/A	-
Solid Low Level Waste	Strontium-90, in any volume of waste	-	100	-
	All radionuclides, taken together, in any volume of waste	-	1,000	-
	All radionuclides, taken together, averaged over every successive 10 tonnes of waste disposed of at the premises	-	200	-

NOTE: # These are calendar-year limits. If the permit comes into force part way through the year, the limits for the remainder of that year are one twelfth of each respective limit for each complete calendar month remaining in that year.

Schedule 4 - Notification

These pages outline the information that the operator must provide.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the disposal. Where appropriate, a comparison should be made of actual disposals and permitted disposal limits.

Part A

Permit Number	
Name of operator	
Location of Facility	
Time and date of the detection	

(a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or disposal which has caused, is causing or may cause significant pollution or may generate significant amounts of radioactive waste	
To be notified within 24 hours of detection	
Date and time of the event	
Reference or description of the location of the event	
Description of where any disposal into the environment took place	
Radionuclides potentially released	
Best estimate of the quantity or rate of release of radionuclides or amount of radioactive waste generated	
Measures taken, or intended to be taken, to stop any disposal	
Description of the failure or accident.	

(b) Notification requirements for the breach of a limit	
To be notified within 24 hours of detection unless otherwise specified below	
Disposal outlet reference / source	
Radionuclides	
Limit	
Measured value and uncertainty	
Date and time of monitoring	
Measures taken, or intended to be taken, to stop the disposal	

Time periods for notification following detection of a breach of a limit	
Parameter	**Notification period**

(c) Notification requirements for the detection of any significant adverse environmental effect	
To be notified within 24 hours of detection	
Description of where the effect on the environment was detected	
Radionuclides detected	
Activity of radionuclides detected	
Date of monitoring / sampling	

Part B - to be submitted as soon as practicable

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident	
Measures taken, or intended to be taken, to rectify, limit or prevent any contamination of the environment which has been or may be caused by the disposal	
The dates of any unauthorised disposals from the facility in the preceding 24 months.	

Name*	
Post	
Signature	
Date	

* authorised to sign on behalf of Sita (Lancashire) Ltd.

Schedule 5 - Interpretation

In this permit, except where otherwise specified, words and expressions defined in the Environmental Permitting (England and Wales) Regulations 2010 in relation to radioactive substances regulation shall have the same meanings when used in this permit as they have in those Regulations.

“*activity*”, expressed in becquerels, means the number of spontaneous nuclear transformations occurring in a period of one second.

"*annual limit*" means the limit over a period of a calendar year.

"*best available techniques*" means the latest stage of development (state of the art) of processes, of facilities or of methods of operation which indicate the practical suitability of a particular measure for limiting discharges, emissions and waste. In determining whether a set of processes, facilities and methods of operation constitute the best available techniques in general or individual cases, special consideration shall be given to*:*

a. comparable processes, facilities or methods of operation which have recently been successfully tried out;

b. technological advances and changes in scientific knowledge and understanding;

c. the economic feasibility of such techniques;

d. time limits for installation in both new and existing plants;

e. the nature and volume of the discharges and emissions concerned.

"techniques" include both the technology used and the way in which the installation is designed, built, maintained, operated and dismantled.

"*Bq, kBq, MBq, GBq, TBq and PBq*" are used as abbreviations meaning becquerels, kilobecquerels, megabecquerels, gigabecquerels, terabecquerels and petabecquerels respectively.

"calendar year" means a period of 12 consecutive months beginning on 1 January.

"*environment*" means all, or any, of the media of air, water (to include sewers and drains) and land.

“*environmental safety case*” means the set of claims concerning the environmental safety of the disposal of solid radioactive waste, as described in the guidance on the “Near-surface Disposal Facilities on land for Solid Radioactive Waste” at http://publications.environment-agency.gov.uk/pdf/GEHO0209BPJL-e-e.pdf

"LLW" means solid radioactive waste, including any immediate packaging, with a maximum concentration of 4 gigabecquerels per tonne of alpha emitting radionuclides and 12 gigabecquerels per tonne of all other radionuclides.

“MCERTS” means the Environment Agency’s Monitoring Certification Scheme*.*

“month” means calendar month.

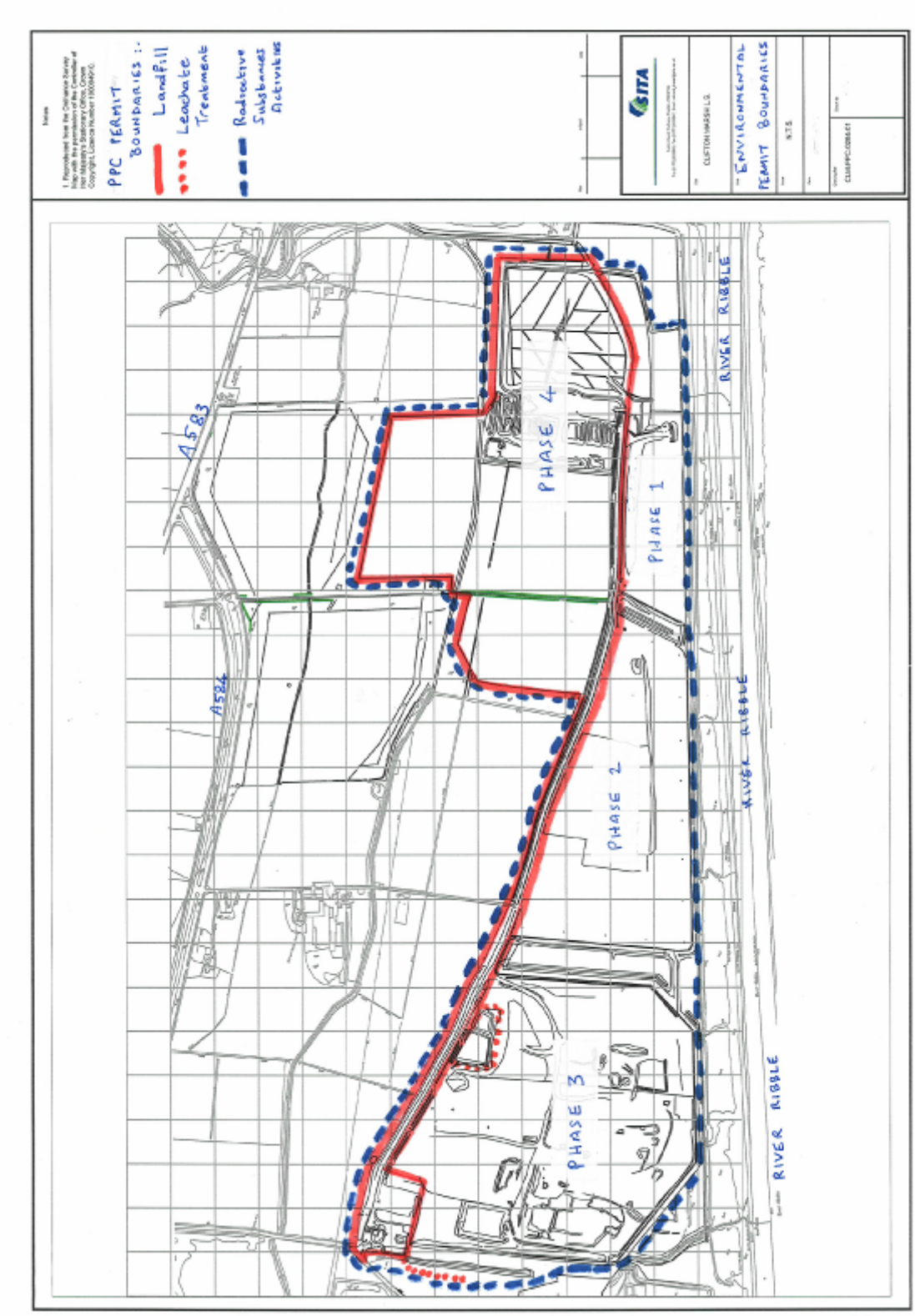
"*packaging*" includes any sack, drum, container or wrapping.

“RPA” means a Radiation Protection Adviser appointed under Regulation 13 of the Ionising Radiations Regulations 1999.

"*samples*" includes samples that have been prepared or treated to enable measurements of activity to be made.

"year" means calendar year.

Schedule 6 - Site plan



END of PERMIT