Low Level Waste Repository

Our review of the Environmental Safety Case

September 2013

Foreword

This is the fourth in a series of progress reports on the Environment Agency's review of the Low Level Waste Repository's Environmental Safety Case, leading up to our review of the site's Environmental Permit and a decision on granting a revised Environmental Permit for on-going disposals at the site. We anticipate this being the last progress report before we begin consultation on an Environmental Permit variation this autumn.

Introduction

The Low Level Waste Repository near Drigg (LLWR) is used for the disposal, by burial, of low level radioactive waste (LLW). In May 2011 the operators of the site, LLW Repository Ltd, submitted an updated Environmental Safety Case (ESC) to the Environment Agency, as required under their Environmental permit.

We have now completed our technical review of the ESC and are currently in the process of concluding and documenting our findings which we will publish before we consult on any draft Environmental Permit decision. The review process has taken longer than originally anticipated, as the review identified additional assessment work that needed to be carried out by LLW Repository Ltd and assessed by the Environment Agency. We have taken the time necessary to complete a thorough review of the submitted ESC.

LLW Repository Ltd has informed us that they anticipate submitting an application around mid-October 2013, to vary their Environmental Permit to allow the continued disposal of LLW at the site. We will review this application when received and will consult with others upon it.

The Importance of this review

Low Level Waste (LLW) is generated by the nuclear industry and also by non-nuclear sources such as hospitals. LLW is typically made up of contaminated operational and decommissioning wastes such as protective clothing, paper, metals, rubble and soil. The LLWR is currently the only facility in the UK designed to take nearly all types of LLW.

Photograph of the LLWR taken from the North West, Courtesy of LLW Repository Limited

When the last ESC was submitted in 2002 we found it to be incomplete. As a result, we were only able to authorise disposal of LLW into the vault that was in use at the time, Vault 8. Vault 8 is now full and LLW Repository Ltd has informed us they will ask for a varied Environmental Permit to dispose of LLW in other vaults, including those not yet built. The Environment Agency will only authorise further disposals of LLW if we are satisfied that it will be safe for people and the environment, both now and in the longer term. LLW Repository Ltd has set out to demonstrate this in their updated ESC.

Technical issues

Our technical review of the ESC will provide key evidence to support any decision on the application to vary the Environmental Permit. Central to this review is the expectation that the site will be subject to coastal erosion after a period of several hundred to a few thousand years time in the future.

Through the review we have addressed the full breadth of areas that influence the ESC. Where we have required further information for clarity, or to address a gap in the information provided within

the 2011 ESC, we have raised 'Issue Resolution Forms (IRFs)'. We have raised 72 IRFs in total including 17 'Regulatory Issues', 19 'Regulatory Observations' and 36 'Technical Queries'[1]. All but the last few IRF actions have now been responded to by LLW Repository Ltd and we are currently taking these responses into account within our technical review write-up.

Within previous progress reports we reported on some key technical issues we have addressed, each of which have now reached a conclusion in the context of our technical review, as discussed below. We will be seeking wider views on these and other issues during our consultations.

Long lived higher activity particles, items and sources

We asked LLW Repository Ltd to assess the impacts of individuals coming into contact with long lived higher activity particles, items or sources that may be within the waste, in particular, when coastal erosion of the site occurs. We also provided LLW Repository Ltd with additional guidance on the assessment of such impacts, seeking a more precautionary approach to future waste disposals. LLW Repository Ltd responded by providing a series of assessments addressing these risks and proposing waste acceptance criteria (WAC) that would ensure safety standards would be met.

LLW Repository Ltd's assessments have suggested that impacts from such wastes will generally be low and that where there is a risk of radioactive doses towards the upper end of acceptability, the risk of such doses being incurred by any individual is extremely low. The assessments claim that all the appropriate regulatory criteria (as detailed within the Guidance on Requirements for Authorisation (GRA)[2]) will be met. Furthermore, WAC have been proposed to limit the risk of receiving wastes in the future that could present unacceptable risks of this nature. Overall, the Environment Agency agrees with the outcome of these assessments and the WAC proposed for these types of wastes.

Waste container, grout condition and disposal facility engineering

Following findings in 2012 that some waste containers were in poorer condition than anticipated, evidence of some grout settling within the containers and that water could access some containers, we requested further inspection and assessment work from LLW Repository Ltd. This work has since been provided and addresses issues such as waste (and hence cap) settlement, radioactive discharges resulting from water entering the containers, cap engineering design and future container and closure engineering optimisation.

As part of this assessment work LLW Repository Ltd have claimed that the issues identified can be addressed by remedial actions on the containers, combined with optimised container placement and possible engineered cap modifications. On the basis of this work LLW Repository Ltd have proposed a number of actions including:

- Some immediate remedial actions (e.g. vegetation removal)
- Bringing forward capping of Vault 8 as early as possible to provide protection to the waste
- Assessing detailed engineering requirements for the cap, addressing voidage and potential waste settlement issues
- Implementing future waste acceptance criteria (WAC) to minimise void formation and settlement
- Investigating improved container designs
- Investigating vault sizing and capping strategy to minimise waste exposure
- Ongoing container inspections

This work will be taken forward by LLW Repository Ltd over the coming years alongside the development of detailed engineering specifications for the closure engineering. We are satisfied that adequate work has been undertaken in this area at this stage, but will continue to assess the adequacy of the engineering as it progresses, including inspection of closure engineering work when undertaken.

Assessment of non-radiological risks and asbestos

During our review we sought further information from LLW Repository Ltd on their approaches to assessing non-radiological risks from waste disposal, including asbestos. LLW Repository Ltd

[1] These IRF categories were explained in our first progress report in February 2012, see: www.environment-agency.gov.uk/llwr

[2] Near Surface Disposal Facilities on Land for Solid Radioactive Wastes. Guidance on Requirements for Authorisation. February 2009. Northern Ireland Environment Agency, Scottish Environment Protection Agency, Environment Agency.

provided further information which we have reviewed, we have developed our regulatory positions in this area and a workshop between the operators and the Environment Agency was held to discuss non-radiological assessment. We have concluded that LLW Repository Ltd has demonstrated that the relevant regulatory criteria within the GRA can be met and that impacts during operations will be low. However, we believe and LLW Repository Ltd acknowledge that there is scope for developing the non-radiological assessments further and will be seeking improvements over the coming years to enhance the assessments provided.

Planning permission and Article 37 of the Euratom Treaty

In addition to an Environmental Permit issued by the Environment Agency, to operate the site LLW Repository Ltd also requires planning permission from Cumbria County Council. Now that we have completed our technical review we are in a position to provide further input to the planning process.

Additionally, UK Government must seek a positive opinion from the European Commission (EC) with regards to an Article 37 submission under the Euratom Treaty. The submission must demonstrate negligible impacts on other European member states. LLW Repository Ltd is preparing an Article 37 submission on the UK Government's behalf. We will not issue an Environmental Permit to the operator until a positive opinion from the EC has been received.

Permitting process & consultation

We expect LLW Repository Ltd to submit an Environmental Permit variation application early autumn 2013 to allow further disposals of waste at the LLWR out to Vault 20, with the intent of disposing of much of the UK's LLW over the next 100 or more years. This application will be supported by the May 2011 ESC (already available on the LLWR web site: www.llwrsite.com), details of developments since the May 2011 ESC was submitted, responses to the 72 IRFs we have raised and details of their application request.

Once the application is received we will review it and prepare for consultation in line with the process outlined below. The first consultation, which will last for 12 weeks, will seek views on the application, along with LLW Repository Ltd's supporting materials, including the ESC. We will inform our statutory consultees and any other groups or individuals we believe may wish to comment when this consultation begins.

On completion of this first consultation on the application we will consider the responses received, alongside our technical review of the ESC and prepare a draft decision. We will then consult again on our draft Decision Document, supported by a draft permit, our technical review of the ESC and a habitats assessment. At this point we will welcome comments upon our draft decision on the application. Following completion of this second phase of consultation, our final decision will be based upon all the evidence available to us at that time, including consultation comments. Our decision will be documented within a Decision Document and supported by any Environmental Permit we decide to issue. Currently we estimate being able to reach a final decision towards the end of 2014[3].

Communications & engagement

The Environment Agency will be open and transparent throughout the consultation process. Although it is the responsibility of the applicant (LLW Repository Ltd) to communicate effectively with community members, groups and professional partners throughout their application process we will keep you informed of our roles and responsibilities.

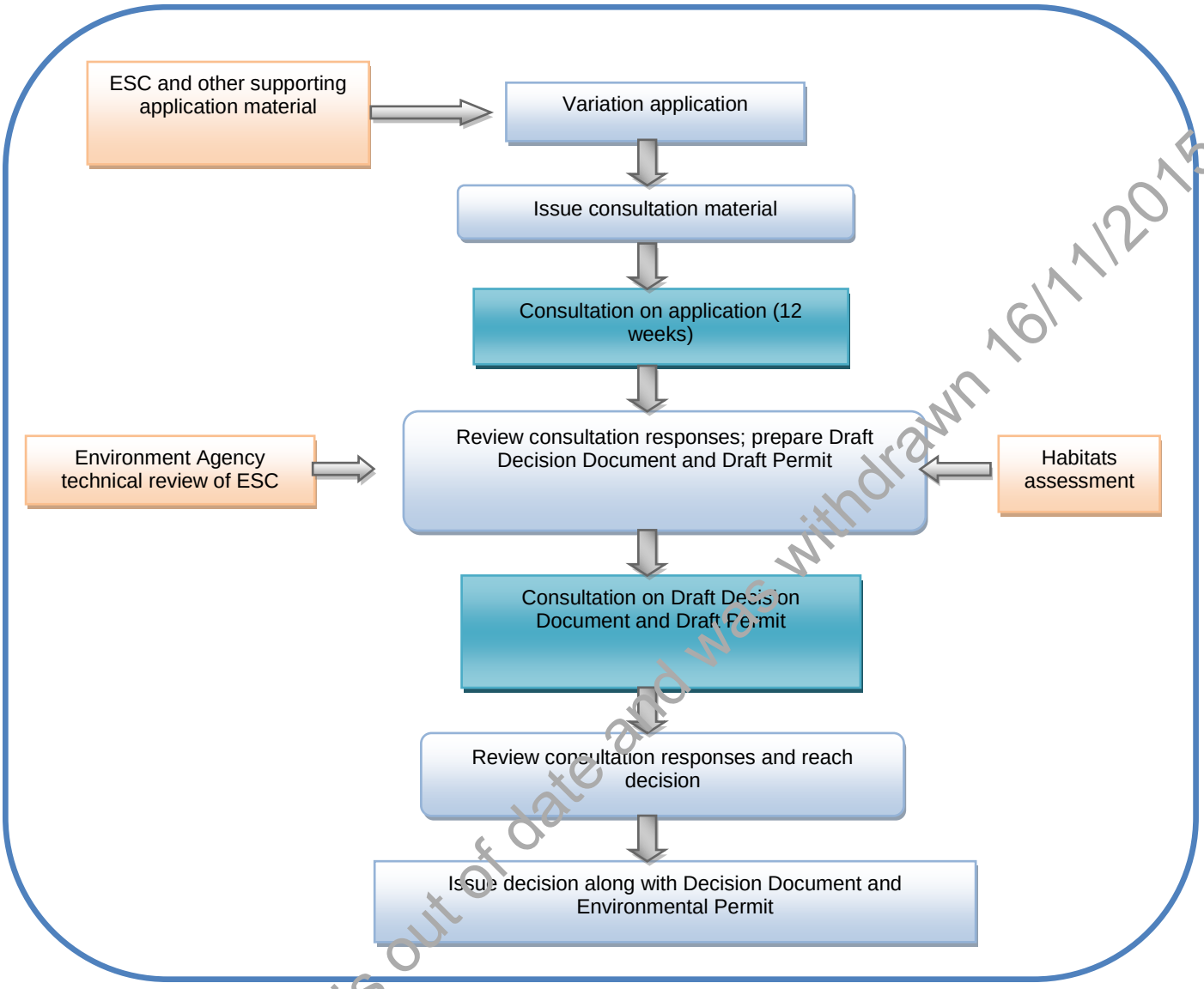
We also wish to facilitate your input to our consultation. To this end we are arranging a public drop-in session during the first consultation period where we will be available to explain our role, our review of the ESC and Environmental Permit and to answer any questions. The venue and date will be confirmed shortly and communicated, but we expect this to be held during November or December 2013, in or around Drigg. We are additionally working with our partners to arrange a further event this autumn/winter for key local and national stakeholders, to discuss key aspects of the ESC and permit application.

We continue to attend the LLWR sub-group of the West Cumbria Site Stakeholder Group and are

[3] Final timescales will be dependent upon the submission of LLW Repository Ltd's application, completion of the technical review and the scale and scope of consultation comments received.

making presentations and holding meetings with interested groups as requested.

If any individuals or groups would like to find out more about our review, we would welcome any requests for meetings or information.



Consultation process following Environmental Permit variation application

Opportunities to comment

Prior to our consultation starting we recommend that any queries with regards to the ESC are addressed to LLW Repository Ltd. Full contact details are provided on their web site at www.llwrsite.com.

When we consult upon the Environmental Permit variation application that we anticipate receiving from LLW Repository Ltd, we will communicate details of how to respond to our consultation. We will then consult again on our draft decision. We welcome any comments at these formal consultation stages; however, we will also try to answer any questions in the meantime.

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