

## REGULATORY OBSERVATION

### REGULATOR TO COMPLETE

RO unique no.:	RO-UKHPR1000-0041
Revision:	0
Date sent:	24/04/20
Acknowledgement required by:	15/05/20
Agreement of Resolution Plan Required by:	11/05/20
TRIM Ref:	2020/121535
Related RQ / RO No. and TRIM Ref: (if any):	2020/95826
Observation title:	Disposability of Higher Activity Waste from the UK HPR1000
Lead technical topic: 21. Environmental	Related technical topic(s): 17. RadWaste, Decommissioning & Spent Fuel Management

### **Regulatory Observation**

#### **Background**

The Environment Agency regulates the disposal of radioactive waste within England. We regulate the disposal of all classes of radioactive waste, from Very Low Level Waste (VLLW) and Low Level Waste (LLW) to Intermediate Level Waste (ILW) and High Level Waste (HLW) including Spent Fuel (SF).

As part of the GDA submission, the Requesting Party (RP) is required to seek advice from the Low Level Waste Repository Ltd (LLWR) and Radioactive Waste Management Ltd (RWM) with regard to the disposal of Lower Activity Wastes (LAWs) and Higher Activity Wastes (HAWs) respectively. This Regulatory Observation (RO) focuses on the disposal of HAW and SF, and in particular the submission to RWM and their subsequent advice to the RP, to ensure that all operational and decommissioning wastes that will be generated from the UK HPR1000 are likely to be disposable to a future Geological Disposal Facility (GDF).

As part of seeking this advice, the RP will submit information and data to RWM for assessment of the proposals for conditioning and packaging of HAW and SF that will be generated from the UK HPR1000. RWM will assess this information through their Disposability Assessment process known as the Letter of Compliance (LoC) [1]. The output from this assessment will also be a key input into a number of supporting documents, which have been submitted by the RP as part of their GDA submission, such as the Radioactive Waste Management Cases (RWMCs) for ILW and HLW [2,3], the Decommissioning Waste Management Proposal [4], and the Integrated Waste Strategy [5]. The Environment Agency and the Office for Nuclear Regulation (ONR) will assess these supporting documents as part of their assessment of the Pre-Construction Environmental Case (PCER) and the Pre-Construction Safety Report (PCSR) respectively. In addition, any outputs from the RWM assessment will need to be taken forward to the licensing stage, as an action plan, which will form part of the handover to a future operator of the UK HPR1000.

The Environment Agency will be writing up its assessment of the GDA submission by July 2020 in support of the planned public consultation in January 2021. In addition, the Environment Agency will be undertaking its final review of the GDA submissions at the end of April 2021 to commence preparation of the final decision document. For both stages the Environment Agency will need assurances that all wastes from the UK HPR1000 will be disposable.

Currently, the RP has submitted their disposability submission to RWM for assessment [6]. During our engagement with the relevant parties, we have noted that there appears to be a substantial risk to the RP delivering against the key dates for the Environment Agency public consultation and the final GDA review. The issues currently underlying this potential risk are that:

- The RP needs to update the data already submitted to RWM (and the regulators) for the disposability assessment, as a result of feedback from RWM;
- The need to ensure alignment of the RP's and RWM's programmes for the disposability assessment;
- The potential for significant delay in the exchange of information between the parties on SF and Non-Fuel Core Components (NFCC) during the disposability assessment, which could have an impact on the delivery dates for the Assessment Report and thus on the overall GDA review;
- To minimise any slippage the RP did not appear to have considered alternatives for delivering the assessment on a shorter timescale, such as decoupling the ILW and HLW/SF components of the assessment.

This RO has been raised to:

- Explain our regulatory expectations;
- To seek assurance that the RP and RWM plans will be aligned going forward;
- To seek assurance that the RWM submission will be updated to take account of the further engagement between CGN/GNSL and RWM;
- To highlight what we require for our public consultation review;
- To ensure that the RP is exploring all potential options to accelerate and possibly decouple components of the Disposability Assessment, where feasible;
- To highlight our requirements entering the final review stages of GDA;
- To ensure that the RP is aware of our expectations with regard to updating the key supporting documents and producing a forward action plan for addressing any outputs from RWM's assessment.

### **Relevant Legislation, Standards and Guidance**

The Environment Agency Radioactive Substances Regulation - Environmental Principles (REPs) [7] contains principles of relevance to disposability of solid waste:

- RSMDP1 Radioactive Waste Management Strategy;
- RSMDP3 Use of BAT to minimise waste;
- RSMDP14 Record Keeping;
- RSMDP15 Requirements and Conditions for Disposal of Wastes;
- DEDP5 Legacy Wastes.

The Environment Agency Process and Information Document for Generic Assessment of Candidate Nuclear Power Plant Designs [8] requires "A description of how radioactive waste and spent fuel will arise throughout the facility's lifecycle (including decommissioning) and the plans for how they will be managed and disposed of". In addition, the document also states, "A description of how the production, discharge and disposal of radioactive waste will be managed to protect the environment and to optimise the protection of people".

Our Joint Regulatory Guidance with the ONR, Scottish Environment Protection Agency (SEPA) and Natural Resources Wales (NRW) on the management of higher activity radioactive waste on nuclear licensed sites [9] states that, "For higher activity wastes, licensees will make proposals for the packaging of the wastes, and RWM will conduct disposability assessments of the proposals through comparison with published waste package specifications and their disposal concept. RWM assess licensees' packaging proposals through the Disposability Assessment process and, where additional information or safety arguments are required, issue Disposability Assessment reports containing action points. Where compliance can be demonstrated, this is recognised by RWM through issue of Letters of Compliance (LoC)". ONR's Safety Assessment Principles [10] also include a number of expectations relevant to disposability, for example, ensuring that the generation of radioactive waste of a type or form incompatible with currently available storage or disposal technology is prevented or minimised and that use should be made of appropriate, duly authorised disposal routes.

### **Regulatory Expectations**

The Environment Agency expects the following:

- The RWM submission to be updated and submitted to the regulators;
- The RP to provide the Environment Agency with a draft assessment report or if not a summary report from RWM on the current status of the Disposability Assessment, for the Environment Agency's review prior to entering public consultation. The summary report should contain the following:

- A summary of the current status of the Disposability Assessment;
- A future plan demonstrating how the final Assessment Report will be delivered on time for the Environment Agency's final review of the RP's GDA submission;
- Highlight any potential issues currently identified at that point in time by the assessment and highlight the actions that will be taken to address these.

If the RP is submitting a draft assessment report they should ensure that the information requested for the summary report is provided either along with or as part of the draft assessment report.

- The RP to explore all options with RWM for accelerating the Disposability Assessment of the UK HPR1000, for example decoupling the ILW assessment from the SF/NFCC assessment and to be confident that it has exhausted all potential opportunities to deliver against the projected plan;
- An updated plan (to be agreed with RWM) of when the RP will deliver the draft and final assessment report for the final review within GDA;
- The RP to provide a final disposability report, key supporting documents and a forward action plan to address RWM's advice on time for the Environment Agency to review as part of the final review of the RP's GDA submission;
- The RP to ensure that the Environment Agency is kept up-to-date with progress and to be informed of any future delays to the programme.

## **References**

- [1] An Overview of the RWM Disposability Assessment Process, WPS/650/03, April 2014.
- [2] UK HPR1000, Radioactive Waste Management Case for ILW, GHX00100066DNFF03GN, Revision B, Dec 2019.
- [3] UK HPR1000, Radioactive Waste Management Case for HLW, GHX00100065DNFF03GN, Revision B, Dec 2019.
- [4] UK HPR1000, Decommissioning Waste Management Proposal, GHX71500009DNFF03GN, Revision D, Nov 2019
- [5] UK HPR1000, Integrated Waste Strategy, GHX00100070DNFF03GN, Revision E, Nov 2019.
- [6] UK HPR1000, HAW Disposability Assessment Submission, GHX00100035DNFF03GN, Revision C, Nov 2019.
- [7] Environment Agency, RSR1 – Radioactive Substances Regulation - Environmental Principles (REPs), Version 2, April 2010.
- [8] Environment Agency Process and Information Document for Generic Assessment of Candidate Nuclear Power Plant Designs, Version 3, October 2016.
- [9] The management of higher activity radioactive waste on nuclear licensed sites: Joint guidance from the Office of Nuclear Regulation, the Environment Agency, the Scottish Environment Protection Agency and Natural Resources Wales to nuclear licensees, Revision 2, February 2015.
- [10] Safety Assessment Principles for Nuclear Facilities, 2014 Edition, Revision 1, January 2020, Office for Nuclear Regulation.

## ***Regulatory Observation Actions***

### **RO-UKHPR1000-0041.A1 – Update the Disposability Submission**

In response to this Regulatory Observation Action, the RP should:

- Submit to the regulators an updated HAW Disposability Assessment Submission report which takes account the further discussion and engagement that has been ongoing with CGN and RWM.

### **Resolution required by '*to be determined by General Nuclear System Resolution Plan*'**

#### **RO-UKHPR1000-0041.A2 – Produce a Delivery Plan for the Disposability Assessment**

In response to this Regulatory Observation Action, the RP should:

- Provide an updated plan, which is aligned with the RP's and RWM's programmes, once RWM has obtained all the information needed to undertake the disposability assessment. The delivery dates within the plan should be credible.

- Consider how interactions between CGN, GNSL, Framatome and RWM could be made more efficient.
- The RP should submit an updated plan to the regulators when any changes to the plan affect the completion dates for the draft and final Disposability Assessment Reports.

**Resolution required by 'to be determined by General Nuclear System Resolution Plan'**

**RO-UKHPR1000-0041.A3 – Deliver a draft Disposability Assessment Report or produce a Disposability Summary Report to meet with the Environment Agency’s public consultation timescales.**

In response to this Regulatory Observation Action, the RP should:

- Provide a copy of the draft Disposability Assessment report or a summary report of the current status of the Disposability Assessment to the Environment Agency by 6 July 2020;
- Provide the following information, if a summary report is to be produced then it should provide:
  - The current status of progress of RWM’s Disposability Assessment for all HAW and SF;
  - A forward action plan demonstrating how the RP will deliver the final assessment report before 30 April 2021;
  - A summary of any issues currently arising from the assessment, and any actions that can be taken to address these issues at the time of writing the summary report.
- If providing a draft assessment report, the report should contain the information requested for the summary report, or this should be supplied alongside the draft assessment report.
- Update the Integrated Delivery Plan.

**Resolution required by 'to be determined by General Nuclear System Resolution Plan'**

**RO-UKHPR1000-0041.A4 – Deliver the final Disposability Assessment report, key supporting documentation and a forward action plan**

In response to this Regulatory Observation Action, the RP should:

- Produce a signed final Disposability Assessment report by 30 April 2021;
- Provide all updated supporting documentation, for example the RWMCs, the Decommissioning Waste Management Proposal and any other supporting documents where the Disposability Assessment output is a key input to the relevant documents. This should be completed by 30 April 2021;
- Provide a forward action plan for addressing any issues raised by RWM within the Disposability Assessment report, with regard to the disposal of ILW (operational and decommissioning), SF and NFCC. This should be completed by 30 April 2021.

**Resolution required by 'to be determined by General Nuclear System Resolution Plan'**

**RO-UKHPR1000-0041.A5 – Update on Progress of the Disposability Assessment**

In response to the Regulatory Observation Action, the RP should:

- Invite the regulators to regular RWM engagement meetings;
- Provide updates via the Level 4 Radioactive Waste Management meetings.
- Inform the regulators of any significant delays or changes to the programme at earliest opportunity.

**Resolution required by 'to be determined by General Nuclear System Resolution Plan'**

**REQUESTING PARTY TO COMPLETE**

Actual Acknowledgement date:

RP stated Resolution Plan agreement date: