

<b>REGULATORY OBSERVATION</b>	
<b>REGULATOR TO COMPLETE</b>	
<b>RO unique no.:</b>	RO-ABWR-0070
<b>Date sent:</b>	3rd June 2016
<b>Acknowledgement required by:</b>	24th June 2016
<b>Agreement of Resolution Plan Required by:</b>	To be determined by Hitachi-GE resolution plan
<b>Resolution of Regulatory Observation required by:</b>	To be determined by Hitachi-GE resolution plan
<b>TRIM Ref.:</b>	2016/226370
<b>Related RQ / RO No. and TRIM Ref. (if any):</b>	
<b>Observation title:</b>	Discharges to surface waters
<b>Technical area(s)</b> 21. Generic Environmental Permitting	<b>Related technical area(s)</b>
<b><i>Regulatory Observation</i></b>	
<p>Non-radioactive discharges to surface waters from the UK ABWR are covered in the Other Environmental Regulations submission. The Process and Information Document (P&amp;ID) requires Requesting Parties to:</p> <p><i>“Provide a description of how aqueous waste streams will arise, be managed and disposed of...” and “include”, (amongst other things):</i></p> <ul style="list-style-type: none"> <li>• <i>“sources and quantities of contaminants (including biocides and disinfectants), highlighting priority substances;</i></li> <li>• <i>potential options and associated environmental impact for disposal of each individual effluent stream”</i></li> </ul> <p>The purpose of the detailed assessment of proposed discharges from the UK ABWR to surface waters is to establish whether sufficient information has been provided during GDA to enable a decision to be made, in principle, on the likelihood of granting a water discharge permit at the site-specific stage. This relies on sufficient information being available to characterise the UK ABWR aqueous effluent streams and assess their potential impact.</p> <p>The detailed assessment of the discharges to surface waters has been based on the information included in Revision E of the Other Environmental Regulations submission (Document GA91-9901-0027-00001). The individual aqueous effluent streams have been identified in this document; however, there is only limited information on contaminants and their quantities in the different aqueous effluent streams. There are also certain aqueous waste streams where there is no information provided on the expected volumes to be discharged.</p> <p>Based on the information provided in Revision E of the Other Environmental Regulations it is not possible to make an assessment on the likelihood of granting a water discharge permit. In order to progress with the Generic Design Assessment of the UK ABWR further information is required as specified in the Regulatory Observation Actions identified below.</p>	
<b><i>Regulatory Observation Actions</i></b>	
<b>RO-ABWR-0070.A1</b>	
<p><i>Provide information on the likely biocides to be used in the Cooling Water systems (CW, TSW &amp; RSW) and the quantities/concentrations to be released.</i></p> <p><i>Use the information to carry out an assessment on the environmental impact of biocide discharges.</i></p> <p><i>No information has been provided on the expected biocides to be used or the quantities to be released as the submission states that biocide dosing is a site-specific issue. We accept that the final choice of biocides and dosing levels cannot be decided until the environmental conditions of the particular site are known; however we would expect that Hitachi-GE would be able to provide any future operator with information on the biocides that are compatible with the design of Cooling Water systems, and typical dosing levels expected.</i></p> <p><i>Resolution required by ‘to be determined by Hitachi-GE Resolution Plan’</i></p>	

**Resolution required by: To be determined by the Hitachi-GE Resolution Plan**

**RO-ABWR-0070.A2**

*Provide information on the chemical contaminants and their quantities for the High Chemical Impurities Waste (HCW) aqueous effluent stream.*

*Use the information to carry out an assessment on the environmental impact of this discharge.*

*No information has been provided on any potential contaminants or quantities/concentrations expected in the HCW aqueous effluent stream. Although the principle is to recycle water treated from the HCW back into the process, discharges to sea do occur. It is noted that there are no direct discharges to the environment from the LCW as this aqueous effluent is treated in the HCW. Any contaminants arising from the generation of LCW should be considered as part of the HCW discharge.*

*Resolution required by 'to be determined by Hitachi-GE Resolution Plan'*

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**RO-ABWR-0070.A3**

*Provide information on the expected levels/concentrations of contaminants and volumes to be discharged of:*

1. *Boiler Blowdown*
2. *Demineraliser Plant Regeneration Effluent*

*Use the information to carry out an assessment of the environmental impact of these discharges.*

*No information has been provided on the volumes of boiler blowdown or demineraliser plant regeneration plant effluent discharged to sea.*

*Contaminants in the boiler blowdown have been identified as ammonia, as a degradation product from the use of hydrazine as deoxidiser and phosphate, used for pH control. No information has been provided on the quantities/concentrations expected to be released.*

*Sulphuric acid and sodium hydroxide have been identified as being used in the regeneration process of the ion exchange resins and will be present in the effluent discharged to sea. No information has been provided on the quantities/concentrations expected to be released.*

*Resolution required by 'to be determined by Hitachi-GE Resolution Plan'*

**Resolution required by: To be determined by the Hitachi-GE Resolution Plan**

**RO-ABWR-0070.A4**

*Provide information on the likely detergents to be used in the Laundry and the expected levels/concentration of contaminants that will be discharged.*

*Use the information to carry out an assessment of the environmental impact of these discharges.*

*Information has been provided on the volumes of detergent to be used and the expected volumes of effluent to be discharged to sea but no information has been provided on the types of detergents likely to be used. Although the final detergent choice will be a site-specific issue, information on the active ingredients should enable an assessment of the concentrations in the final effluent, and their potential impacts.*

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**RO-ABWR-0070.A5**

*Provide more detailed information on the treatment for the following waste streams:*

1. *High Chemical Impurities Waste (HCW)*
2. *Low Chemical Impurities Waste (LCW)*
3. *Laundry Drain Waste (LD)*

*The information included in the submission including that referenced in the Preliminary Safety Report on Radioactive Waste Management System Revision B (Document GA-9901-00420-00001) is very generic in terms of the treatment processes. More detailed information is required to demonstrate why these treatment processes are suitable for the non radiological contaminants of the various aqueous waste streams.*

*Resolution required by 'to be determined by Hitachi-GE Resolution Plan'*

**Resolution required by: To be determined by the Hitachi-GE Resolution Plan**

**REQUESTING PARTY TO COMPLETE**

**Actual Acknowledgement date:**

**RP stated Resolution Plan agreement date:**

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