

Hitachi-GE Nuclear Energy, Ltd.
UK ABWR GENERIC DESIGN ASSESSMENT
Resolution Plan for RO-ABWR-0055
UK ABWR Generic Site Envelope - Seismic Hazard Definition

RO TITLE:	UK ABWR Generic Site Envelope - Seismic Hazard Definition	
REVISION :	0	
Overall RO Closure Date (Planned):	10 th August 2015	
REFERENCE DOCUMENTATION RELATED TO REGULATORY OBSERVATION		
Regulatory Queries	-	
Linked ROs	-	
Other Documentation	-	

Scope of work :
<p>Background</p> <p>The Seismic Hazard Definition for the UK ABWR GDA forms an important part of the External Hazards studies and the Generic Site Envelope characterisation. This also is the primary input for the seismic analysis of the Civil Engineering structures, development of secondary response spectra and seismic qualification of SSCs within other technical disciplines.</p> <p>The Seismic Hazard Definition for the UK ABWR GDA is being developed jointly by Hitachi-GE and Horizon Nuclear Power with the latter leading on the technical development prior to formal acceptance by Hitachi-GE.</p> <p>ONR have been informed that the Wylfa-Newydd site specific probabilistic seismic hazard assessment will underpin the UK ABWR GDA seismic design spectra. Horizon is currently planning to issue its Wylfa-Newydd site-specific seismic hazard definition in July 2015. Recent feedback suggests that this analysis may not properly consider the seismicity and geology of the area, and, therefore, may not follow relevant good practice, potentially underestimating the hazard. Thus, there is a risk that ONR may not be satisfied with the submission which is intended to justify the seismic design basis for GDA.</p> <p>GDA seismic evaluations should be adequately undertaken to underpin the UK ABWR generic site envelope prior to the end of Step 3 of GDA, when the design reference point, DRP (design freeze) for the UK ABWR will be established.</p> <p>Scope of Work</p> <p>In response to this Regulatory Observation Hitachi-GE will develop new seismic design spectra for GDA which are not derived from Wylfa-Newydd site specific probabilistic seismic hazard assessment.</p>

Description of work:
<p>ACTION 1 - <i>Hitachi-GE to provide an approved report documenting the probabilistic seismic hazard assessment which will underpin the seismic spectra for the UK ABWR GDA generic site envelope, adequately taking into consideration relevant geological characteristics and relevant good practice.</i></p>

Hitachi-GE's actions:

Although Hitachi-GE developed seismic design spectra for GDA on the basis of Uniform Hazard Spectra for Wylfa site, Hitachi-GE has changed the course to develop new seismic design spectra for GDA on the basis of generic conditions of UK since the Probabilistic Seismic Hazard Assessment (PSHA) is subject to site licence. Hitachi-GE does not intend to provide an approved report documenting PSHA since the approved report originally should be submitted by Horizon.

The new GDA seismic design spectra are based on the current Hitachi-GE's idea described in the Hitachi-GE document "XL-GD-U062". The spectra will be finalised according to the schedule shown in Table 1.

ACTION 2 - *Hitachi-GE to arrange monthly L4 meetings (jointly with Horizon Nuclear Power) to inform ONR of progress on on-going seismic work undertaken to underpin the UK ABWR GDA generic site envelope.*

Hitachi-GE's actions:

Monthly L4 meetings jointly with Horizon Nuclear Power are not necessarily indispensable since Hitachi-GE intends to develop new seismic design spectra which underpin the UK ABWR generic site envelope as described in Hitachi-GE response to ACTION 1. Alternatively, Hitachi-GE will report the progress of seismic work at monthly GDA Civil Engineering and External Hazard L4 meeting. The next meeting will be held on 15th and 16th July 2015.

ACTION 3 - *If the Wylfa-Newydd site specific probabilistic seismic hazard is to be used in the Generic Site Envelope values to be adopted for the UK ABWR GDA, Hitachi-GE to provide evidence of formal review and acceptance.*

Hitachi-GE's actions:

Hitachi-GE does not use the Wylfa-Newydd site specific probabilistic seismic hazard to underpin the generic site envelope values as described in Hitachi-GE response to ACTION 1.

Summary of impact on GDA submissions:

<u>GDA Submission Document Title</u>	<u>Document ID (Document No.)</u>	<u>Related RO Actions</u>	<u>Submission Date to ONR</u>
Supporting Document on Soil and Seismic Input for Generic Site Envelope	GA91-9201-0003-00567	N/A	End of Jul. 2015

Programme Milestones/ Schedule:

See attached Gantt Chart (Table 1).

Reference:

None

Table 1 RO-ABWR-0055 Gantt Chart

UK ABWR Generic Site Envelope - Seismic Hazard Definition Resolution Plan for RO-ABWR-0055				2015															
				May				June				July				August			
Level	Action Title	Start	Finish																
1	Regulator's issue of RO	20-May-15	10-Aug-15																
1.1	ONR Issue RO	20-May-15	20-May-15																
1.2	Hitachi-GE acknowledge RO	12-Jun-15	12-Jun-15																
1.3	Hitachi-GE issue Resolution Plan	1-Jul-15	1-Jul-15																
1.4	Regulator's confirm credibility of Resolution Plan	3-Jul-15	16-Jul-15																
1.5	Regulator's publish RO and Resolution Plan	10-Aug-15	10-Aug-15																
2	Preparation of Submissions and Closure of RO Actions	23-Jun-15	30-Jul-15																
2.1	RO Action 1 and 2	23-Jun-15	30-Jul-15																
3	Regulator's Closure of RO																		
3.1	Regulators Assessment	30-Jul-15	10-Aug-15																
3.2	Regulator's publication of RO closure letter	10-Aug-15	10-Aug-15																