

**Hitachi-GE Nuclear Energy, Ltd.
UK ABWR GENERIC DESIGN ASSESSMENT
Resolution Plan for RO-ABWR-0025
Hitachi-GE Nuclear Energy Ltd. Safety Case Process
and Capability**

RO TITLE:	Hitachi-GE Nuclear Energy Ltd. Safety Case Process and Capability	
REVISION :	1	
Overall RO Closure Date (Planned):	8 th May 2015	
REFERENCE DOCUMENTATION RELATED TO REGULATORY OBSERVATION		
Regulatory Queries	-	
Linked ROs	-	
Other Documentation	-	

Scope of work :
<p>Background Hitachi-GE is required to ensure that its organisational processes, procedures and competencies for the production of safety cases are robustly developed and implemented to deliver a complete, cogent and coherently developed modern standards safety case for the UK ABWR, which is consistent across all technical areas and takes cognisance of multiple relevant interfaces. Based on ONR's initial assessment of the UK ABWR Generic Pre-Construction Safety Report (PCSR) and regulatory interactions with Hitachi-GE across different technical areas, we have identified inconsistencies amongst various and often technically complex safety case documentation, and its formulation into a coherent safety case that takes cognisance of the multiple relevant interfaces. The Safety Case comprises the PCSR, supporting documentation and references.</p> <p>Scope of Work In response to this Regulatory Observation Hitachi-GE will complete its own internal review of its arrangements and team, update its UK ABWR Safety Case Strategy, identify necessary improvement plans and implement those necessary in GDA Step.</p>

Description of work:
<p>ACTION 1 - <i>Hitachi-GE are requested to develop a documented UK ABWR Safety Case strategy that will ensure that the UK ABWR PCSR and supporting documentation meet UK regulatory expectations. This should include the following:</i></p> <ul style="list-style-type: none"> ✓ <i>Demonstration of Hitachi-GE 's understanding of the UK ABWR technical and safety case interfaces, with clear identification and definition of these and how they are being managed.</i> ✓ <i>Definition of the architecture / hierarchy of safety case documentation, demonstrating how the different levels and types of UK ABWR safety case documentation and the arguments and evidence contained therein, will be produced and linked together to cover the full scope, interactions and content of the safety case</i>

Hitachi-GE's actions:

- ✓ Hitachi-GE will continue to work closely with the Regulators to understand their expectations and develop its UK ABWR Safety Case to demonstrate relevant standards have been met and risks have been reduced to as low as reasonably practicable (ALARP) .
- ✓ Hitachi-GE has initiated its own internal review of its existing arrangements supported by recognised UK Safety Case experts. Following completion of its internal review Hitachi-GE will update its UK ABWR PCSR Development Plan (or Safety Case Development Plan) to address the requirements of this RO and findings of its own review.
- ✓ Subject to the outcome of its internal review Hitachi-GE may also revise its arrangements for preparation and control of the Safety Case.

Deliverables:

- 1) Revised Safety Case Development Plan (an internal Step 2 document) by end of February 2015.
- 2) Safety Case Manual by the end of March 2015 (which will be referenced from the Safety Case Development Plan).

ACTION 2 - *Hitachi-GE are requested to define and secure the necessary suitably qualified and experienced safety case professionals required to provide advice on and support writing of the UK ABWR safety case.*

Hitachi-GE's actions:

Hitachi-GE has established a significant team of highly experienced Hitachi-GE engineers and has completed the appointment of additional Consultant support identified in its Step 3 planning process.

As communicated through the established Level 3 project reporting Hitachi-GE has implemented specific additional enhancements :-

- ✓ Appointment of a Special Advisor (with experience in UK Safety Case) and member of the Safety Case Steering Group (SCSG) (as described below)
- ✓ Appointment of additional Consultant support in the corresponding topics areas

Resourcing in corresponding topic areas is continually reviewed and adapted to address the needs of the project and reported through the established Level 3 Project Progress reporting arrangements. As part of Hitachi-GE's internal review of the Safety Case arrangements, Hitachi-GE has established an expert Safety Case Steering Group (SCSG) and has appointed a Safety Case Consultant.

As part of its longer term strategy to develop its in-house UK Safety Case capability, Hitachi-GE has requested the proposed Safety Case Consultants undertake a training needs analysis, prepare a Training Plan and deliver this to a targeted group of Hitachi-GE engineers. The Safety Case Consultant may also provide mentoring and follow up support if required.

Deliverables:

- 1) Letter to the Regulators confirming the SCSG is operational and summary of the Consultant team supporting preparation of the Safety Case by the end of February 2015.

ACTION 3 - Hitachi-GE needs to ensure that its PCSR Safety Case Manager understands UK ABWR Technology, is conversant with UK regulatory expectations for modern standards safety cases and is adequately supported by persons with the requisite expertise in this area. The PCSR Safety Case Manager should be a clearly defined position within the Hitachi-GE organisation, as defined in Terms of Reference. This position should have the authority to direct and determine what type of safety case documentation is required, coordinate the different technical disciplines to ensure high quality and integrated safety case arguments and evidence are produced in a timely manner and documented in an adequate PCSR (Revision B) to be delivered at the end of GDA Step 3

Hitachi-GE's actions:

Hitachi-GE's Project Organisation has already established the following roles of during GDA Step 1.

- ✓ Safety Case Supervisor
- ✓ Generic Environmental Permit (GEP) Supervisor
- ✓ Conceptual Security Arrangements (CSA) Supervisor

Role descriptions and SQEP assessment has been made in accordance with corresponding GDA Project procedure SQEP Requirements for Hitachi-GE and Supplier Personnel.

As part of the review to support RO Action 1 Hitachi-GE will review the existing role profile and if necessary

- ✓ enhance the role profiles - Deliverable 1
- ✓ undertake a training needs analysis and arrange for a targeted training and mentoring programme for identified personnel throughout the project

Hitachi-GE has established a Safety Case Steering Group chaired by the Safety Case Supervisor and reporting the Engineering Director to direct and support the development of the Safety Case and provide expert advice (refer to Action 2).

The TOR for the SCSG (included in the deliverable for RO Action 2) will be provided as a deliverable for this RO Action.

Deliverables:

- 1) Letter to the Regulators describing the Role Profile for the Safety Case Supervisor and Terms of Reference (TOR) for the Safety Case Steering Group by end of February 2015.

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>
UK ABWR GDA Safety Case Development Plan	TBC	A1	End of Feb. 2015
UK ABWR GDA Safety Case Manual	TBC	A1	End of March 2015
Letter describing SCSG is operational and summary of Consultant Team	TBC	A2	End of Feb. 2015
Letter describing Role Profile of Safety case Supervisor and SCSG Terms of Reference	TBC	A3	End of Feb. 2015

Programme Milestones/ Schedule:

See attached Gantt Chart (Table 1)

Reference:

<u>Document Title</u>	<u>Document ID (Document No.)</u>	<u>Rev.</u>
GDA PCSR Development Strategy	GA91-9901-0018-00001 (XE-GD-0110)	B

Table 1 RO-ABWR-0025 Gantt Chart

UK ABWR Safety Case Process and Capability Resolution Plan for RO-ABWR-0025				2014				2015										
				September	October	November	December	January	February	March	April	May	June	July	August			
Level	Action Title	Start	Finish															
1	Regulator's issue of RO																	
1.1	ONR Issue RO	27-Nov-14	27-Nov-14															
1.2	Hitachi-GE acknowledge RO & issue Resolution Plan	5-Dec-14	9-Jan-15															
1.3	Regulator's confirm credibility of Resolution Plan	12-Jan-15	23-Jan-15															
1.4	Regulator's publish RO and Resolution Plan	26-Jan-15	30-Jan-15															
2	Preparation of Submissions and Closure of RO Actions	22-Sep-14	1-May-15															
2.1	RO Action 1 - Develop Safety Case Strategy	22-Sep-14	28-Nov-14															
2.2	RO Action 2 - Define and secure SQEP resources		27-Feb-15															
2.3	RO Action 3 - Role of UK ABWR Safety Case Manager		27-Feb-15															
3	Regulator's Closure of RO																	
3.1	Regulators Assessment	1-Feb-15	1-May-15															
3.2	Regulator's publication of RO closure letter	4-May-15	8-May-15															