

Hitachi-GE Nuclear Energy, Ltd.
UK ABWR GENERIC DESIGN ASSESSMENT
Resolution Plan for RO-ABWR-0038
Additional electrical power source

RO TITLE:	Additional electrical power source	
REVISION :	Rev.0	
Overall RO Closure Date (Planned):	27 th March 2015	
REFERENCE DOCUMENTATION RELATED TO REGULATORY OBSERVATION		
Regulatory Queries	-	
Linked ROs	-	
Other Documentation	-	

Scope of work :
<p>Background</p> <p>Hitachi-GE has modified the design of the electrical system so that the back-up building diesel generators are diverse from the safety Class 1 system. The back-up building diesel generators operate at 690V compared with the 6.9kV of the safety Class 1 system and for independence requirements have no electrical connections between the back-up building generators and the safety Class 1 system.</p> <p>On the other hand, safety analysis is currently being performed by Hitachi-GE of the requirement to provide an additional power source supporting the safety Class 1 diesel generators, and Hitachi-GE are considering a diverse power source. This resolution plan covers the activities required to conduct an analysis of the possible requirement to provide an additional power source having a safety role supporting the safety Class 1 diesel generators and to respond to RO-ABWR-0038.</p> <p>Scope of work</p> <p>Hitachi-GE conducts an analysis of the possible requirement to provide an additional power source having a safety role supporting the safety Class 1 diesel generators, and the detailed plan to reflect the resolution of the requirement for an additional power source on the design submission for GDA assessment.</p>

Description of work:

RO-ABWR-0038 Action 1 :

The RO action states that:

Hitachi-GE to conduct an analysis of the possible requirement to provide an additional power source having a safety role supporting three emergency diesel generators

Hitachi-GE will clarify the safety requirement to provide an additional power source on the assumption of failure of three emergency diesel generators (EDGs) in a LOOP event. And also, Hitachi-GE will provide an analysis of medium-term LOOP with failure of three EDGs and success of an additional power source supporting one divisional of the emergency core cooling system (ECCS).

RO-ABWR-0038 Action 2 :

The RO action states that:

If a decision is made to modify the design then Hitachi-GE to submit updated design submissions for GDA assessment of the UK ABWR electrical system following resolution of the requirement for an additional power source.

Hitachi-GE will develop suitable documentation that describes the electrical system design related to an additional power source.

- Hitachi-GE will update BSC on Electrical system. The BSC will describe claims related to the additional power source.
- Hitachi-GE will update the single line diagram to describe the electrical system configuration related to the additional power source.

Summary of impact on GDA submissions:

GDA Submission Documents (Title / Document I.D.)	Related GDA RO Actions	Submission Date to ONR	Potential Impact
Submitted Document			
Topic Report on SBO analysis / GA91-9201-0001-00114 Rev.0	Action 1	April 2015 (to submit Rev.1 as required)	To modify the safety requirement for the additional power source and add the additional analysis result as required
Generic PCSR Chapter 15 / GA91-9101-0101-15001~15008 Rev. A	Action 2	May 2015 (to submit Rev. B draft) August 2015 (to submit Rev. B)	To add the additional power source and related electrical power supply system configuration
Basis of Safety Cases on Electrical System / GA91-9201-0002-00033 Rev. draft	Action 2	April 2015 (to submit Rev. 1 draft)	To add the additional power source and related electrical power supply system configuration
Single Line Diagram (High Voltage) rev.1b	Action 2	March 2015 (to submit Rev.1)	To add the additional power source and related electrical power supply system configuration
Planned submissions			

Programme Milestones/ Schedule:

See attached Gantt Chart (Table 1).

Reference:

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