Hitachi-GE Nuclear Energy, Ltd. UK ABWR GENERIC DESIGN ASSESSMENT Resolution Plan for RO-ABWR-0012

(Presence of Single Doors on Class 1 Nuclear Safety Barriers)

RO TITLE:	Presence of Single Doors on Class 1 Nuclear Safety Barriers								
REVISION:	1								
Overall RO Closure Date (Planned):	11 Mar 2016							
REFERENCE DOCUMENTATION RELATED TO REGULATORY OBSERVATION									
Regulatory Queries	ulatory Queries RQ-ABWR-0090								
Linked ROs	-								
Other Documentation	"Philosophy for doors in safety class 1 barriers (Response to RQ-ABWR-0090)", GA91-9201-0003-00084, SE-GD-0082 Rev.0								

Scope of work:

Back ground

ONR issued Regulatory Query (RQ-ABWR-0090) regarding presence of single doors on class 1 barriers within the Reactor Building in March 2014 and Hitachi-GE responded the RQ with Engineering document (GA91-9201-0003-00084, SE-GD-0082 Rev.0). In August 2014, ONR issued RO (RO-ABWR-0012) requesting double doors where reasonably practicable. This Resolution Plan is prepared to respond the RO-ABWR-0012.

Scope of work

This Resolution Plan shows actions and milestones for preparation to provide double doors on safety class 1 barriers where reasonably practicable. This describes Hitachi-GE's current plan to address the RO-ABWR-0012.

Description of work:

RO-ABWR-0012.A1

Review the current design and use of the single doors on Class 1 nuclear safety barriers.

Hitachi-GE have broken down the above action (RO-ABWR-0012.A1) into the following three actions, which are stated in "Summary" paragraph of "Regulatory Observation" column in RO-ABWR-0012.

ACTION 1-a. Demonstrate that the number of doors on class 1 safety barriers is minimised:

Hitachi-GE will provide Rev.0 of Topic Report (SE-GD-0160), which includes:

- -Sub-claim about minimisation of number of doors on class 1 barrier
- -Argument to underpin the sub-claim
 - Identification of current doors on class 1 barrier
 - Clarification of objective of installation for each door

ACTION 1-b. Provide a second door, where reasonably practicable (for 5 representative doors on class 1 barrier in Reactor Building):

Hitachi-GE will provide Rev. 1 of Topic Report (SE-GD-0160), which includes:

- -Identification of criteria to specify the "where reasonably practicable"
- -Demonstration of the criteria with 5 representative doors
- -Sub-claim about providing a second door, where reasonably practicable
- -Argument to underpin the sub-claim
 - Considerations of :
 - > Space for installing a second door
 - ➤ Weight of door on class 1 barrier that may compromise evacuation if it is doubled
 - ➤ Consequence of hazard source in the generated lobby space
 - ➤ Installation of alarm system for door on class 1 barrier that is not doubled

ACTION 1-c. Provide a second door, where reasonably practicable (for all doors on class1 barrier in Reactor Building):

Hitachi-GE will provide Rev.2 of Topic Report (SE-GD-0160), which includes:

- -Sub-claim about providing a second door, where reasonably practicable
- -Argument to underpin the sub-claim
 - Considerations of :
 - > Space for installing a second door
 - ➤ Weight of door on class 1 barrier that may compromise evacuation if it is doubled
 - > Consequence of hazard source in the generated lobby space
 - > Installation of alarm system for door on class 1 barrier that is not doubled
 - Revised layout drawing

ACTION 1-d.For the remaining single doors, engineer local and remote alarms and provide a robust justification in line with the relevant good practice established in the UK:

Hitachi-GE will provide Rev.1 of Topic Report (SE-GD-0160), which includes:

-Conceptual alarm system

Hitachi-GE will provide Rev.2 of Topic Report (SE-GD-0160), which includes:

- -Sub-claim about alarm for remaining single doors and robustness of the alarm system
 - Robust justification for the alarm system

Summary of impact on GDA submissions:

GDA Submission Document Submission Date to ONR

Topic Report of Doors on Class 1 Barrier (SE-GD-0160) Rev.0 16 January, 2015 Topic Report of Doors on Class 1 Barrier (SE-GD-0160) Rev.1 24 April, 2015

Topic Report of Doors on Class 1 Barrier (SE-GD-0160) Rev.2 11 December, 2015

Programme Milestones/ Schedule:

See attached Gantt Chart (Table 1).

Reference:

[Ref-1] "Generic PCSR Chapter 7: Internal Hazards" (GA91-9101-0101-07000, SE-GD-0127 Rev A)

[Ref-2] "Presence of single doors on safety Class 1 hazards barriers within the Reactor Building" (RQ-ABWR-0090)

[Ref-3] "Philosophy for doors in safety class 1 barriers (Response to RQ-ABWR-0090)"

(GA91-9201-0003-00084, SE-GD-0082 Rev.0)

Table 1 RO-ABWR-0012 Gantt Chart

		2014					2015												2016				
		August	August September October		November	December	January	February	March	April	May	June	July	August	September	October	November	December	January	Februar	y Mar	March	
		4 11 18 2	5 1 8 15 22 2	29 6 13 20 27	3 10 17 24	1 8 15 22 29	5 12 19 26	3 2 9 16 2	2 9 16 23	30 6 13 20 2	13 20 27 4 11 18 25	1 8 15 22 29	6 13 20 27	7 3 10 17 24	31 7 14 21 2	8 5 12 19 26	2 9 16 23 3	0 7 14 21 28	4 11 18 25	1 8 15 2	22 29 7 14	21 2	
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Regulator's Issues of RO																				I			П
.1 ONR issue of RO	15-Aug-14	15-Aug-14																					
1.2 Hitachi-GE acknowledge RO	15-Aug-14	8-Sep-14				1: 1		\perp 1 1 L	1 1 3	:				1 1 1	1 3 1		1 1 1	3			1 1		1
1.3 Hitachi-GE suggest draft Resolution Plan	5-Sen-14	8-Oct-14			1111		7777					1.1.1.1.		1			1.1.1.1.1.1.1			1.1.1.1.	1 3 1 1 3		
1.4 Hitachi-GE issue Resolution Plan	14-Oct-14																			T			П
1.5 Regulator's confirm credibility of Resolution Plan	4-Nov-14	1-Dec-14											7-1-1-1-1-1	1	7-1-1-1-1		1			1			7
1.6 Regulator's publish RO and Resolution Plan	2-Dec-14	5-Dec-14		1.1					1.1.1.1.				1	T 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1-1-1-1-1				111111	1			-7
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Preparation of Submission Documentation					1111		7777					1.1.1.1.		1			1.1.1.1.1.1.1		TTTT	1.1.1.1.	1 3 1 1 3		- 1
2.1 Action 1-a. Minimise the Number of Class 1 Barrier Doors	13-Oct-14	14-Nov-14							1			1		1			1				3.1.3	7	7
.2 Action 1-b. Provide Double Doors (for 5 class 1 barrier doors)	17-Nov-14	10-Apr-15	1 1 1							3 3 3				1 1 1 1	1 1 1			1 1 1 :	1 1 1				T
2.3 Action 1-c Provide Double Doors (for all class 1 barrier doors)	18-May-15	23-Oct-15								1 : 1 : 1	1111			T 11 11 11 11 11 11 11 11 11 11 11 11 11						1	1 1 1 1		-71
2.3 Action 1-d. Provide alarm system and demonstrate the robustness	20-Oct-14	23-Oct-15		1.1																1	1 1 1		-
2.4 Documentation of Analysis report (Action 1-a, 1-b and 1-d (Concept))	17-Nov-14	10-Apr-15		-11									1	1.1.1.1.					7-1-1-1-	1	1	1	7
2.5 Documentation of Analysis report (Action 1-c, 1-d)	6-Jul-15	11-Dec-15																					7
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Regulator's Closure of RO		1		1-1-1-1-1	111111					1		1-1-1-1		1-1-1-1			1-1-1-1-1		11111	111111	1 1 1 1		1-
3.1 Regulator's Assessment (Action 1-a, 1-b)	19-Jan-15	15-May-15	1												1				1111				7
.1 Regulator's Assessment (Action 1-c, 1-d)	14-Dec-15	12-Feb-16	1-1-1-1	1-1-1-1			-1-1-1-1-								7-1-1-1-						1		-1
.2 Regulator's publication of RO closure letter	14-Dec-15 15-Feb-16	11-Mar-16	1-1-1-1	1-1-1-1-1			-1-1-1-1-		1-1-1-1-	1		1-1-1-1-1	1-1-1-1-1-1	1777	1-1-1-1-		1-1-1-1-1		1 1 1 1 1	1	1		7
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