REGULATORY OBSERVATION

REGULATOR TO COMPLETE

RO unique no.:	RO-ABWR-0026
Date sent:	1st December 2014
Acknowledgement required by:	22nd December 2014
Agreement of Resolution Plan Required by:	23rd December 2014
Resolution of Regulatory Observation required by:	To be determined by the Hitachi-GE Resolution Plan
TRIM Ref.:	2014/440065
Related RQ / RO No. and TRIM Ref. (if any)**:**	
Observation title:	Back-up Building C & I
Technical area(s) 6. Control & Instrumentation	**Related technical area(s)** 5. Fault Studies 11. Mechanical Engineering 7. Electrical Power Supply

Regulatory Observation

Summary

The back-up building (BuB) has an important role in the safety of the UK ABWR. Its original role was to provide diverse support for beyond design basis accident sequences and severe accident sequences. Recent work on fault studies has shown that that the BuB also requires to cover a class of infrequent design basis events. The scope of the functional safety role of the control and instrumentation (C&I) proposed for the BuB is fully covered in Revision A of the UK ABWR PCSR. The purpose of this regulatory observation is to provide Hitachi-GE with guidance on ONR's expectations for the safety justification of the BuB C&I.

Background

The reference design for the UK ABWR has evolved with the addition of a BUB, which is a major enhancement to the design. The role of the BuB is to keep the reactor and spent fuel pool safe from a wide range of accident sequences. The original role described for the BuB was to provide safety functions for beyond the design basis accident sequences and severe accident sequences. However recent work on fault studies design basis accidents involving postulated initiating events coincident with common cause failure of the claimed class 1 safety systems have revealed that the BuB is required to perform safety functions for this class of events.

Rev A of the UK ABWR PCSR has only limited information on the C&I for the safety systems proposed for the back-up building. Similarly the PCSR doesn't cover the new safety functions from the group of infrequent design basis faults described in the previous paragraph that will require support from the BuB. ONR's expectation is that the C&I controlling the safety functions developed in response to infrequent faults design basis faults, beyond the design basis faults and severe accidents located in the BuB should be fully described in the PCSR Chapter 14 and its supporting references.

There are close links between this RO and that on the topic of the hardwired back-up system.

Regulatory Observation Actions

RO-ABWR-0026.A1

Provide a high level description in Chapter 14 of the C&I located in the Back-up Building including good references to the derivation of the plant safety functions in the accident analysis chapters.

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

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Provide a Basis for Safety Case with supporting references on the Back-up building C&I.

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:	