Office for Nuclear Regulation

An agency of HSE

Redgrave Court Merton Road Bootle Merseyside L20 7HS
Tel: 0151 951 4000 www.hse.gov.uk/nuclear

WESTINGHOUSE AP1000® GENERIC DESIGN ASSESSMENT

GDA ISSUE

SAFETY CASE FOR SHUTDOWN FAULTS

GI-AP1000-FS-07 REVISION 0

Technical Area	**FAULT STUDIES**		
Related Technical Areas	None		
GDA Issue Reference	**GI-AP1000-FS-07**	**GDA Issue Action Reference**	**GI-AP1000-FS-07.A1**
GDA Issue	Westinghouse is required to provide a fully integrated design basis safety case for shutdown faults in the PCSR. The safety case for shutdown faults needs to be reflected in and supported by the Fault Schedule, also to be reported in the PCSR.		
GDA Issue Action	Westinghouse is required to provide a fully integrated design basis safety case for shutdown faults in the PCSR. The safety case for shutdown faults needs to be reflected in and supported by the Fault Schedule, also to be reported in the PCSR. An acceptable design basis safety case for shutdown faults requires Westinghouse to provide more than is currently presented in the EDCD and the response to RO-AP1000-54 (UKP-GW-GL-077 Rev 0). Shutdown faults need to fully integrated into the PCSR. If the available at-power design basis analyses (i.e. the thermal hydraulic analysis, radiological consequences and claims on SSCs) are assumed to bound or apply to shutdown faults then this needs to be clearly stated in the PCSR, justified as necessary, and initiating fault frequencies updated accordingly. Fault sequences which are significantly different in terms of consequences or claims on SSCs from their at-power equivalents need to be considered separately, but with the full rigour expected for design basis analysis (i.e. SAPs FA.4 to FA.9). This includes consideration of limiting single failures, demonstration of diversity for frequent faults and discussion of the consequences. It is expected that the worst normally permitted (under Tech Specs) configuration of equipment should be clearly stated for faults in each applicable shutdown mode in accordance with SAP FA.6. Faults during refuelling modes of operation need to be covered in the PCSR. The safety case for RNS pipe breaks outside of containment needs to be completed with arguments, transient analysis, design change proposals etc. presented in and referenced from the PCSR as necessary. The safety case for shutdown faults needs to be reflected in and supported by the Fault Schedule, also to be reported in the PCSR. With agreement from the Regulator this action may be completed by alternative means.		