

WESTINGHOUSE AP1000® GENERIC DESIGN ASSESSMENT

GDA ISSUE

COMPLIANCE OF AP1000 MAIN STRUCTURAL COMPONENTS WITH ASME III DESIGN RULES

GI-AP1000-SI-05 REVISION 0

Technical Area		STRUCTURAL INTEGRITY	
Related Technical Areas		MSQA	
GDA Issue Reference	GI-AP1000-SI-05	GDA Issue Action Reference	GI-AP1000-SI-05.A1
GDA Issue	Provide evidence to show that the design of the Main Structural Vessels is compliant with the ASME III code.		
GDA Issue Action	<p>Support the assessment of Westinghouse's response to ONR's findings on the AP1000 Stress Analysis.</p> <p>The review of the reactor pressure vessel report identified a number of areas where it was unclear why specific assumptions and approximations had been made. In their response to this review Westinghouse justified these. The review of the pressuriser report identified errors in the calculations for the safety relief nozzle however a revision of this report was in preparation during ONR's review; this corrected all the main errors.</p> <p>The response to the comments on the reactor pressure vessel report and the revision of the pressuriser report were both supplied too late for ONR to undertake a full assessment of these documents within GDA step 4.</p> <p>Activities by Westinghouse should comprise:</p> <ul style="list-style-type: none"> • Provide adequate responses to questions arising from ONR assessment of documents submitted during GDA Step 4 or in response to this Action. <p>With agreement from the Regulator this action may be completed by alternative means.</p>		

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Technical Area		STRUCTURAL INTEGRITY	
Related Technical Areas		None	
GDA Issue Reference	GI-AP1000-SI-05	GDA Issue Action Reference	GI-AP1000-SI-05.A2
GDA Issue Action	<p>Provide evidence that there will not be similar errors elsewhere in the design support documentation.</p> <p>ONR have identified errors on a sample review of the design calculations. The calculations were verified and issued, and referred to within the GDA submissions, but not approved as the formal issue (Rev 0) of the report. In this circumstance the formal issue of the report corrected the errors in the calculational route of 'design by rule', and in this case, even if error had not been detected, the design was still secure because the design route 'design by analysis' had also been followed. Nevertheless, since a sample review identified significant errors in a verified document, evidence is required to demonstrate that the process in raising design reports to Rev 0 is sufficiently robust to ensure that errors missed by the author and verifier of the earlier revisions will be reliably detected.</p> <p>Activities by Westinghouse should comprise:</p> <ul style="list-style-type: none"> • Provide evidence that the process for raising verified documents to Revision 0 is sufficiently robust.. • Provide adequate responses to any questions arising from assessment by ONR of the response <p>With agreement from the Regulator this action may be completed by alternative means.</p>		