

**WESTINGHOUSE AP1000® GENERIC DESIGN ASSESSMENT**  
**POTENTIAL GDA ISSUE**  
**STRUCTURAL INTEGRITY CATEGORISATION AND CLASSIFICATION**  
**GI-AP1000-SI-06 REVISION 0**

<b>Technical Area</b>		<b>STRUCTURAL INTEGRITY</b>	
<b>Related Technical Areas</b>		None	
<b>GDA Issue Reference</b>	<b>GI-AP1000-SI-06</b>	<b>GDA Issue Action Reference</b>	<b>GI-AP1000-SI-06.A1</b>
<b>GDA Issue</b>	Provide evidence to show that categorisation and classification has been applied in an appropriate manner to components with an important structural integrity claim.		
<b>GDA Issue Action</b>	<p>Provide evidence to show that the principal design and construction codes adopted for Class 2 Pressure Equipment and Storage Tanks are consistent with ONR's expectations as detailed within the SAPs, particularly ECS.3 and supporting paragraphs 157-161. In particular, where non-nuclear Pressure Equipment and Storage Tank design and construction codes are used in the design of Class 2 components Westinghouse will need to fully justify each case to show the arguments and evidence which support the use on non-nuclear codes. The arguments and evidence should take account of:</p> <ul style="list-style-type: none"> <li>• the safety significance of the component;</li> <li>• the demands that are placed on the system in terms of loadings, fatigue, temperature etc, and;</li> <li>• the consequences of failure of pressure boundary in terms of both the loss of system function and on the Internal Hazards safety case.</li> </ul> <p>With agreement from the Regulator this action may be completed by alternative means.</p>		

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<b>Related Technical Areas</b>		None	
<b>GDA Issue Reference</b>	<b>GI-AP1000-SI-06</b>	<b>GDA Issue Action Reference</b>	<b>GI-AP1000-SI-06.A2</b>
<b>GDA Issue Action</b>	<p>Provide evidence to show that components in AP1000 Equipment Class C have been assigned a class that is consistent with their intended duty and implied reliability. In particular Westinghouse need to provide arguments and evidence to show why its is appropriate to design and construct the Accumulator Tanks in the Passive Core Cooling System to ASME III Class 3 when previous designs of reactor would have designed and constructed the Accumulators to ASME III Class 2 in line with the guidance provided in ANS-51.1-1983. The arguments and evidence should address:</p> <ul style="list-style-type: none"> <li>• the intended duty and implied reliability of the vessel, and;</li> <li>• provide evidence to justify why the AP1000 design has apparently downgraded the classification of the core cooling system from the criteria set in ANS-51.1-1983.</li> <li>•</li> </ul> <p>With agreement from the Regulator this action may be completed by alternative means</p>		

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<b>Related Technical Areas</b>		None	
<b>GDA Issue Reference</b>	<b>GI-AP1000-SI-06</b>	<b>GDA Issue Action Reference</b>	<b>GI-AP1000-SI-06.A3</b>
<b>GDA Issue Action</b>	<p>Provide arguments and evidence to show that catastrophic failure of a reactor coolant pump bowl would not challenge the effectiveness of the vertical support for the Steam Generator.</p> <p>The reactor coolant pump bowl has been assigned a Standard Class 1 structural integrity classification. It will be designed and constructed to ASME III, but this is not sufficient in its own right to discount the possibility of gross failure. As a result it is necessary to address the consequences of failure of the pump bowl.</p> <p>Due to the proximity of the reactor coolant pump bowl to the Steam Generator vertical support it is not obvious that failure of the support can be discounted as not credible without sufficient evidence.</p> <p>Thus Westinghouse will need to provide the evidence that the effectiveness of the Steam Generator vertical support will not be challenged by the failure of the pump bowl in order to support the assignment of a Standard Class 1 structural integrity classification for the pump bowl.</p> <p>With agreement from the Regulator this action may be completed by alternative means</p>		