

# Office for Nuclear Regulation

An agency of HSE

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**WESTINGHOUSE AP1000® GENERIC DESIGN ASSESSMENT**  
**GDA ISSUE**  
**INTERNAL EXPLOSION SAFETY CASE SUBSTANTIATION**  
**GI-AP1000-IH-04 REVISION 0**

Technical Area		INTERNAL HAZARDS	
Related Technical Areas		None	
GDA Issue Reference	GI-AP1000-IH-04	GDA Issue Action Reference	GI-AP1000-IH-04.A1
GDA Issue	Provide substantiation to support claims and arguments made within the area of internal explosion.		
GDA Issue Action	Provide substantiation of the safety case for explosion within Battery Rooms. This should include consideration of a multi-legged argument associated with the following: <ul style="list-style-type: none"><li>• Potential hydrogen accumulation rates during normal and fault conditions.</li><li>• Consideration of heating, ventilation, and air conditioning (HVAC) systems.</li><li>• Hydrogen detection.</li><li>• Engineered protection systems associated with the cessation of battery charging.</li><li>• Civil structures in place to prevent propagation of a hydrogen explosion to redundant trains of protection. Administrative controls or procedures presented as risk mitigation.</li></ul> The list above should not be considered to be exhaustive and the items detailed above are provided as a means to inform Westinghouse of my expectations. With agreement from the Regulator this action may be completed by alternative means.		

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Technical Area		INTERNAL HAZARDS	
Related Technical Areas		None	
GDA Issue Reference	GI-AP1000-IH-04	GDA Issue Action Reference	GI-AP1000-IH-04.A2
GDA Issue Action	<p>Provide substantiation of the safety case for the routing of the hydrogen pipework within areas containing Class 1 SSCs. This should include consideration of a multi-legged argument associated with the following:</p> <ul style="list-style-type: none"> <li>• Potential hydrogen accumulation rates during normal and fault conditions.</li> <li>• Consideration of heating, ventilation, and air conditioning (HVAC) systems.</li> <li>• Hydrogen detection.</li> <li>• Civil structures in place to prevent propagation of a hydrogen explosion to redundant trains of protection.</li> <li>• Administrative controls or procedures presented as risk mitigation.</li> </ul> <p>The list above should not be considered to be exhaustive and the items detailed above are provided as a means to inform Westinghouse of my expectations.</p> <p>With agreement from the Regulator this action may be completed by alternative means.</p>		