

EDF AND AREVA UK EPR GENERIC DESIGN ASSESSMENT
GDA ISSUE
IDENTIFICATION & SUBSTANTIATION OF HUMAN BASED SAFETY CLAIMS
GI-UKEPR-HF-01 REVISION 0

Technical Area		HUMAN FACTORS	
Related Technical Areas		Probabilistic Safety Assessment Internal Hazards Fault Studies	
GDA Issue Reference	GI-UKEPR-HF-01	GDA Issue Action Reference	GI-UKEPR-HF-01.A1
GDA Issue	Inadequate substantiation of human based safety claims and omission of a consolidated Human Factors safety case for the UK EPR		
GDA Issue Action	<p>Substantiate the UK EPR human based safety claims. It is the expectation of ONR that all human based safety claims are considered along with supporting holistic arguments for key elements of the proposed UK EPR design and operation.</p> <p>It will be necessary to complete the identification of UK EPR human based safety claims. Human based safety claims may also result from safety analysis undertaken in related technical areas; principally Internal Hazards and Fault Studies. It will not be sufficient to only consider claims currently modelled in the PSA.</p> <p>All identified actions should be sentenced; however it will not be necessary to fully analyse in detail all individual claims. Our expectation is that the substantiation is both targeted and proportionate; recognising the human contribution to overall risk. Sentencing may employ an initial risk based screening of actions, but consideration should also be given to task complexity and novelty, and to UK EPR specific issues. In particular the response should include:</p> <ul style="list-style-type: none"> • Substantiation of the Type A and B human failure events (HFEs). <ul style="list-style-type: none"> - Submit a methodology for the substantiation of Type A and Type B. - Complete the identification of Type A HFEs. - Substantiate the identified Type A HFEs on the basis of system contribution to overall risk, and proportionate contribution of human error to system unavailability. The selection of actions and sample size should be substantiated. - Substantiate the identified Type B HFEs and justify any sampling of actions. • Substantiate the Type C HFEs . <ul style="list-style-type: none"> - Advise ONR of any amendments to the methodology for the substantiation of Type C HFEs and highlight how it accommodates violation potential. - Identify additional human based safety claims arising from safety analysis 		

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	<p>undertaken in response to GDA Issues in related technical areas.</p> <ul style="list-style-type: none"> - Provide targeted and proportionate substantiation of identified human actions. The sample size and type should be justified. • Provide holistic arguments for key elements of the proposed UK EPR operation. <ul style="list-style-type: none"> - Provide arguments and evidence to support the claim that the State Orientated Approach and Automatic Diagnosis reduces misdiagnosis potential; - Provide arguments and evidence relating to situations with failed Automatic Diagnosis; and - Consider whether other holistic arguments / evidence are required to support the safety case for Human Factors. • Provide analytical evidence on how the design of the UK EPR prevents and mitigates violation potential. <ul style="list-style-type: none"> - Submit a methodology for the substantiation of Type A and Type B HFES that accommodates consideration of violation potential; - Provide additional evidence on how the UK EPR design prevents / mitigates violation potential <p>With agreement from the Regulator this action may be completed by alternative means.</p>		

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Related Technical Areas		Probabilistic Safety Assessment Internal Hazards Fault Studies	
GDA Issue Reference	GI-UKEPR-HF-01	GDA Issue Action Reference	GI-UKEPR-HF-01.A2
GDA Issue Action	Provide a consolidated HF safety case and PCSR update for the UK EPR. EDF and AREVA should provide an updated PCSR submission that presents the overall HF safety case for the UK EPR. This should include and integrate the various submissions stemming from work undertaken during GDA and that related to action GI-UKEPR-HF-01.A1. With agreement from the Regulator this action may be completed by alternative means.		