
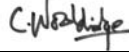


UK EPR	UK EPR GDA PROJECT			
	Title: Resolution Plan for GI-UKEPR-EE-01			
	RP unique number: GI-UKEPR-EE-01-RP	Revision No.: 0	Effective Date: 27/06/2011	Page No.: 1 of 5
Approved for EDF by: A. PETIT		Approved for AREVA by: C. WOOLDRIDGE		
Name/Initials	 Date 23/06/2011	Name/Initials	 Date 24/06/2011	

Resolution Plan Revision History

Rev.	Description of update	Date issued
0	First issue	27/06/2011

1.0 GDA ISSUE

GDA Issue Title	Main Assessment Area	Related Assessment Area
PCSR presentation of claims, arguments and evidence	Electrical	

GDA Issue	Provide a revised PCSR containing the requisite claims, arguments and evidence to substantiate the design of the plant electrical distribution system. The claims made for the electrical system need to be related to the overall safety claims for the plant.
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2.0 OVERVIEW OF SCOPE OF WORK

ONR considers that the current PCSR Sub-chapters 8.1 to 8.6 provide a descriptive overview of the electrical distribution systems but do not adequately substantiate that the design of electrical distribution systems meets safety requirements. ONR's expectations are that the PCSR should provide a rigorous justification for the completeness of the electrical power distribution system to perform its safety role and to provide this substantiation by a set of claims, arguments and evidence.

ONR has further detailed their expectations as follows:

1. The claims made for the electrical system need to be related to the overall safety claims for the plant.
2. The PCSR needs to provide a clear justification of the safety of the EPR electrical distribution system.
3. The safety claims made need to be clear and unambiguous.
4. Evidence should be based on documents that are produced during GDA.

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3.0 GDA ISSUE ACTIONS AND RESOLUTION PLAN DELIVERABLES

3.1 Action GI-UKEPR-EE-01.A1

Action I/D	Action Description
GI-UKEPR-EE-01.A1-	<p>Provide a revised PCSR Chapter 8 to substantiate the design of the complete plant electrical distribution system. This needs to incorporate a structure of claims, arguments and evidence in a narrative and / or tabular form of a supporting document to demonstrate that the electrical system fully meets the requirements of its safety role as specified in the other chapters of the PCSR.</p> <p>ONR's expectations are that the PCSR should provide a rigorous justification for the completeness of the electrical power distribution system to perform its safety role.</p> <p>It has been agreed with EDF and AREVA, from the early stages of this project, that this would be done in the PCSR by establishing the claims, arguments and evidence chain of reasoning. This requirement has been consistently presented to EDF and AREVA and comments have been made by ONR on presentations made by EDF and AREVA on the presentation of the safety case for the electrical distribution system.</p> <p>Within Step 4 EDF and AREVA have presented two example sections of the revised PCSR covering common cause failure and equipment qualification. These do not meet ONR expectations which are that:</p> <ul style="list-style-type: none"> • The PCSR needs to provide a clear justification of the safety of the EPR electrical distribution system. • The safety claims made need to be clear and unambiguous. • The arguments and evidence presented in support of the safety claims are well presented. In particular evidence should be based on documents that are produced during GDA, not on documents that are to be produced during site licensing. • Presentation of other sections of the PCSR will not be adequate if the format demonstrated in the example sections is maintained. <p>With agreement from the Regulator this action may be completed by alternative means.</p>

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3.1.1 Planned submissions in response to GI-UKEPR-EE-01.A1

3.1.1.1 Description of Scope of Work

In response to this action EDF/AREVA will produce a CAE (Claims, Arguments and Evidence) document that identifies the claims made for the electrical system and includes CAE tables that present the arguments and evidence for each claim.

PCSR Sub-chapters 8.1 to 8.6 will be updated to adapt their wording to refer to this CAE document.

In addition, a CAE Approach report will be produced as a first deliverable that will contain and expand on the information detailed in section 3.1.1.1.1.

Progress meetings with ONR will be held throughout 2011 to discuss resolution of the GDA Issue. Intermediate draft CAE tables will be presented during these meetings to enable ONR to give a progressive feedback along with the GDA issue resolution. A closure meeting will be scheduled following submission of the main deliverables in November 2011.

CAE Approach Report

This report will contain the following:

1. **A description of the information that will be provided in the CAE document, comprising;**
 - The objectives of the CAE document and its relationship to the PCSR Chapter 8;
 - An outline of the different elements that together constitute the CAE structure;
 - The methodology (adoption of a hierarchical approach, identification of claims, development of arguments and identification of evidence);
 - An illustration / explanation of the format used to present the Claims;
 - An illustration / explanation of the format used to present the CAE tables;
 - The way in which reference is made to: (a) specific supporting documents (by identifier), and (b) future material, e.g. documents giving the results of further analyses, tests etc.

2. **A description of the changes that will be made to the PCSR Chapter 8, comprising;**
 - How the linkage (cross-referencing) will be achieved to the supporting CAE document;
 - The methodologies that will be used - where already discussed and agreed during the GDA process;
 - A table showing other changes to be made to the PCSR as a result of the points raised by ONR on the PCSR Chapter 8 and agreed in principle at the 12/04/2011 topic meeting.

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3. Specific examples of the material that will form part of the CAE document, comprising;

- The 'Key and Sub Claims' A3 sheets;
- The CAE tables addressing the 'Common Cause Failure' topic;
- The CAE tables addressing the 'Qualification' topic;
- The CAE tables addressing the 'Design Robustness' topic.

4. Specific examples of changes to be made to the PCSR Chapter 8, comprising;

- Draft text for inclusion in the PCSR Chapter 8 referring to the supporting CAE document;
- Draft text for inclusion in one relevant section of the PCSR Chapter 8 giving a description of the methodology that will be used to generate the evidence behind an argument where application of the methodology can only be undertaken subsequent to the GDA.

Note: The material described under items 3 & 4 will be included as Appendices to the report.

CAE Document

This will be developed as described in the CAE Approach Report (see item 1 of 3.1.1.1.1 above). It will include the identification and the substantiation of all the Claims, as well as the potential impact from this process on the specific examples provided in the first deliverable (see item 3 of 3.1.1.1.1).

Draft Update of the PCSR Chapter 8

This will be developed as described in the CAE Approach Report (see item 2 of 3.1.1.1.1 above) and will comprise an updated version (with tracked changes) of those sections of the PCSR Chapter 8 affected by the cross-referencing to the CAE document and inclusion of other material, as agreed.

3.1.1.2 Description of Methodology to be employed

The definition of a list of key and sub claims and the presentation of clear claims, arguments and evidence in a safety report complies with the objective SC4 of the Safety Assessment Principles "A safety case should be accurate, objective and demonstrably complete for its intended purpose:

- to link the information necessary to show that the facility is adequately safe, and what will be needed for it to remain so over the period for which the safety case is valid;
- to support arguments with appropriate evidence, and with experiment and/or analysis that validates performance assumptions;
- to accurately reflect the proposed activity and the reality of the facility and its systems;
- to identify surveillance, maintenance and inspection programs to underpin operational

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assumptions in the case.

3.1.1.3 Deliverable description

Submission date to ONR

CAE Approach report, containing:-

10/06/2011

- A description of the information that will be provided in the form of a CAE document,
- A description of the types of changes that will be made directly to the PCSR Chapter 8,
- The 'Key and Sub Claims' A3 sheets (to become part of the CAE document),
- The CAE tables addressing the 'Common Cause Failure', the "Qualification" and the "Design Robustness" topics (to become part of the CAE document),
- Examples of two specific types of changes that will be made to the PCSR Chapter 8.

CAE Document, which develops the information described in the CAE Approach report and presents the list of claims identified for the electrical system and the CAE tables for all such claims. 28/10/2011

Draft updates of PCSR Sub-chapters 8.1 to 8.6 issue 4 (to be implemented in March 2012 issue) 28/10/2011

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4.0 SUMMARY OF IMPACT ON GDA SUBMISSION DOCUMENTATION

4.1 GDA submission documents impacted by GDA Issue and scheduled to be created (C) or updated (U) within GDA

GDA Submission Documents	C/U	Related GDA Issue Action(s)	Submission Date to ONR
<p>SSER sub-chapters</p> <p>PCSR Sub-chapter 8.1 "External Power Supply",</p> <p>PCSR Sub-chapter 8.2 "Power Supply to the Conventional Island and the Balance Of Plant",</p> <p>PCSR Sub-chapter 8.3 "Nuclear Island Power Supply",</p> <p>PCSR Sub-chapter 8.4 "Specific Design Principles",</p> <p>PCSR Sub-chapter 8.5 "Installation",</p> <p>PCSR Sub-chapter 8.6 "Prevention and Protection against Common Cause Failure", UKEPR-0002-086 Issue 00</p> <p>* Draft documents will be sent to HSE by 28/10/2011</p>	<p>U</p> <p>U</p> <p>U</p> <p>U</p> <p>U</p> <p>U</p>	<p>GI-UKEPR-EE-01.A1</p>	<p>21/12/2011*</p>
<p>GDA reference design documents (SDM in UKEPR-I-002)</p> <p>None</p>			
<p>Other GDA submission supporting documents</p> <p>CAE Document, which presents the list of claims identified for the electrical system and the CAE tables for all such claims (level 2 document to be referenced in above PCSR Sub-chapters).</p>	<p>C</p>	<p>GI-UKEPR-EE-01.A1</p>	<p>28/10/2011</p>

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5.0 JUSTIFICATION OF ADEQUACY

The deliverables submitted under this plan will provide a clear set of Claims, Arguments and Evidence for the electrical systems in a clear relationship to the overall safety claims for the plant. Accordingly, these deliverables will allow for the PCSR to provide clear justification of the safety claims of the UK EPR electrical distribution system and provide evidence that the electrical systems of the UK EPR have been robustly designed for the associated claims.

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6.0 TIMETABLE AND MILESTONE PROGRAMME LEADING TO THE DELIVERABLES

See GI-UKEPR-EE-01 Schedule - Annex 1 to Resolution Plan.

GI-UKEPR-EE-01 Schedule - Annex 1 to Resolution Plan.xls.mpp

ID	Task Name	Duration	Beginning	End	Mar '11	Apr '11	May '11	Jun '11	Jul '11	Aug '11	Sep '11	Oct '11	Nov '11	Dec '11	Jan '12																	
					2	0	1	2	2	0	1	2	2	0	0	1	2	2	0	1	2	2	0	1	2	2	0	1	2	2	0	1
1	Progress Meetings HSE/EA - EDF/AREVA	167 days	Tue 12/04/11	Wed 30/11/11	[Gantt bar from Tue 12/04/11 to Wed 30/11/11]																											
2	Progress Meeting 1	1 day	Tue 12/04/11	Tue 12/04/11	[Task bar from Tue 12/04/11 to Tue 12/04/11]																											
3	Progress Meeting 2 (ONR feedback on Approach CAE doc)	1 day	Wed 29/06/11	Wed 29/06/11	[Task bar from Wed 29/06/11 to Wed 29/06/11]																											
4	Progress meeting 3 (intermediate CAE tables presentation)	1 day	Thu 21/07/11	Thu 21/07/11	[Task bar from Thu 21/07/11 to Thu 21/07/11]																											
5	Progress meeting 4 (intermediate CAE tables presentation)	1 day	Thu 01/09/11	Thu 01/09/11	[Task bar from Thu 01/09/11 to Thu 01/09/11]																											
6	Progress meeting 5 (draft complete CAE tables presentation)	1 day	Tue 11/10/11	Tue 11/10/11	[Task bar from Tue 11/10/11 to Tue 11/10/11]																											
7	Progress meeting 6 (End ONR assessment before end Nov)	1 day	Wed 30/11/11	Wed 30/11/11	[Task bar from Wed 30/11/11 to Wed 30/11/11]																											
8	Action 1 - Approach Report	79 days	Thu 10/03/11	Tue 28/06/11	[Gantt bar from Thu 10/03/11 to Tue 28/06/11]																											
9	Draft CAE tables	20 days	Thu 10/03/11	Wed 06/04/11	[Task bar from Thu 10/03/11 to Wed 06/04/11]																											
10	Integration ONR feedback + creation Approach Report	42 days	Wed 13/04/11	Thu 09/06/11	[Task bar from Wed 13/04/11 to Thu 09/06/11]																											
11	Submission to ONR	0 days	Fri 10/06/11	Fri 10/06/11	[Task bar from Fri 10/06/11 to Fri 10/06/11]																											
12	ONR review	12 days	Mon 13/06/11	Tue 28/06/11	[Task bar from Mon 13/06/11 to Tue 28/06/11]																											
13	Action 2 - Complete CAE Document	108 days	Wed 22/06/11	Fri 18/11/11	[Gantt bar from Wed 22/06/11 to Fri 18/11/11]																											
14	CAE tables of 2nd list of claims	18 days	Wed 22/06/11	Fri 15/07/11	[Task bar from Wed 22/06/11 to Fri 15/07/11]																											
15	ONR review	3 days	Mon 18/07/11	Wed 20/07/11	[Task bar from Mon 18/07/11 to Wed 20/07/11]																											
16	CAE tables for 3rd list of claims	20 days	Mon 18/07/11	Fri 12/08/11	[Task bar from Mon 18/07/11 to Fri 12/08/11]																											
17	ONR review	13 days	Mon 15/08/11	Wed 31/08/11	[Task bar from Mon 15/08/11 to Wed 31/08/11]																											
18	Draft complete CAE Document	22 days	Mon 05/09/11	Tue 04/10/11	[Task bar from Mon 05/09/11 to Tue 04/10/11]																											
19	Submission final document to ONR	0 days	Fri 28/10/11	Fri 28/10/11	[Task bar from Fri 28/10/11 to Fri 28/10/11]																											
20	ONR review	15 days	Mon 31/10/11	Fri 18/11/11	[Task bar from Mon 31/10/11 to Fri 18/11/11]																											
21	Action 3 - Update of PCSR Sub-chapters 8.1 to 8.6	83 days	Mon 29/08/11	Wed 21/12/11	[Gantt bar from Mon 29/08/11 to Wed 21/12/11]																											
22	Draft updates of sub-chapters	27 days	Mon 29/08/11	Tue 04/10/11	[Task bar from Mon 29/08/11 to Tue 04/10/11]																											
23	Submission of draft to ONR	0 days	Fri 28/10/11	Fri 28/10/11	[Task bar from Fri 28/10/11 to Fri 28/10/11]																											
24	ONR review	15 days	Mon 31/10/11	Fri 18/11/11	[Task bar from Mon 31/10/11 to Fri 18/11/11]																											
25	Finalisation of PCSR chapter(s)	22 days	Tue 22/11/11	Wed 21/12/11	[Task bar from Tue 22/11/11 to Wed 21/12/11]																											
26	Submission of final update of PCSR chapter(s)	0 days	Wed 21/12/11	Wed 21/12/11	[Task bar from Wed 21/12/11 to Wed 21/12/11]																											

Project: GDAI Resolution Plan Schedu Date: Thu 23/06/11	Task		Milestone		External Tasks	
	Split		Summary		External Milestone	
	Progress		Project Summary		Deadline	

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