
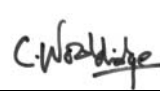


UK EPR	UK EPR GDA PROJECT			
	Title: Resolution Plan for GI-UKEPR-RP-01			
	RP unique number: GI-UKEPR-RP-01-RP	Revision No.: 0	Effective Date: 30/06/2011	Page No.: 1 of 5
Approved for EDF by: A. PETIT		Approved for AREVA by: C. WOOLDRIDGE		
Name/Initials	 Date 30/06/2011	Name/Initials	 Date 30/06/2011	

Resolution Plan Revision History

Rev.	Description of update	Date issued
0	First revision	30/06/2011

1.0 GDA ISSUE

GDA Issue Title	Main Assessment Area	Related Assessment Area
Radiological Zoning and Bulk Shielding	Radiological Protection	Civil Engineering

GDA Issue	Radiological zoning for restriction of exposure to ionising radiation of workers is fundamental to the design of the nuclear island, and bulk shielding is inextricably linked with civil engineering aspects of that design. The radiological zoning classification scheme underpinned by design shielding calculations is not referenced in the GDA submission for the UK EPR design.
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2.0 OVERVIEW OF SCOPE OF WORK

ONR considers that the arguments presented in the current GDA EPR PCSR to justify the adequacy of the shielding included in the generic design are not sufficient.

EDF and AREVA have submitted methodologies of radiation protection studies and radiation protection guidelines, and have provided samples of calculations in the Reactor Building and Fuel Building. However, ONR requests that the arguments presented in the PCSR Chapter 12.3 should be supplemented by additional information in a supporting overview document as a direct reference from the PCSR.

The overview document in turn will reference to supporting calculations and design detail to substantiate the claims and arguments made in the PCSR.

The FA3 EPR bulk shielding is the GDA reference for the UK EPR bulk shielding, although some amendments to radiological zoning in other areas is expected during Phase 2 licensing to take account of future operators' requirements. During the meeting between ONR and the RP on 14 December 2010, ONR was shown the radiological zoning classification scheme for the FA3 EPR and high-level summary shielding substantiation documentation for parts of the nuclear island.

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ONR's view is that radiological zoning for restriction of exposure to ionising radiations of workers is fundamental to the basic design of the UK EPR.

The evidence that is required for GDA is as follows.

1. A radiological zoning classification scheme for the nuclear island (Reactor, Fuel, Safeguard and Auxiliary Buildings) for the UK EPR GDA reference design should be submitted.
2. The shielding calculations for the UK EPR GDA reference design to ensure adequate bulk shielding provided by nuclear island construction concrete should be completed.

3.0 GDA ISSUE ACTIONS AND RESOLUTION PLAN DELIVERABLES

3.1 Action GI-UKEPR-RP-01.A1

Action I/D	Action Description
GI-UKEPR-RP1.A1	<p>Provide an overview document that supplements the claims and arguments presented in the PCSR Chapter 12.3 with additional information on the radiological zoning classification scheme for the nuclear island, including dose rate criteria and predictions for all modes of plant operation, for occupied areas as a direct reference from the PCSR.</p> <p>A radiological zoning classification scheme should be provided to demonstrate that there is adequate shielding provision for all areas of the facility. This should be presented as an overview document that provides information / documentation which summarises the dose rates and radiological classifications within all rooms and for all modes of plant operation (for example, power operation, outages, refuelling). The document should include information / documentation on the Reactor Building, Fuel Building, Safeguard Building, and Auxiliary Building.</p> <p>The overview document should summarise the results of shielding calculations to show that the predicted dose rates within each area of the plant meet the radiological classification. The response should, as a minimum, summarise the following information for each room of the facility:</p> <ul style="list-style-type: none"> • Room descriptor and number / designation. • Radiological classification (namely dose rate criteria). • Dose rate prediction(s) for each room giving the maximum dose rate present during all modes of operation (for example, power operation, outages, refuelling). • Reference to shielding assessments / calculations containing data regarding the assumed radiation sources, shielding provisions and calculated dose rates. <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-RP-01.A1

3.1.1.1 Description of Scope of Work

EDF and AREVA will issue by July 2011 a first version of an overview document presenting the radiation protection zoning of the EPR nuclear island (Reactor, Fuel, Safeguard and Auxiliary Buildings) with the following information:

- Room descriptor and number / designation.
- Radiological classification (namely dose rate criteria).
- Dose rate prediction(s) for each room giving the maximum dose rate present during all modes of operation (for example, power operation, outages, refuelling).
- Reference to shielding assessments / calculations from Flamanville 3 containing data regarding the assumed radiation sources, shielding provisions and calculated dose rates.

A progress meeting about ONR feedback will be held at the beginning of October 2011:

- Identification of rooms for a sampling assessment,
- Questions on the overview document and on the calculation notes.

The answers to all ONR questions will be provided by EDF and AREVA by mid January 2012 (letters, supporting references or parts of supporting references requested by ONR).

A draft update of impacted PCSR Sub-chapter 12.3 will be sent by end November 2011.

An update of the overview document and the final version of the updated PCSR Sub-chapter 12.3 will be sent by end March 2012.

Out of scope of work: specific UK EPR calculation documents will be performed during Nuclear Site Licensing.

3.1.1.2 Description of Methodology to be employed

The overview document will be a completion of existing information from the radiation calculations performed on the EPR Flamanville 3.

This document will be classed as level 2 information as a direct reference from PCSR Sub-chapter 12.3 and will be included in the UK EPR GDA Submission Master List. It will include drawings of the different levels of the nuclear island, with colours attributed to each room and corresponding to the radiation classification of the room. The drawings will be completed by tables giving the name and the maximum dose rate of each room. If calculations were performed for different states of the plant (power, outage...), the maximum dose rate for each state will be given. The information given in the overview document will be supported by references to calculation notes and study notes for the EPR Flamanville 3 (level 4 information in French language).

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3.1.1.3 Deliverable description

Submission date to ONR

First version of an overview document of the radiation protection zoning of the EPR Flamanville 3 nuclear island (Definitive title and reference to be defined, see contents in section 3.1.1.1).

15/07/2011

Responses to ONR's questions:

- Letters,
- transmission of an extract of a supporting reference if necessary,
- transmission of a supporting reference if necessary.

Final responses / submissions by
13/01/2012

Update of the overview document (following final versions of supporting calculation notes)

23/03/2012

Update of PCSR Sub-Chapter 12.3 "Radiation Protection Measures" (Revision 04 of UKEPR-0002-123)

Draft on 30/11/2011,
Final on 30/03/2012

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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
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SSER sub-chapters

Update of PCSR Sub-Chapter 12.3 "Radiation Protection Measures"

U

GI-UKEPR-RP-01.A1

Draft on 30/11/2011,
Final on 30/03/2012

GDA reference design documents (SDM in UKEPR-I-002)

None

Other GDA submission supporting documents

Overview document of the radiation protection zoning of the EPR Flamanville 3 nuclear island (Definitive title and reference to be defined)

C

GI-UKEPR-RP-01.A1

First version 15/07/2011,
update by 23/03/2012

U

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5.0 JUSTIFICATION OF ADEQUACY

EDF and AREVA agreed to provide in the overview document all details requested by the GDA Issue (see paragraph 3.1.2). This document will collect information from existing calculation notes and study notes for the EPR Flamanville 3 which is the GDA reference design for the UK EPR.

The values of dose rate in each nuclear island room will show the adequacy of EPR shielding in nuclear island construction concrete.

In addition, the sampling assessment of rooms will validate the methodology of calculation notes.

6.0 TIMETABLE AND MILESTONE PROGRAMME LEADING TO THE DELIVERABLES

Consult the following page for the associated timetable and milestone programme.

ID	Task Name	Duration	Start	Finish	Apr '11	May '11	Jun '11	Jul '11	Aug '11	Sep '11	Oct '11	Nov '11	Dec '11	Jan '12	Feb '12	Mar '12	Apr '12																																			
					2	2	4	1	1	2	2	9	1	2	3	6	1	2	3	4	1	1	2	1	8	1	2	5	1	1	2	3	1	1	2	3	7	1	2	5	1	1	2	2	9	1	2	3	6	1	2	5
1	Progress Meetings HSE/EA - EDF/AREVA	135 days	Fri Oct 7, '11	Thu Apr 12, '12																																																
2	Progress Meeting 1 - Feedback on overview document	1 day	Fri Oct 7, '11	Fri Oct 7, '11																																																
3	Progress meeting 2 - Feedback on supporting notes	1 day	Fri Feb 24, '12	Fri Feb 24, '12																																																
4	Meeting - Closure	1 day	Thu Apr 12, '12	Thu Apr 12, '12																																																
5	Action 1 - Overview document	249 days	Mon Apr 11, '11	Fri Mar 23, '12																																																
6	Creation of first version	60 days	Mon Apr 11, '11	Fri Jul 1, '11																																																
7	Transmission to ONR	0 days	Fri Jul 15, '11	Fri Jul 15, '11																																																
8	ONR review	60 days	Fri Jul 15, '11	Thu Oct 6, '11																																																
9	EDF AREVA Answers, translation of supporting notes	67 days	Mon Oct 10, '11	Tue Jan 10, '12																																																
10	Transmission to ONR	0 days	Fri Jan 13, '12	Fri Jan 13, '12																																																
11	ONR review	30 days	Fri Jan 13, '12	Thu Feb 23, '12																																																
12	Update of the overview document	50 days	Wed Jan 11, '12	Tue Mar 20, '12																																																
13	Submission	0 days	Fri Mar 23, '12	Fri Mar 23, '12																																																
14	Action 2 - Impact on PCSR Sub-Chapter 12.3	124 days	Mon Oct 10, '11	Fri Mar 30, '12																																																
15	Update	38 days	Mon Oct 10, '11	Wed Nov 30, '11																																																
16	Submission of draft update	0 days	Wed Nov 30, '11	Wed Nov 30, '11																																																
17	ONR review	30 days	Thu Dec 1, '11	Wed Jan 11, '12																																																
18	Finalisation of PCSR Sub-chapter 12.3 (issue impact)	21 days	Fri Feb 24, '12	Fri Mar 23, '12																																																
19	Submission of updated PCSR Sub-chapter 12.3 (including other impacts)	0 days	Fri Mar 30, '12	Fri Mar 30, '12																																																

Project: GI-UKEPR-RP1 Schedule - An
Date: Fri Jul 1, '11

Task Progress Summary External Tasks Deadline
 Split Milestone Project Summary External Milestone