





UK EPR GDA PROJECT – INSTRUCTION				
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REVISION HISTORY

Rev	Description	Date
00	First issue.	24/10/07
01	Clarifications and additions in the text and in Annex 1.	08/11/07
02	Consistency of documents identification and date of issue between the list in Annexe 1 and the .pdf files. Clarification in the text. "SDD" replaced by "SDM". Addition of Annex 2 giving the modifications taken into account in PCSR Step 3 and not in the current revision of SDMs.	24/11/08
03	Updated with the "end 2008 Design Freeze"	30/01/09
04	Annex 1: Correction of erroneous systems names and doc revisions - English polishing of systems names	13/03/09
05	Addition of main technical requirements assumed for GDA and correction of typos in systems names and doc references.	30/11/09
06	Update to account for : - RCCA design modification.(§7.1 and Appendix 3): CMF013 - I&C architecture modification (Appendix 3): CMF014 & CMF015 - Doors control measures modification (Appendix 3): CMF016	19/12/09
07	Update to account for: - CMF 17 : SG and PZR Material - 20MND5 (Appendix 3) - Addition of general unit characteristics (Section 7.1) - Addition of soil conditions (Section 7.2) - Correction of SDMs versions and references (EVR and LJP)	16/04/10

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08	<p>Update to account for:</p> <ul style="list-style-type: none"> - CMF 18 – Liner Floor Anchorage (Appendix 3) - Addition of Codes considered in UK EPR design (Section 7.1) - Correction of PTR P3 revision index 	21/07/10
09	<ul style="list-style-type: none"> - Further precisions on normal operation doses (introduction of SAPs Target 1) (§7.2) - Addition of a column with the SDM impacted by UK EPR CMF in annexes 2 and 3 (In accordance with HSE request during the 21/09/2010 inspection) - Removal of CMF002 and CMF003 from annex 2 list since stage 3 completed (changes completely implemented in the GDA documentation) 	26/10/10
10	<p>Modification of introductory purpose and context sections.</p> <p>Addition of §5 – Out of Scope Items</p> <p>Addition of further information in §4 on main NSSS components, Control and Instrumentation and Civil Engineering design.</p> <p>Modifications of documents in Annex 1 list according to updated submission tracking sheet</p> <p>Addition in Annexes 2 and 3 of CMFs status and Status of INSA Review</p> <p>Update of Annex 3 to account for:</p> <ul style="list-style-type: none"> - CMF 22 Functional classification F1B of KRT-RES activity detection channels - CMF 23 Additional reactor trips to SAS I&C system - CMF 24 RO 43 – Impact of Classification on SSCs - CMF 25 Automatic Actuation of EBS on low SG pressure in 1 SG - CMF 26 Class 1 Information and Controls in MCR and RSS (QDS) - CMF 27 Safety Information and Control System Class Upgrade (class 1) - CMF 28 Monophasic Start Up Mode 	18/05/11
11	<p>Update of Section 5.0 with ONR comments (addition of cross cutting out of scope items)</p> <p>Addition of sections 4.5 and 4.6</p> <p>Update of annex 3 – Design Change status</p>	12/09/11
12	Update of Section 3.1.4 – Design codes	12/05/12

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	<p>Update of sections 4.3 and 4.4</p> <p>Update of Appendix 1 (corrections of dates,</p> <p>Update of Appendix 2 and Appendix 3 (addition of new column, update with new applicable design changes)</p>	
13	<p>Update of section 2.0 (ONR comments)</p> <p>Update of section 3.1.2 in line with PCSR</p> <p>Updated of sections 4.3 and 4.5</p> <p>Minor updates (corrections) of Appendix 1</p> <p>Update of Appendix 2 and Appendix 3 (update with new applicable design changes)</p>	04/09/12
14	<p>Update of Regulator agencies in Section 2</p> <p>Update of Section 4 and 4.1 text to include clarifications on design reference, expectations and reference to SDM specification</p> <p>Minor updates to Section 4.3 and 4.4 tables</p> <p>Update to Section 4.5 text describing expectation of classification methodology</p> <p>Update to Section 4.6 and inclusion of new Section 4.7 regarding Fukushima and associated lessons learned.</p> <p>Update to Out of Scope table, specifically part 16 and 18 to clarify GDA outcomes.</p> <p>Annex 1 – insertion of new clarifying note</p> <p>Annexes 2 and 3 – insertion of new clarifying notes along with general update to address ONR/EA comments and reflect CMF status, scope, impact, etc.</p>	03/12/12
15	<p>Section 4.1 and Annex 2 and 3 – Update of revision of Specification for SDMs update post GDA (UKEPR0019-001 Issue 01) and Handover document for GDA design changes (UKEPR0020-001 Issue 01)</p>	06/12/12

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1.0 PURPOSE

The purpose of this document is to define for the UK Generic Design Assessment (GDA):

- Main technical requirements for the UK EPR design submitted to GDA,
- UK EPR Reference Design Configuration supporting the GDA submission, including any applicable design changes,
- Out-of-scope items for GDA.

The reference design configuration defined in this instruction is the baseline for the UK EPR GDA design change management process.

2.0 CONTEXT

EDF and AREVA are seeking regulatory design acceptance for the EPR in the UK through the Generic Design Assessment (GDA) process devised by the UK nuclear regulators, the Office for Nuclear Regulation (ONR) and the Environment Agency (EA).

The UK EPR reference design submitted for the GDA process is based on the Flamanville 3 (FA3) reference plant under construction in France. This design reference was frozen at the end of 2008 and has since been amended by a small number of design changes originated by EDF/AREVA on the basis of FA3 project feedback and improvements from other EPR projects, or resulting from the GDA assessment itself. All changes to the GDA reference design are controlled via the GDA change management process described in GDA project instruction UKEPR-I-003.

ONR has issued generic guidance defining the process by which it will carry out its generic safety assessment of new designs of Nuclear Power stations in the UK. Similarly EA has developed a Process and Information (P&I) document which it will use to undertake a detailed assessment of generic design matters associated with discharges and wastes produced by new designs of Nuclear Power stations.

The regulators conduct their assessments using a step-wise approach with the assessments becoming increasingly detailed at each step. At the end of each step reports are published, which provide an update on the detailed technical assessment undertaken by the nuclear assessors. The ONR has organised their assessment in four steps, while the Environment Agency's process consists of a preliminary and detailed assessment followed by a consultation. At the end of the GDA process, ONR will issue a Design Acceptance Confirmation (DAC) and EA will issue a Statement of Design Acceptability (SoDA) if they are satisfied that the proposed design is acceptable for build in the UK.

The UK EPR GDA submission is presented in a Safety, Security and Environmental Report (SSER) and supporting documentation. The SSER has been developed and detailed in a series of editions in accordance with the step-wise GDA process.

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This SSER comprises three main documents:

- A **Pre-Construction Safety Report (PCSR)** presenting the GDA safety submission for assessment by ONR. The PCSR presents a detailed description of the architecture of the EPR systems, their safety functions and reliability and availability requirements, and an explanation of the design codes and standards that have been used in the design. Detailed fault analyses are presented including Design Basis Analyses, Severe Accident Analyses and Probabilistic Safety Analyses. The objective of the PCSR is to demonstrate that sufficient analysis and engineering substantiation has been performed to give high confidence that the EPR design meets its declared safety objectives.
- A **Pre-Construction Environmental Report (PCER)** presenting the GDA environmental submission which provides the information requested by the Environment Agency in its guidance Process and Information (P&I) Document as the basis for their detailed assessment of the UK EPR environmental impact.
- A **Conceptual Security Arrangements (CSA)** document presenting the security submission requested in the ONR GDA guidance document. The CSA contains Sensitive Nuclear Information and is a security classified document.

Note on the evolving FA3 design:

The FA3 reference plant design (and associated design documents) are evolving continuously during the construction phase of that project. FA3 design changes are reviewed by the GDA project and considered for applicability to the UK EPR reference design. Only changes listed in this UK EPR reference design document are applicable to UK EPR.

The UK EPR reference was globally aligned at the beginning of Step 3 with the FA3 status via a controlled “end 2008 design freeze”. During Step 4 of GDA (after “end 2008 design freeze”), FA3 changes have been considered on a selective, case by case basis via the GDA change management process described in GDA project instruction UKEPR-I-003.

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3.0 MAIN TECHNICAL REQUIREMENTS ASSUMED FOR GDA

This section provides the main technical requirements considered for the UK EPR design submitted into the GDA process.

3.1 Performance

3.1.1 General performance data

Topic / Feature	UK EPR GDA reference	Comments
Thermal power	4,500 MWth	
Net electrical power	1,600-1,660 MWe	Depending on heat sink temperature and cooling mode
Design life time for non replaceable components (Reactor vessel & building)	60 years	
Fuel cycle	UO ₂ , 12 to 22 months, up to 5% enrichment,	No use of MOX is claimed for GDA, technical capability is described in the safety case for information only.
Fuel assembly	Reference assembly is AFA-3G Maximum fuel rods burnup =62 GWd/tU (corresponding to maximum Fuel Assembly burnup of 58 GWd/tU)	FS1-000096 (Dec 08) – AFA 3GLE Fuel Assembly for the EPR reactor FS1-0000607 3.0- Nuclear Fuel specification and justification of design & safety criteria Subject to fuel cycle choice
Control Rod type	Black rods	FFDC05182 B – RCCAs description, functional requirements and material properties
Spent fuel storage capacity (fuel building)	> 4.5 x full core capacity	
Outages (all figures relate to 18 months cycles):		Related assumptions for maintenance in operation:

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Topic / Feature	UK EPR GDA reference	Comments
. Regular for loading	11 days	For one safeguard train < 14 days
. Part inspection	16 days	For all safeguard trains : 28 days
. Ten yearly inspection	40 days	Inside the Reactor Building : 7 days before & 3 days after outage
Extended Low Power Operation	30 days at 30%FP	
Load follow	Light load follow: between 60%NP and 100%NP at max speed of 5%NP/min Deep load follow: between 25% and 60%NP at max speed of 2.5%NP/min	For burnup rate < 80% (max speed to be defined for higher BU) No use of load-follow is forecast, technical capability is described in the safety case for information only. This may be amended in later phases according to potential National Grid requirements

3.1.2 Grid Interface

Topic / Feature	UK EPR GDA reference	Comments
LOOP frequency	Short term : 6.10E-2 / yr Long term : 10E-3 / yr	EUR 2.4.1.10
Connection scheme	Independent auxiliary feeding	
Operation range . Frequency . Terminal bus bar voltage	47-52 Hz -/+ 5%	Limitation in time to be proposed to National Grid (NG)
Voltage control	N/A	TBC: consistency with NG expectations about stability in incidental situations (voltage dips, short circuits on the grid)

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Topic / Feature	UK EPR GDA reference	Comments
Frequency control	N/A	Normal operation is at Limited Frequency Sensitive Mode (no frequency control, constant power output)
Special operation		
. House load capability	Yes	Not requested by NG
. Islanded network	No	Requested by NG

3.1.3 Layout

Topic / Feature	UK EPR GDA reference	Comments
General Plant characteristics	Single Unit / direct cooling design	This derives from the “cold sea-shore” EPR substandard. See also §7.2

3.1.4 Design Codes

Topic / Feature	UK EPR GDA reference	Comments
RCC-M	2007 ed.	Complemented by FM 1060 introduced via CMF 17
RCC-E	2005 ed.	
ETC-C	AFCEN ETC-C – 2010 Edition ENGSGC110015 D (2012)	UK EPR – GDA – UK Companion Document to AFCEN ETC-C
ETC-F	ENGSIN050312 B (2007)	EPR Technical Code for fire protection

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3.2 Safety

3.2.1 Radiological and Risk Objectives

Topic / Feature	UK EPR GDA requirements	Comments																				
ALARP principle	Yes	By UK law (HSWA 74), the radiation doses to workers and the general public, under normal and postulated accident conditions, must be as low as reasonably practicable.																				
Risk of individual on-site worker's fatality due to radiation exposure in case of accident	< 10 ⁻⁶ /year	SAP numerical target 5																				
Risk incurred by members of the public due to radiation exposure in case of accident	<p>SAP numerical targets 7, 8 and 9</p> <p>. SAP 7: Risk of fatality of any person off-site <10⁻⁶/year</p> <p>. SAP 8:</p> <table border="1" style="margin-left: 20px;"> <thead> <tr> <th rowspan="2" style="text-align: center;">Effective Dose (mSv)</th> <th colspan="2" style="text-align: center;">Total Frequency (Per Year)</th> </tr> <tr> <th style="text-align: center;">Broadly Acceptable Risk</th> <th style="text-align: center;">Maximum Tolerable Risk</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">0.1 - 1.0</td> <td style="text-align: center;">10⁻²</td> <td style="text-align: center;">1</td> </tr> <tr> <td style="text-align: center;">1.0 – 10</td> <td style="text-align: center;">10⁻³</td> <td style="text-align: center;">10⁻¹</td> </tr> <tr> <td style="text-align: center;">110 – 100</td> <td style="text-align: center;">10⁻⁴</td> <td style="text-align: center;">10⁻²</td> </tr> <tr> <td style="text-align: center;">100 – 1000</td> <td style="text-align: center;">10⁻⁵</td> <td style="text-align: center;">10⁻³</td> </tr> <tr> <td style="text-align: center;">>1000</td> <td style="text-align: center;">10⁻⁶</td> <td style="text-align: center;">10⁻⁴</td> </tr> </tbody> </table> <p>As a generation 3+ reactor, EPR design objectives are expected to be consistent with 'broadly acceptable' risk levels taking into account ALARP justification.</p> <p>. SAP 9:</p> <p>Total risk of 100 or more fatalities, either immediate or eventual, from on-site accidents < 10⁻⁷/year</p>		Effective Dose (mSv)	Total Frequency (Per Year)		Broadly Acceptable Risk	Maximum Tolerable Risk	0.1 - 1.0	10 ⁻²	1	1.0 – 10	10 ⁻³	10 ⁻¹	110 – 100	10 ⁻⁴	10 ⁻²	100 – 1000	10 ⁻⁵	10 ⁻³	>1000	10 ⁻⁶	10 ⁻⁴
Effective Dose (mSv)	Total Frequency (Per Year)																					
	Broadly Acceptable Risk	Maximum Tolerable Risk																				
0.1 - 1.0	10 ⁻²	1																				
1.0 – 10	10 ⁻³	10 ⁻¹																				
110 – 100	10 ⁻⁴	10 ⁻²																				
100 – 1000	10 ⁻⁵	10 ⁻³																				
>1000	10 ⁻⁶	10 ⁻⁴																				

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Topic / Feature	UK EPR GDA requirements	Comments
Design basis (PCC) and design extension accidents (RRC-A) consequences	No necessary countermeasure to protect the population.	The proposed numerical targets (Effective d.< 10 mSv Thyroid d. < 100 mSv) should envelop the objectives of no evacuation, no need for sheltering and no need for distribution of iodine tablets. Restrictions on food consumption should not be excluded.
Severe accidents (RRC-B) consequences	Limited need of countermeasures to protect the population	<p>'Limited' is intended in area and in time:</p> <ul style="list-style-type: none"> •limited sheltering duration for the public, •no need for emergency evacuation beyond immediate vicinity of the plant, •no permanent relocation, •no long term restriction on consumption of foodstuffs.
<p>Normal operation</p> <p>. Doses to individual worker</p> <p>. Collective Dose to workers on-site</p>	<p>. annual whole body equivalent dose < 20mSv</p> <p>. annual average effective dose < 10 mSv</p>	<p>SAP Numerical Target 1</p> <p>SAP Numerical Target 2</p>

3.2.2 General External Hazards

Topic / Feature	UK EPR GDA reference	Comments
According to the SAPs, the design basis events should cover a predicted frequency of once in 10,000 years. In addition consideration should be paid to cliff-edge effects, typically up to once in 100,000 years where relevant (no disproportionate increase in radiological consequences).		
Earthquakes	EUR spectrum set at 0.25g	Zero period horizontal acceleration
Soil Conditions	EUR spectra Soft/Medium/Hard	EUR Vol 2 Ch 4 Section 2.4.1.2.1 and 2.4.6

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Topic / Feature	UK EPR GDA reference	Comments
Extreme weather: . Max air temperatures . Min air temperatures . Max heat sink water temp . Min heat sink water temp . Snow & Wind . Rain . lightning	Daily: 36 °C Inst: 42 °C Perm.: -15 °C 7 days:-25 °C Inst.: - 35 °C 26 °C 0 °C (Rivers / cooling towers -0.5°C for sea water Eurocode 1 1.3 & 1.4 Yes IEC 62305-1 to 4	Provision for climate change is generally addressed (roughly: end of 21 st century) but may be partly or not reflected by the figures quoted beside. Actually, the assessment of possible changes to the plant or its operation may be part of the demonstration of climate change acceptability. EUR This derives from the “cold sea-shore” EPR sub-standard. Rains of relevant frequency are accounted for as part of external flooding events
Sea levels:	N/A	Platform level purely site dependant
External off-site or on-site explosion	Triangular pressure wave (10 kPa, 300 ms)	
Man-made external hazards:		
. Electromagnetic	N/A for UK Sites	
. Ship collision	<<10-5 /yr	
. Fire	N/A	
. Chemical releases	<10-5 / yr	

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Topic / Feature	UK EPR GDA reference	Comments
. Missiles	N/A	
Biological hazards		EUR
. Biological Fouling	1 /r.yr	
. Animal Infestation	N/A	

3.2.3 External Hazards (special cases)

Topic / Feature	UK EPR GDA reference	Comments
Aircraft crash event	Aircraft shell and / or geographical separation. SECURITY CLASSIFIED	No frequency consideration is taken into account in terms of load definition. Protection is designed against military and large commercial aircrafts.
Malicious activities	SECURITY CLASSIFIED	

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3.3 Environment

All figures relate to one EPR plant and do not account for any auxiliary facility (e.g. interim storage for waste or spent fuel)

3.3.1 Radioactive discharges (expected performance without contingency and expected maximum)

Topic / Feature	UK EPR GDA reference	Comments
Liquid . Tritium . Carbon 14 . Iodine . Fission / activation products	52,000-75,000 GBq/y 23 - 95 GBq/y 0.007 - 0.05 GBq/y 0.6 - 10 GBq/y	Monitoring and limits needs to be further investigated
Gaseous . Tritium . Carbon 14 . Iodine . Noble gases . Fission/activation products	500 - 3000 GBq/y 350 - 700 GBq/y 0.05 - 0.4 GBq/y 800 - 22,500 GBq/y 0.004 - 0.12 GBq/y	

3.3.2 Chemical discharges associated with radioactive waste (expected performance without contingency and expected maximum)

Topic / Feature	UK EPR GDA reference	Comments
. Boric acid	2000 - 7000 kg	See above assumption on fuel
. Lithium hydroxide	Less than 1 - 4.4 kg	See above assumption on fuel

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Topic / Feature	UK EPR GDA reference	Comments
. Hydrazine	7 – 14 kg	
. Morpholine	345 – 840 kg	
. Ethanolamine	250 – 460 kg	
. Nitrogen (excluding hydrazine, morpholine and ethanolamine)	2,530 – 5,060 kg	
. Phosphate	155 – 400 kg	

3.3.3 Operational and solid radioactive waste

Topic / Feature	UK EPR GDA reference	Comments
Estimated quantities: . Raw waste . Final packaged waste (VLLW, LLW & ILW) . Gross activity	82.5 m3/y 58 - 90 m3/y 6.4 TBq/y	Does not include TEU concentrates arising from the treatment of process drains (a few m3). Combustible waste incinerated. Final package volumes depend on the solid waste processing techniques that are selected
Routes: . VLLW . LLW . ILW	Suitable for landfill sites. On-line export to LLWR or further facility, except those incinerated (process solid waste & solvents) or suitable to be sent to off-site melting facilities. Interim on-site storage up to 100y, then final depository.	

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3.3.4 Spent fuel

Topic / Feature	UK EPR GDA reference	Comments
Route		Interim on-site storage up to 100years (amidst options).

3.3.5 Solid conventional waste

Topic / Feature	UK EPR GDA reference	Comments
Quantity	570 te	Depends on daily operation and maintenance. GDA uses a typical value based on yearly review of existing sites.

3.3.6 Other characteristics

Topic / Feature	UK EPR GDA reference	Comments
PPC regulations for Diesels		TBD – Phase 2 NSL and site environmental permitting - control and abatement measures

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4.0 UK EPR REFERENCE DESIGN

The UK EPR reference design is defined principally by:

- System Design Manuals (SDMs) included in the end 2008 Design Freeze. The SDM parts are listed in **Annex 1**. These design reference documents are based on FA3 SDMs and reflect the end 2008 Design Freeze. Accordingly, these design reference documents will require update post-GDA to include design changes agreed during GDA.
- FA3 design changes, related to nuclear safety, environment or security, included within the end 2008 Design Freeze, which have (or potentially have) a significant impact on the GDA submission, which are in progress but not completely implemented in the documents listed in Annex 1. These changes are recorded in UK Change Management Forms (CMFs) and are listed in **Annex 2**.
- FA3 or UK specific design changes implemented into the UK EPR design reference after the end 2008 Design Freeze through the GDA Design Change process. These changes are grouped in UK Change Management Forms (CMFs) and are listed in **Annex 3**.

This reference design is complemented for Control and Instrumentation, Civil Engineering, Classification and NSSS components by dedicated supporting references detailed in the following sections

4.1 System Design Manuals

The System Design Manuals constitute the principal reference documentation describing the UK EPR design. Applicable SDMs are listed in Annex 1. Applicable Change Management Forms (CMFs) from Annexes 2 and 3 are also listed for each system. These design reference documents are based on FA3 SDMs and reflect the end 2008 Design Freeze. Accordingly, these design reference documents will require update post-GDA to include design changes agreed during GDA. Guidance for update of SDMs post-GDA is provided in UKEPR-0019-001 – Issue 01, “Specification for System Design Manual Update Post GDA”.

4.2 Main NSSS components

The design of the main NSSS components is described in the Reactor Coolant System Design Manual as discussed above and in Annex 1. The SDM information is complemented by Equipment specifications and drawings, notably for:

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Equipment Specifications for RPV, Pressuriser and SGs

Reference	Description
<u>Reactor Pressure Vessel</u> NFPMR DC 1145 rev J	Reactor Pressure Vessel – Equipment Specification
<u>Pressuriser:</u> NEER-F DC 18 rev E	FA3 – Pressurizer – Equipment Specification
<u>Steam Generators:</u> NFEMG DC 80 rev I	EPR Steam Generator – Equipment Specification

4.3 Control and Instrumentation

The scope of the UK EPR Instrumentation & Control (C&I) design for the UK EPR GDA is based on the following items:

- Plant I&C architecture,
- I&C automation systems architecture and development
- Instrumentation
- HMI systems
- I&C platform development.

The C&I documentation submitted within the scope of GDA includes information in terms of process and functional definition and specification that is sufficiently complete to enable detailed design to be performed.

The main technical documentation supporting the control and instrumentation design for UK EPR GDA is:

- SDMs included in the December 2008 Design Freeze (Annex 1) and complemented by UK specific design changes (Annex 3),
- UK specific Quality plans for each C&I system.

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Control and Instrumentation systems – Quality plans

Reference	Description
NLN-F DC 132 – A	Overall I&C System Quality Plan
NLE-F DM 10007 - D	Typical System Quality Plan for the Engineering of a TELEPERM XS I&C System
NLF-F DC 82 - C	Quality plan for engineering of FA3 standard I&C based on SPPA-T2000
TA-2061589 - C	NCSS Quality Plan
TBD - Phase 2 - NSL	PACS – Quality plan

- Additional system specification documents for each C&I system

Control and Instrumentation systems – System specification

Reference	Description
ECECC100744 - A	Plant I&C requirement specification
NLN-F DC 193 - C	Protection System – System Description
NLP-G\2006\en\1007 Rev G	Reactor Control and Limitation System (RCSL) - – Detail specification
SY710 Indice 6	System specification file - Process Automation System (PAS) and Safety Automation System (SAS)
NLE-F DC 106 - C	Severe Accident I&C detailed specification file
NEPS-F DC 555 – D	Safety requirements for Non-Computerised Safety System (NCSS)
NEPR-F DC 551 – C	EPR UK Functional Requirements on Non-Computerised Safety I&C Functions
TA – 2062484 – C	NCSS - System Specification
TBD - Phase 2 - NSL	PACS – System Description
NLE-F DC 173 Rev C	Process Instrumentation Pre-Processing System (PIPS) – Detailed system specification

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4.4 Civil Engineering

The main technical documentation supporting the UK EPR GDA civil engineering design consist of:

- Assumptions and Hypothesis documents for Civil Engineering

Hypothesis and Methodology documents

Reference	Description
<u>Nuclear island buildings</u> ECEIG021405 Rev H1 ECEIG111110 Rev C	EPR - General hypotheses note for civil engineering design of Nuclear Island buildings. (TR 07/312). EDF. October 2008. EPR Nuclear Island Civil Engineering Design Process
<u>Common Raft</u> SFL-EYRC-0030027 Rev C1 ECEIG111110 Rev C	General assumptions for the design of the FA3 EPR common foundation raft. EPR Nuclear Island Civil Engineering Design Process
<u>Inner Containment</u> SFL-EYRC-0030018 Rev E1. ECEIG111110 Rev C	Hypothesis note on inner containment wall equipped with steel liner inside Reactor Building. SFL-EYRC-0030018 Revision E1. EPR Nuclear Island Civil Engineering Design Process
<u>Reactor building containment internals</u> SFL-EYRC-003022 Rev F1 11787 YR1221 NT 28B01 0001 Rev D1 ECEIG111110 Rev C	Hypothesis note on reactor building containment internals. Sofinel. October 2008. (E) Reactor Building - Containment Internals – Hypothesis and methodology note. EPR Nuclear Island Civil Engineering Design Process
<u>Fuel Building</u> SFL-EYRC-00030017 Rev F1. 10439-NT-28B01-301 Rev E1 ECEIG111110 Rev C	Hypothesis note for the design of civil engineering structures in the FA3 Fuel Building. Sofinel. October 2008. (E) Fuel Building – Assumptions and Methodology Note.. EDF. October 2008. (E) EPR Nuclear Island Civil Engineering Design Process

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Reference	Description
<u>Safeguard Auxiliary Building</u> ECEIG111110 Rev C	EPR Nuclear Island Civil Engineering Design Process
<u>Nuclear Auxiliary Building</u> ECEIG111110 Rev C	EPR Nuclear Island Civil Engineering Design Process
<u>Diesel buildings</u> SFL-EYRC-0030020 Rev E1	Hypothesis note on civil engineering design of the EPR FA3 Diesel Buildings. Sofinel. October 2008. (E)
<u>Effluent Treatment Building</u> 003-22626-HQ-ST-NDC-001- EPR FA3-HQ	Hypothesis and Calculation Note for Effluent Treatment Building
<u>Structural Steelworks:</u> ECEIG051339 Rev B1	EPR General Hypothesis to Design Steel Structures. EDF. March 2009. (E)
<u>Turbine Building</u> ETDOIG070090 Rev B1	Hypothesis Note for the Turbine Building

- Supported by dedicated codes and standards (Section 3.1.4 – Codes).

4.5 Classification

UK EPR classification methodology is presented in the following document:

- NEPS-F DC 557 Rev D – Methodology for Classification of Structures, Systems, Safety Features and Components

The agreed classification methodology from GDA will result in the detailed review and analysis of the UK EPR, during NSL, to ensure an appropriate categorisation and classification of SSCs, safety features, and safety feature groups. Update of design documentation to account for categorisation and classification changes will occur during NSL.

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4.6 Severe Accidents

The UK EPR management of Severe Accidents is described in Sub-chapter 16.2 – Severe Accidents Analysis (RCC-B) of the PCSR. This includes use of the CONVECT system, the recombiners (PARs) for hydrogen recombination and the Core Melt Stabilisation System (CMSS) for relocation of the melt in the core catcher. Severe accident considerations and studies relative to the Fukushima event are addressed in Section 4.7.

4.7 Fukushima Review and Lessons Learned

A review of the Fukushima event and lessons learned has been conducted during GDA on the UK EPR. From the review of FA3 in response to Fukushima some robustness enhancements were identified and these have been taken forward as CMFs within GDA such that further studies and implementation can be carried out by future licensees. Additionally, other reviews undertaken in GDA identified further robustness enhancements associated with CMFs and these, together with the FA3 enhancements, are listed and described in the new dedicated PCSR Sub-chapter (sub-chapter 16.6) developed during GDA to summarise the supplementary robustness studies and design enhancements to be taken forward by UK EPR licensees.

5.0 GDA OUT-OF-SCOPE ITEMS

For each GDA technical assessment area, a list of out of scope items has been identified. The following items have been identified as out of GDA scope for the following reasons:

- Design is operator or site dependent,
- Methodologies have been submitted to GDA but detail design will be provided only as part of NSL,
- Design is supplier dependent and suppliers are not selected at the time of GDA.

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Topic Area	Out of scope items	Comment
1. Internal Hazards	None	
2. Civil Engineering	<p>1. Detailed Design of Waste Treatment Building, pumping station, tunnels & galleries (Aspects remaining in GDA scope: see (*) comment below)</p> <p>2. Detailed Design of common raft and NAB raft (including composition and installation of waterproof membrane)</p> <p>3. Soil parameters and induced vibrations</p> <p>4. Detailed design of Chimney (including Chimney Stack materials e.g. composite)</p> <p>5. Design of Prestressing Gallery inside Common raft</p> <p>6. P14 drawings and detailing provisions</p> <p>7. ETC-C Part 2 Sections:</p> <p style="padding-left: 40px;">2.1 Earthworks and Soil treatments</p> <p style="padding-left: 40px;">2.6 Prefabrication</p> <p style="padding-left: 40px;">2.8 Metal elements incorporated in concrete</p> <p style="padding-left: 40px;">2.11 Buried safety classified conduits</p> <p style="padding-left: 40px;">2.12 Filling of joints</p>	<p>1. These buildings are site or operator dependent.</p> <p>2. Thickness and reinforcement of rafts are site dependent.</p> <p>3. Site dependent.</p> <p>4. Governing loads (seismic and climatic conditions) are site dependent.</p> <p>5. Site dependent.</p> <p>6. P14 drawings are project specific and contain detail design information.</p> <p>7. Sections 2.1, 2.6, 2.8, 2.11, 2.12, and 2.13 in part are applicable to site dependent construction related activities.</p>

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Topic Area	Out of scope items	Comment
	<p>2.13. Topography</p> <p>8. Detailed design of Diesel buildings (Aspects remaining in GDA scope: see (*) comment below)</p> <p>9. Detailed design of Pool Liners (Aspects remaining in GDA scope: see (*) comment below)</p> <p>10. Detailed design of Anchorages other than those covered by the ETC-C</p> <p>11. Main Control Room detailed design and layout (Aspects remaining in GDA scope: design methodology including acoustic design, main load cases and load combinations, and material characteristics.)</p> <p>12. Nuclear Auxiliary Building (Aspects remaining in GDA scope: : see (*) comment below)</p> <p>13. Safeguards Auxiliary Building (Aspects remaining in GDA scope : see (*) comment below)</p> <p>(*) : ETC-C, design methodology, and main assumptions, including aircraft crash, doors & opening protection when concerned</p>	<p>8. Reference design not applicable to UK sites/UK design (inclusive of raft and wall thicknesses since they are site and supplier dependent)</p> <p>9. Designer/supplier dependent</p> <p>10. Specific (generic) anchorage designs are designer/supplier dependent.</p> <p>11. Detailed design is operator specific.</p> <p>12. Detailed design of the reference design is not entirely applicable to a UK site.</p> <p>13. Detailed design of the reference design is not entirely applicable to a UK site.</p>

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Topic Area	Out of scope items	Comment
3. External Hazards	<ul style="list-style-type: none"> 1. External flooding: design of site protections 2. Low water level: design of site protections 3. Climatic conditions: design of ultimate heat sink 4. Hazards from human origin (Industrial environment, transport routes, EMI, ...): design of site protections 5. Application of qualification principles 	<ul style="list-style-type: none"> 1. These items are site dependent 2. These items are site dependent 3. These items are site dependent 4. These items are site dependent 5. Qualification demonstration is provided by suppliers. UK EPR suppliers are not selected in the GDA phase.
4. PSA	<ul style="list-style-type: none"> 1. Final updates of detailed GDA PSA documentation (to align with the last GDA PSA update) will be performed after GDA. 2. Development of processes to consider PSA insights for any future use of the PSA beyond GDA. In particular, any PSA modelling updates to address any future requirements to adapt the GDA PSA in support of plant operation (risk monitor). 3. Any requirement on the PSA modelling that needs detailed design information or site specific data beyond the scope of the GDA. In particular any anticipation of future updates of documents included in the reference design configuration. 4. Design of conventional island. 5. Test frequencies of key components 	<ul style="list-style-type: none"> 1. Finalisation of detailed PSA documentation is necessarily a down-stream activity to finalisation of the GDA PSA and will therefore be completed beyond GDA. 5. Operator specific

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Topic Area	Out of scope items	Comment
	6. Non UK EPR applicable FMEAs (Aspect remaining in GDA scope: Hardware FMEAs formally submitted for UK EPR)	
5. Fault Studies	1. Site specific calculations for radiological consequences (methodology is in GDA scope) 2. Control and Limitation functions (with the exception of PCI limitation which is in GDA scope) 3. Operating Technical Specification (OTS) documents	2. Control and Limitation functions are used only in normal operation of the plant, hence not covered in the Fault Studies scope. 3. Operator dependent
6. Control and Instrumentation	1. I&C automation systems : a. Detailed design and Verification & Validation Activities for NCSS (Aspect remaining in GDA scope: process for Verification and Validation Activities for NCSS) b. Commissioning & Site Manuals providing the specification and the execution of the site tests, encompassing the manual used for on-site maintenance and testing for all I&C automation systems 2. Instrumentation: a. Detailed design / manufacturing of process sensors and RPMS (rod position) b. Qualification program and results for excore and incore sensors and RPMS (rod position)	1. – 3. Detailed design or operator specific

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Topic Area	Out of scope items	Comment
	3. Systems that are not used in the monitoring, control and safety of the plant: <ul style="list-style-type: none"> a. Turbine I&C b. Fire detection and protection I&C c. Waste treatment building I&C d. Seismic monitoring system e. Fatigue, leakage, loose part or vibration monitoring f. Radiation monitoring 	
7. Electrical Power Supply	1. Detailed design of following items <ul style="list-style-type: none"> 1.1 Electrical Systems 1.2 Verification of Electrical transient analyses 1.3 Verification of the electrical distribution robustness regarding fast transients: Loss of one line of defense in case of external lightning impulse 1.4 Verification of the electrical distribution robustness regarding fast transients: Ferro resonance phenomenon in internal network 2. Implementation of the MV and LV protections selectivity 3. Grid connections and coordination with the protection systems on the grid	1.1 and 1.2 Related to supplied equipment and consequently to site licence and not generic design 1.3 Detailed design verification to be provided in the site license framework 1.4 Detailed design verification to be provided in the site license framework 2. Related to supplied equipment and consequently to site licence and not generic design 3. Site specific. Depends on grid characteristics and plant regulation performance.
8. Fuel Design	1. Final evaluation of FA bow impact on safety margin	1. Performance of FA will be defined more precisely before implementation in UK EPR accounting for operating experience and on going

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Topic Area	Out of scope items	Comment
		developments (e.g., FA mechanical improvements). Final margins are potentially linked to the implemented core management design.
9. Reactor Chemistry	1. UK EPR secondary systems other than the AAD, APG, ARE, ASG, ATD, CEX, CRF, CVI, GCT, RES, SIR, SIT, SRI, VDA and VVP systems.	1. These secondary systems are site dependant.
10. Radiation Protection	<p>1. Operator dependant items:</p> <p>1a) Operating equipment selection and comparison of existing suppliers (e.g.: PRMS, robot for SG inspections...)</p> <p>(Aspect remaining in GDA scope: access routes / locations for testing, maintaining and reading outputs from equipment)</p> <p>1b) Operation and maintenance practices (e.g. jumpers)</p> <p>(mid-loop operations and SG nozzle dams see item 18.3)</p> <p>1c) Decontamination practices</p> <p>(Aspect remaining in GDA scope: decontamination facilities set aside for decontamination of equipment / plant)</p> <p>1d) Temporary shielding and optimisation of maintenance works</p> <p>(Aspect remaining in GDA scope: temporary shielding (use and storage) where installation</p>	<p>1. Operator dependant</p> <p>1a) Specification of this equipment does not impact the plant design. Suppliers are selected by the UK EPR owner, as well as the way is the equipment is operated.</p> <p>1b) The radiation protection objectives at the design stage are to provide the EPR with the means of performing the already identified maintenance works with ALARP doses. However, the way these maintenance operations have to be performed are under the responsibility of the future operator.</p> <p>1c) The decontamination of rooms, ponds/pits... strongly depends on the contamination nature and on the operator practices. It does not impact the design.</p> <p>1d) In operation, each maintenance works is investigated and optimised from the RP point of view but this requires the operating plant knowledge, concerning the hot spots or the</p>

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Topic Area	Out of scope items	Comment
	<p>of permanent shielding is not ALARP).</p> <p>2. Topics with no design requirements (topics that are specified in the HSE TAGs)</p> <p>2a) Individual dose and its optimisation</p> <p>(Aspect remaining in GDA scope: collective dose received by workers in the same team by virtue of them being at particular locations within the plant and subject to ambient dose rate)</p> <p>2b) Optimisation of dose in accidents</p> <p>(Aspects remaining in GDA scope: The nature and location of evacuation routes for workers to minimise doses during accidents, Doses to operators required to bring the plant into a safe state.)</p>	<p>neighbouring workshops for example. This cannot be performed at the design stage.</p> <p>2. Topics with no design requirements (topics that are specified in the TAGs):</p> <p>The radiation protection studies aim at defining requirements regarding the EPR design (civil work, layout, equipments) so that the workers radiation protection is assured.</p> <p>2a) The individual dose is specified by the law and by the operator rules within its facility. The individual dose constraint has to be set by the UK EPR owner and discussed with HSE. In addition, optimising an individual dose can only be performed in the framework of a specific activity in a dedicated location that would have been required by the plant operator. It cannot be performed at the design stage.</p> <p>2b) The optimisation of dose in accidents is meaningless as it supposes that:</p> <ul style="list-style-type: none"> - either all the EPR has to be designed to protect people from the doses likely to be received in situations other than PCC1/2, - or people location at the accident time is known (and then we know when the accident is likely to occur). <p>3. Direct shine is dependent on the shielding</p>

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Topic Area	Out of scope items	Comment
	3. Protection of the public - dose in normal operation - dose during accidents - optimisation (Aspect remaining in GDA scope: direct shine) 4. Site specific Level 3 PSA (Aspect remaining in scope: Generic Level 3 PSA)	within the plant and affects doses to members of the public from direct radiation originating from the perimeter of the site. 4. Site specific
11. Mechanical Engineering	1. Stack calculations (height/ characteristics) (Methodology is within GDA scope) 2. Equipment qualification reports 3. Supplier list of documents for TEG Compressors 4. Heat sink characteristics	1. Stack characteristics are site dependent. 2. These documents are strongly linked to the choice of supplier which will be different between projects 3. Supplier lists are project specific. 4. The single sea based heat sink design is generic hence within GDA scope however details of design and specific sizing of the heat sink are site dependent, hence out of GDA scope.
12. Structural Integrity	1. EPR project specific detailed design documents for the main components including: Requisitions, Final stress and fast fracture specifications and reports	1. These documents take into account specific project requirements and site characteristic data. They are not generic.

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Topic Area	Out of scope items	Comment
	<p>2. Detailed inspection (PSI and ISI) reports (Accessibility to deploy potential inspections techniques remains within GDA scope)</p> <p>3. Detailed specification of Fracture Toughness tests for Avoidance of Fracture demonstration</p> <p>4. Specific End of Manufacturing NDT qualification processes for component zones other than the prototype application for Avoidance of Fracture demonstration</p> <p>5. Quality Assurance arrangements for Long Lead items</p> <p>6. Irradiation Damage Surveillance Programme details (Principles and supporting evidence of Irradiation Damage Surveillance Programme remain within GDA scope)</p>	<p>2. Consideration of PSI/ISI proposals is out of scope for GDA. Detailed inspection plans and characteristics will be worked up with the Licensing organisation during NSL.</p> <p>3. A proposal of the fracture toughness tests will be made in the frame of GDA for RO20 but the detailed specification will be worked up beyond GDA with the Licensing organisation during NSL.</p> <p>4. GDA scope is limited to the prototype application. This is provided as a first to test appropriateness of proposed methodology and to develop a generic overall procedure which will be used as a basis on which to develop the detailed processes for each component zone during NSL.</p> <p>5. Organisational arrangements are highly dependent on specific licensee and vendor requirements.</p> <p>6. Detailed analyses and tests for the Programme to be implemented will be performed with the Licensing Organisation during NSL.</p>
13. Human Factors	<p>Detailed implementation for the following items is out of scope (high level concepts are in GDA scope)</p> <p>1. Team organisation</p> <p>2. Staffing</p>	<p>1. Operator specific. Information to be completed in NSL.</p>

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Topic Area	Out of scope items	Comment
	<ul style="list-style-type: none"> 3. Operating and maintenance procedures 4. Use of State Oriented Approach 5. Display breakdown 6. Training 	
14. MoS & QA	<ul style="list-style-type: none"> 1. QA arrangements for manufacturing activities 2. Post-GDA UK EPR Project organisation 3. Details of processes to be applied during UK EPR project execution 4. Project specific QA arrangements for knowledge transfer between designer and operator 	<ul style="list-style-type: none"> 1. Project specific 2. Project specific 3. Project specific 4. To be agreed with the future operator in later licensing phases.
15. Radwaste & Decommissioning	<ul style="list-style-type: none"> 1. Choice of waste conditioning options 2. Licensing and detailed design of interim storage facilities 3. Letter of Compliance process with RWMD 	<ul style="list-style-type: none"> 1. This is an operator choice. Options remain open in GDA. To be decided in phase 2. 2. The ISF are options to be chosen by the operator in the site specific phase; such facilities already exist on nuclear sites worldwide; spent fuel ISF is not needed before 10 years after the EPR start of operation. 3. The key GDA deliverable in this topic area is a proposed credible plan to secure the letter of compliance. GDA Disposability Assessment has initiated the LOC process for New Build ILW and Spent Fuel disposal providing a first step towards delivery of Stage 1 LoCs. The responsibility for achieving full LoCs (LoC 1 to 3) will be with the

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Topic Area	Out of scope items	Comment
	4. Laundry	operator. However there is also a responsibility on RWMD to develop the processes that will enable delivery of LoCs. 4. It is the licensee's responsibility to determine how to deal with contaminated clothing.
16. Classification	<p>1. GDA scope is limited to that consistent with other GDA topic scopes (civil structure, C&I, etc.) in terms of functions and SSCs covered. In particular site specific Structures Systems and Components classification are out of GDA scope (e.g. pumping station).</p> <p>2. Detailed SSC classification list</p> <p>3. Complete application of NEPS-F DC 557 classification methodology within GDA SSER and supporting design documentation</p>	<p>1. Consistency with GDA technical scope</p> <p>2. This is a detailed design activity.</p> <p>3. For GDA limited to RCV [CVCS] and ASG [EFWS], remainder of the application is a detailed design activity</p>
17. Security	<i>SNI channel used</i>	
18. Cross-Cutting	1. Documentation listed in Submission Master List Level 4	<p>1. The UK EPR GDA safety case is structured into 4 levels as reflected in the Submission Master List.</p> <p>Level 1 – PCSR</p> <p>Level 2 – PCSR references</p> <p>Level 3 – Other supporting documentation not referenced in PCSR</p> <p>Level 4 – Other supporting documentation submitted to HSE for “information only” (e.g. detailed design information, site and operator</p>

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Topic Area	Out of scope items	Comment
	<p>2. 3D model (process and outputs)</p> <p>3. Mid loop operations (testing/maintenance on Steam Generators by operators) and SG nozzle dams safety case</p> <p>4. Update of System Design Manuals including application of GDA agreed classification methodology</p>	<p>specific information), as part of the GDA process, to give confidence that the design intent can be delivered (included in HSE's assessment but excluded from the DAC).</p> <p>2. 3D model outside GDA scope as site and operator specific.</p> <p>3. UK EPR Design could technically accommodate mid loop operation, which is nevertheless not part of the current safety case. This operator specific decision will be made by the licensee and proper justification will be provided where required.</p> <p>4. GDA design reference based on SDMs versions included in design freeze 2008 and will require update post-GDA to include agreed GDA design changes.</p>

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6.0 UK EPR REFERENCE DESIGN - FUTURE UPDATES

Every update of the UK EPR documented reference design will be recorded in a revision of this reference design document and its impact on the UK GDA submission assessed via the UK GDA design change management process – UKEPR-I-003.

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ANNEX 1

Elementary systems FA3 reference list used for UK EPR

Note: GDA design reference based on SDMs versions included in design freeze 2008 and will require update post-GDA to include agreed GDA design changes, classification methodology application results, etc. as outlined in UKEPR-0019-001 Issue 01, "Specification for System Design Manual Update Post GDA"

The columns in the table give the following information:

"SDM": System Design Manual

"ES": Elementary System: one SDM may concern several elementary systems (e.g. for electrical systems)

"Designation": Complete name of the system

"Island": Part of the plant to which the system belongs (Nuclear Steam Supply System (NSSS), Balance of Nuclear Island (BNI), Conventional Island (CI), Balance Of Plant (BOP), Waste Treatment Building (EBT), Operational Building (POE))

SR: System specification file: system requirements – cited where SDM is not available;

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SDM parts (for "stage 1" level of information)¹:

- P1: History of the system manual
- P2: System operation
- P3: Sizing of the system and its components
- P4: Flow diagrams recapitulative document²;
- P5: Instrumentation and control (I&C)³;

Status: BPE = approved ; BPO or PREL = issued for comments

¹ For C&I systems, SDMs listed in Appendix 1 (End 2008 SDMs) are not fully consistent with UK EPR design. Up to date documentation is listed in Section 4.3.

² P4 includes references of P4.1: Functional Flow Diagrams (SMF) and - P4.2: Detailed Flow Diagrams (SMD). P4.2 reference is put instead of P4 wherever P4 not yet available.

³ P5 text part only is included in GDA reference (P5.6: Functional I&C diagrams (DFE) are given for information only).

SDM	ES	DESIGNATION	Island	SDM PART	DOC REFERENCE	REVISION	DATE
AAD/	AAD	Start up and shutdown feedwater system	CI	SDM	ETDOFC060129	A1	13/01/2010
APA/	APA	Motor driven feedwater pump system	CI	SDM	ETDOFC060117	A1	14/12/2009
APG/	APG	Steam generator blowdown system	BNI	P2	SFLEZS030046	G	12/12/2008
APG/	APG	Steam generator blowdown system	BNI	P3	SFLEZS030047	G	15/12/2008
APG/	APG	Steam generator blowdown system	BNI	P4.1	ECEF081522	A	22/07/2008
APG/	APG	Steam generator blowdown system	BNI	P4.2	EZS2007EN0013	E	17/12/2008
APG/	APG	Steam generator blowdown system	BNI	P4	SFLEZS030048	F	31/07/2008
APG/	APG	Steam generator blowdown system	BNI	P5	SFLEZS030079	G	07/11/2008
ARE/	ARE	Steam generator main feedwater system	BNI	P2	NESSFDC576	A	07/09/2009
ARE/	ARE	Steam generator main feedwater system	BNI	P3	NESSFDC577	A	07/09/2009
ARE/	ARE	Steam generator main feedwater system	BNI	P4	NESSFDC593	A	24/09/2009
ARE/	ARE	Steam generator main feedwater system	BNI	P5	NESSFDC611	A	01/12/2009
ASG/	ASG	Steam generator emergency feedwater system	BNI	P2	SFLEFMF2006829	E1	16/09/2009
ASG/	ASG	Steam generator emergency feedwater system	BNI	P3	EYTF2007FR0052	C1	16/09/2009
ASG/	ASG	Steam generator emergency feedwater system	BNI	P4.1	ECEF072091	A	20/12/2007
ASG/	ASG	Steam generator emergency feedwater system	BNI	P4.2	EYTF2007FR0031	E	29/08/2008
ASG/	ASG	Steam generator emergency feedwater system	BNI	P4	SFLEFMF2006746	D1	16/09/2009
ASG/	ASG	Steam generator emergency feedwater system	BNI	P5	EYTF2006FR0011	F1	17/09/2009
CFI/	CFI	Circulating water filtration system	BOP	P2	ETDOFC080143	A1	11/08/2009
CFI/	CFI	Circulating water filtration system	BOP	P3	ETDOMA080153	A1	14/08/2009
CFI/	CFI	Circulating water filtration system	BOP	P4.2	ETDOIG070273	B	20/03/2008
CFI/	CFI	Circulating water filtration system	BOP	P5	ETDOFC070338	B1	12/08/2009
CRF/	CRF	Circulating water system	BOP	SDM	ETDOFC050062	B	23/11/2005
CRF/	CRF	Circulating water system	BOP	P4.2	ETDOIG060274	D	11/09/2008
CRF/	CRF	Circulating water system	BOP	P5	ETDOFC080077	C1	30/09/2009
DCL/	DCL	Control room and electrical rooms air-conditioning	BNI	P1	EZH2008EN0042	C	18/11/2008
DCL/	DCL	Control room and electrical rooms air-conditioning	BNI	P2	EZL2006EN0077	F	11/11/2008
DCL/	DCL	Control room and electrical rooms air-conditioning	BNI	P3	EZH2007EN0036	F	14/11/2008
DCL/	DCL	Control room and electrical rooms air-conditioning	BNI	P4.1	ECEF081239	A	08/04/2008
DCL/	DCL	Control room and electrical rooms air-conditioning	BNI	P4.2	EZH2007EN0052	F	19/11/2008
DCL/	DCL	Control room and electrical rooms air-conditioning	BNI	P4	EZH2007EN0051	F	17/11/2008
DCL/	DCL	Control room and electrical rooms air-conditioning	BNI	P5	EZH2007EN0011	E	31/10/2008
DEL/	DEL	Electrical building backed-up chilled water production system	BNI	P1	EZH2007EN0142	D	12/11/2008
DEL/	DEL	Electrical building backed-up chilled water production system	BNI	P2	SFLEZL030004	H	05/11/2008
DEL/	DEL	Electrical building backed-up chilled water production system	BNI	P3	EZH2007EN0001	F	05/11/2008
DEL/	DEL	Electrical building backed-up chilled water production system	BNI	P4.1	ECEF072079	A	18/12/2007
DEL/	DEL	Electrical building backed-up chilled water production system	BNI	P4.2	SFLEZL030015	A	12/09/2006
DEL/	DEL	Electrical building backed-up chilled water production system	BNI	P4	EZL2007EN0067	F	05/11/2008
DEL/	DEL	Electrical building backed-up chilled water production system	BNI	P5	SFLEZL030023	H	30/10/2008
DER/	DER	Reactor building chilled water production system	BNI	P1	EZH2008EN0043	C	11/11/2008
DER/	DER	Reactor building chilled water production system	BNI	P2	EZL2007EN0078	F	10/11/2008
DER/	DER	Reactor building chilled water production system	BNI	P3	EZH2007EN0002	F	10/11/2008
DER/	DER	Reactor building chilled water production system	BNI	P4.1	ECEF080980	A	15/05/2008
DER/	DER	Reactor building chilled water production system	BNI	P4.2	SFLEZL030013	F	13/11/2008
DER/	DER	Reactor building chilled water production system	BNI	P4	EZL2007EN0080	F	13/11/2008
DER/	DER	Reactor building chilled water production system	BNI	P5	EZH2007EN0044	F	30/10/2008
DFL/	DFL	Electrical building smoke extraction system	BNI	P1	EZH2008EN0041	C	12/11/2008
DFL/	DFL	Electrical building smoke extraction system	BNI	P2	EZH2007EN0012	F	31/10/2008
DFL/	DFL	Electrical building smoke extraction system	BNI	P3	EZH2007EN0153	E	27/10/2008
DFL/	DFL	Electrical building smoke extraction system	BNI	P4.1	ECEF081218	A	08/07/2008
DFL/	DFL	Electrical building smoke extraction system	BNI	P4.2	EZH2007EN0150	F	30/10/2008

DFL/	DFL	Electrical building smoke extraction system	BNI	P4	EZH2007EN0140	F	30/10/2008
DFL/	DFL	Electrical building smoke extraction system	BNI	P5	EZH2007EN0111	D	30/10/2008
DMK/	DMK	Fuel building handling equipment	BNI	SR	ECEMA060983	A1	30/03/2009
DMR/	DMR	Reactor building handling equipment	BNI	P2	EYTM2009FR0074	B1	18/07/2010
DMR/	DMR	Reactor building handling equipment	BNI	P3	EYTM2009FR0075	B1	18/07/2010
DN./	DN.	Standard lighting for the buildings	BNI/CI	SR	ECEIG061187	A1	12/06/2009
DS./	DS.	Emergency lighting for the buildings	BNI/CI	SR	ECEIG061187	A1	12/06/2009
DVD/	DVD	Diesel building ventilation system	BNI	P2	SFLEFMF2006430	E1	07/10/2009
DVD/	DVD	Diesel building ventilation system	BNI	P3	SFLEFMF2006431	D1	13/10/2009
DVD/	DVD	Diesel building ventilation system	BNI	P4.1	ECEF071412	A	17/04/2008
DVD/	DVD	Diesel building ventilation system	BNI	P4	EYTS2007FR0135	C1	13/07/2009
DVD/	DVD	Diesel building ventilation system	BNI	P5	SFLEFMF20061650	F1	20/10/2009
DVL/	DVL	Electrical building main ventilation system	BNI	P1	EZH2008EN0045	C	19/11/2008
DVL/	DVL	Electrical building main ventilation system	BNI	P2	EZL2007EN0077	F	12/11/2008
DVL/	DVL	Electrical building main ventilation system	BNI	P3	EZH2007EN0035	F	12/11/2008
DVL/	DVL	Electrical building main ventilation system	BNI	P4.1	ECEF081214	A	08/07/2008
DVL/	DVL	Electrical building main ventilation system	BNI	P4.2	EZH2007EN0049	E	14/11/2008
DVL/	DVL	Electrical building main ventilation system	BNI	P4	EZL2007EN0072	F	12/11/2008
DVL/	DVL	Electrical building main ventilation system	BNI	P5	EZH2007EN0025	D	06/11/2008
DVP/	DVP	Circulating Water Pumping Station Ventilation system	BOP	SDM	ETDOFC060066	A1	14/12/2009
DWB/	DWB	Ventilation of the contaminable rooms in the operator building	POE	P1	EYTS2007FR0138	A1	07/08/2009
DWB/	DWB	Ventilation of the contaminable rooms in the operator building	POE	P2	SFLEFMF2006131	D1	12/08/2009
DWB/	DWB	Ventilation of the contaminable rooms in the operator building	POE	P3	SFLEFMF2006132	E1	07/08/2009
DWB/	DWB	Ventilation of the contaminable rooms in the operator building	POE	P4.1	EYTS2006FR0013	A	18/09/2006
DWB/	DWB	Ventilation of the contaminable rooms in the operator building	POE	P4.2	EYTS2006FR0003	C	13/02/2008
DWB/	DWB	Ventilation of the contaminable rooms in the operator building	POE	P4	EYTS2006FR0001	B1	07/08/2009
DWB/	DWB	Ventilation of the contaminable rooms in the operator building	POE	P5	EYTS2006FR0006	B1	11/08/2009
DWK/	DWK	Fuel building ventilation system	BNI	P1	EYTS2008FR0032	B1	13/10/2009
DWK/	DWK	Fuel building ventilation system	BNI	P2	SFLEFMF2006164	D1	13/10/2009
DWK/	DWK	Fuel building ventilation system	BNI	P3	EYTS2007FR0043	B	14/09/2009
DWK/	DWK	Fuel building ventilation system	BNI	P4.2	EYTS2007FR0172	B	17/04/2008
DWK/	DWK	Fuel building ventilation system	BNI	P4	EYTS2007FR0173	B1	14/10/2009
DWK/	DWK	Fuel building ventilation system	BNI	P5	EYTS2007FR0191	C1	17/10/2009
DWL/	DWL	Safety auxiliary / electrical building ventilation system	BNI	P1	EZH2008EN0044	C	18/11/2008
DWL/	DWL	Safety auxiliary / electrical building ventilation system	BNI	P2	SFLEZL030008	G	11/11/2008
DWL/	DWL	Safety auxiliary / electrical building ventilation system	BNI	P3	EZH2007EN0033	E	11/11/2008
DWL/	DWL	Safety auxiliary / electrical building ventilation system	BNI	P4.1	ECEF081213	A	07/07/2008
DWL/	DWL	Safety auxiliary / electrical building ventilation system	BNI	P4.2	EZH2007EN0048	E	11/11/2008
DWL/	DWL	Safety auxiliary / electrical building ventilation system	BNI	P4	EZL2007EN0122	F	11/11/2008
DWL/	DWL	Safety auxiliary / electrical building ventilation system	BNI	P5	EZH2007EN0107	D	04/11/2008
DWN/	DWN	Nuclear auxiliaries building ventilation system	BNI	P1	EZH2008EN0031	C	20/11/2008
DWN/	DWN	Nuclear auxiliaries building ventilation system	BNI	P2	EZL2006EN0093	E	18/11/2008
DWN/	DWN	Nuclear auxiliaries building ventilation system	BNI	P3	EZL2006EN0092	F	18/11/2008
DWN/	DWN	Nuclear auxiliaries building ventilation system	BNI	P4.1	ECEF081212	A	07/07/2008
DWN/	DWN	Nuclear auxiliaries building ventilation system	BNI	P4.2	EZH2007EN0056	E	18/11/2008
DWN/	DWN	Nuclear auxiliaries building ventilation system	BNI	P4	EZL2007EN0069	F	18/11/2008
DWN/	DWN	Nuclear auxiliaries building ventilation system	BNI	P5	EZL2007EN0149	E	04/11/2008
DWQ/	8DWQ	Waste treatment building ventilation system	ETB	P1	EYTS2008FR0038	B1	13/11/2009
DWQ/	8DWQ	Waste treatment building ventilation system	ETB	P2	EYTS2007FR0108	B1	13/11/2009
DWQ/	8DWQ	Waste treatment building ventilation system	ETB	P3	EYTS2007FR0109	B1	17/11/2009
DWQ/	8DWQ	Waste treatment building ventilation system	ETB	P4.2	EYTS2007FR0188	B	06/05/2008
DWQ/	8DWQ	Waste treatment building ventilation system	ETB	P4	EYTS2007FR0189	B1	18/11/2009
DWQ/	8DWQ	Waste treatment building ventilation system	ETB	P5	EYTS2007FR0184	C1	18/11/2009

DWW/	DWW	Ventilation of contaminable rooms in the access tower	POE	P1	EYTS2008FR0009	B1	09/11/2009
DWW/	DWW	Ventilation of contaminable rooms in the access tower	POE	P2	EYTS2007FR0187	D1	10/11/2009
DWW/	DWW	Ventilation of contaminable rooms in the access tower	POE	P3	EYTS2007FR0087	B1	10/11/2009
DWW/	DWW	Ventilation of contaminable rooms in the access tower	POE	P4.1	ECEF081184	A	25/09/2008
DWW/	DWW	Ventilation of contaminable rooms in the access tower	POE	P4.2	EYTS2007FR0148	C	18/09/2008
DWW/	DWW	Ventilation of contaminable rooms in the access tower	POE	P4	EYTS2008FR0023	B1	10/11/2009
DWW/	DWW	Ventilation of contaminable rooms in the access tower	POE	P5	EYTS2007FR0165	C1	13/11/2009
EBA/	EBA	Containment sweeping ventilation system	BNI	P1	EYTS2007FR0128	B1	03/11/2009
EBA/	EBA	Containment sweeping ventilation system	BNI	P2	EYTS2007FR0131	B1	03/11/2009
EBA/	EBA	Containment sweeping ventilation system	BNI	P3	SFLEFMF2006502	B1	25/03/2009
EBA/	EBA	Containment sweeping ventilation system	BNI	P4.1	SFLEFMF20061184	A	20/07/2006
EBA/	EBA	Containment sweeping ventilation system	BNI	P4.2	SFLEFMF20061185	C	26/09/2007
EBA/	EBA	Containment sweeping ventilation system	BNI	P4	SFLEFMF20061188	C1	04/11/2009
EBA/	EBA	Containment sweeping ventilation system	BNI	P5	EYTS2006FR0016	D1	04/11/2009
EDE/	EDE	Containment annulus ventilation system	BNI	P1	EYTS2008FR0033	A1	13/08/2009
EDE/	EDE	Containment annulus ventilation system	BNI	P2	EYTS2006FR0010	B1	13/08/2009
EDE/	EDE	Containment annulus ventilation system	BNI	P3	EYTS2007FR0110	B1	13/08/2009
EDE/	EDE	Containment annulus ventilation system	BNI	P4.1	ECEF071054	A	08/04/2008
EDE/	EDE	Containment annulus ventilation system	BNI	P4.2	EYTS2007FR0024	B	06/09/2007
EDE/	EDE	Containment annulus ventilation system	BNI	P4	EYTS2007FR0026	B1	13/08/2009
EDE/	EDE	Containment annulus ventilation system	BNI	P5	EYTS2007FR0003	B1	13/08/2009
EPP/	EPP	Containment leakoff and seal monitoring system	BNI	SR	ECEIG061113	A1	30/03/2009
EPP/	EPP	Containment leakoff and seal monitoring system	BNI	P4.2	EYTF2008FR0030	B	11/12/2008
EPP/	EPP	Containment leakoff and seal monitoring system	BNI	P4	EYTF2008FR0029	B1	23/09/2009
EPP/	EPP	Containment leakoff and seal monitoring system	BNI	P5	EYTF2008FR0045	B1	25/09/2009
ETY/	ETY	Containment H2 control	BNI	P2	EZS2008EN0080	B	07/01/2009
ETY/	ETY	Containment H2 control	BNI	P3	EZS2008EN0081	B	15/04/2009
ETY/	ETY	Containment H2 control	BNI	P4.2	EZS2008EN0082	A	31/10/2008
ETY/	ETY	Containment H2 control	BNI	P5	EZS2008EN0083	A	08/10/2008
EVF/	EVF	Internal containment filtration	BNI	P1	EYTS2007FR0141	B1	30/10/2009
EVF/	EVF	Internal containment filtration	BNI	P2	SFLEFMF2006166	C1	30/10/2009
EVF/	EVF	Internal containment filtration	BNI	P3	SFLEFMF2006165	C1	30/10/2009
EVF/	EVF	Internal containment filtration	BNI	P4.1	SFLEFMF2006516	A	12/07/2006
EVF/	EVF	Internal containment filtration	BNI	P4.2	SFLEFMF20061141	D	23/12/2008
EVF/	EVF	Internal containment filtration	BNI	P4	EYTS2007FR0118	B1	30/10/2009
EVF/	EVF	Internal containment filtration	BNI	P5	EYTS2006FR0012	D1	03/11/2009
EVR/	EVR	Continuous reactor building ventilation system	BNI	P1	EYTS2007FR0129	B1	17/08/2009
EVR/	EVR	Continuous reactor building ventilation system	BNI	P2	EYTS2007FR0132	B1	18/08/2009
EVR/	EVR	Continuous reactor building ventilation system	BNI	P3	SFLEFMF2006451	D	18/08/2009
EVR/	EVR	Continuous reactor building ventilation system	BNI	P4.1	SFLEFMF20061186	A	20/07/2006
EVR/	EVR	Continuous reactor building ventilation system	BNI	P4.2	SFLEFMF20061187	B	21/06/2007
EVR/	EVR	Continuous reactor building ventilation system	BNI	P4	SFLEFMF20061189	B1	19/08/2009
EVR/	EVR	Continuous reactor building ventilation system	BNI	P5	EYTS2006FR0017	D1	19/08/2010
EVU/	EVU	Reactor Building Heat Removal System	BNI	P1	EYTF2006FR0010	B1	28/10/2009

EVU/	EVU	Reactor Building Heat Removal System	BNI	P2	SFLEFMF2006626	E1	27/10/2009
EVU/	EVU	Reactor Building Heat Removal System	BNI	P3	SFLEFMF2006694	F1	28/10/2009
EVU/	EVU	Reactor Building Heat Removal System	BNI	P4.1	ECEF080869	A	05/05/2008
EVU/	EVU	Reactor Building Heat Removal System	BNI	P4.2	EYTF2006FR0001	E	01/09/2008
EVU/	EVU	Reactor Building Heat Removal System	BNI	P4	SFLEFMF2006627	C1	06/11/2009
EVU/	EVU	Reactor Building Heat Removal System	BNI	P5	SFLEFMF2006752	D1	28/10/2009
GCT/	GCT	Main steam by-pass system (to condenser)	CI	P1	ETDOFC080022	A1	07/09/2009
GCT/	GCT	Main steam by-pass system (to condenser)	CI	P2	ETDOFC080023	A1	07/09/2009
GCT/	GCT	Main steam by-pass system (to condenser)	CI	P3	ETDOFC080024	A1	01/12/2009
GCT/	GCT	Main steam by-pass system (to condenser)	CI	P4	ETDOFC080025	A1	01/01/2010
GCT/	GCT	Main steam by-pass system (to condenser)	CI	P5	NESSFDC398	B	06/11/2008
JAC/	JAC	Classified fire water production	BOP	P1	ETDOIG080014	A1	25/08/2009
JAC/	JAC	Classified fire water production	BOP	P2	ETDOIG080015	A1	25/08/2009
JAC/	JAC	Classified fire water production	BOP	P3	ETDOIG080016	A1	25/08/2009
JAC/	JAC	Classified fire water production	BOP	P4	ETDOIG080017	A1	25/08/2009
JAC/	JAC	Classified fire water production	BOP	P5	ETDOFC080059	A1	11/08/2009
JDT/	JDT	Fire detection system	BNI	P2	EYTE2008FR0104	A1	28/09/2009
JDT/	JDT	Fire detection system	BNI	P3	EYTE2008FR0107	A1	25/09/2009
JDT/	JDT	Fire detection system	BNI	P4	EYTE2008FR0106	A1	25/09/2009
JDT/	JDT	Fire detection system	BNI	P5	EYTE2008FR0105	A1	28/09/2009
JPI/	JPI	Fire Fighting Water System of the Nuclear Island	BNI	P1	EZH2007EN0005	C	16/09/2008
JPI/	JPI	Fire Fighting Water System of the Nuclear Island	BNI	P2	EZH2007EN0006	D	15/07/2008
JPI/	JPI	Fire Fighting Water System of the Nuclear Island	BNI	P3	EZH2007EN0007	E	15/07/2008
JPI/	JPI	Fire Fighting Water System of the Nuclear Island	BNI	P4.2	EZH2007EN0010	D	15/07/2008
JPI/	JPI	Fire Fighting Water System of the Nuclear Island	BNI	P4	EZH2007EN0009	D	15/07/2008
JPI/	JPI	Fire Fighting Water System of the Nuclear Island	BNI	P5	EZH2007EN0021	B	31/01/2008
JPI/	8JPI	Effluent Treatment Building protection and fire-fighting water distribution sy	ETB	P2	EYTF2007FR0036	D1	29/09/2009
JPI/	8JPI	Effluent Treatment Building protection and fire-fighting water distribution sy	ETB	P3	EYTF2007FR0045	C	20/07/2008
JPI/	8JPI	Effluent Treatment Building protection and fire-fighting water distribution sy	ETB	P4.2	EYTF2007FR0056	C	22/07/2008
JPI/	8JPI	Effluent Treatment Building protection and fire-fighting water distribution sy	ETB	P4	EYTF2007FR0057	C1	29/09/2009
JPI/	8JPI	Effluent Treatment Building protection and fire-fighting water distribution sy	ETB	P5	EYTF2007FR0077	C1	29/09/2009
JPV/	JPV	Diesel generator protection and fire-fighting water distribution system	BNI	P1	EYTF2008FR0078	B1	29/09/2009
JPV/	JPV	Diesel generator protection and fire-fighting water distribution system	BNI	P2	EYTF2007FR0028	C1	29/09/2009
JPV/	JPV	Diesel generator protection and fire-fighting water distribution system	BNI	P4.2	EYTF2007FR0033	C	04/09/2008
JPV/	JPV	Diesel generator protection and fire-fighting water distribution system	BNI	P4	EYTF2007FR0035	C1	30/09/2009
JPV/	JPV	Diesel generator protection and fire-fighting water distribution system	BNI	P5	EYTF2007FR0054	E1	30/09/2009
KC/	KC./O/M/P/Q	Instrumentation and control equipment	All	P1	ECECC070931	B1	02/09/2009
KC/	KC./O/M/P/Q	Instrumentation and control equipment	All	P2	ECECC070539	B1	02/09/2009
KC/	KC./O/M/P/Q	Instrumentation and control equipment	All	P3	ECECC070902	B1	02/09/2009
KC/	KC./O/M/P/Q	Instrumentation and control equipment	All	P4	ECECC070935	B1	02/09/2009
KC/	KC./O/M/P/Q	Instrumentation and control equipment	All	P5	ECECC070903	B1	02/09/2009
KIC/	KIC	Process information and control system	BNI/CI	SR	ECECC040729	A1	15/06/2010
KIC/	KIC	Process information and control system	BNI/CI	P5	ECECC080097	B1	15/06/2010
KRH/	KRH	Hydrogen detection system	BNI/CI	P2	SFLEZS030075	A	12/09/2006

KRH/	KRH	Hydrogen detection system	BNI/CI	P3	SFLEZS030076	A	12/09/2006
KRT/	KRT	Radiation monitoring system	BNI	P2	EYTS2007FR0042	B1	06/11/2009
KRT/	KRT	Radiation monitoring system	BNI	P3	EYTS2007FR0186	A1	09/11/2009
KRT/	KRT	Radiation monitoring system	BNI	P5	EYTS2008FR0011	B1	09/11/2009
KRT/	8KRT	Radiation monitoring system in ETB	ETB	P2	EYTS2007FR0224	A	05/08/2009
KRT/	8KRT	Radiation monitoring system in ETB	ETB	P5	EYTS2008FR0052	B1	05/08/2009
KSC/	KSC	Control room instrumentation	BNI/CI	SR	ECECC060019	A1	21/07/2010
KSC/	KSC	Control room instrumentation	BNI/CI	P5	ECECC070760	B1	13/11/2009
LA./	LAV/LAW	2h 220VDC Uninterruptible Power Supply System	CI	P2	ETDOFC080062	A1	23/10/2009
LA./	LAV/LAW	2h 220VDC Uninterruptible Power Supply System	CI	P3	ETDOFC080260	A1	13/11/2009
LA./	LAV/LAW	2h 220VDC Uninterruptible Power Supply System	CI	P4	ETDOFC080264	A1	22/09/2009
LA./	LAV/LAW	2h 220VDC Uninterruptible Power Supply System	CI	P5	ETDOFC070283	C1	17/11/2008
LA./	LAA/B/C/D	2h 220VDC Uninterruptible Power Supply System in NI	BNI	P2	EZE2007EN0035	B	29/10/2008
LA./	LAA/B/C/D	2h 220VDC Uninterruptible Power Supply System in NI	BNI	P5	EZE2007EN0039	B	29/10/2008
LG./	LGi	10kV Normal Power Supply System (Conventional Island)	CI	P2	ETDOFC080180	A1	22/09/2009
LG./	LGi	10kV Normal Power Supply System (Conventional Island)	CI	P3	ETDOFC080274	A1	22/09/2009
LG./	LGi	10kV Normal Power Supply System (Conventional Island)	CI	P4	ETDOFC080275	A1	22/09/2009
LG./	LGi	10kV Normal Power Supply System (Conventional Island)	CI	P5	ETDOFC070285	B1	23/11/2009
LG./	LGF/G/H/I	10kV Normal Power Supply System (Nuclear Island)	BNI	P2	EZE2008EN0003	D	27/10/2008
LG./	LGF/G/H/I	10kV Normal Power Supply System (Nuclear Island)	BNI	P5	EZE2007EN0042	D	27/10/2008
LH./	LHA/B/C/D	10kV Emergency and Secured supplied 10kV distribution system	BNI	P2	EZE2007EN0036	D	27/10/2008
LH./	LHA/B/C/D	10kV Emergency and Secured supplied 10kV distribution system	BNI	P5	EZE2007EN0045	D	27/10/2008
LHP/	LHP/Q/R/S	10 kV diesel generator set Division 1- 2 - 3 - 4	BNI	P2	EYTS2007FR0002	B1	06/10/2009
LHP/	LHP/Q/R/S	10 kV diesel generator set Division 1- 2 - 3 - 4	BNI	P3	EYTS2008FR0041	A1	06/10/2009
LHP/	LHP/Q/R/S	10 kV diesel generator set Division 1- 2 - 3 - 4	BNI	P5	EYTS2007FR0164	B1	06/10/2009
LI./	LIA/B/C/D/K/N	690 V Normal Distribution system (CI)	CI	P2	ETDOFC080063	A1	22/09/2009
LI./	LIA/B/C/D/K/N	690 V Normal Distribution system (CI)	CI	P3	ETDOFC080259	A1	22/09/2009
LI./	LIA/B/C/D/K/N	690 V Normal Distribution system (CI)	CI	P4	ETDOFC080266	A1	19/09/2009
LI./	LIA/B/C/D/K/N	690 V Normal Distribution system (CI)	CI	P5	ETDOFC070274	C1	17/11/2008
LI./	LIF/LII	690 V Normal Distribution system (NI)	BNI	P2	EZE2007EN0055	B	15/12/2008
LI./	LIF/LII	690 V Normal Distribution system (NI)	BNI	P5	EZE2007EN0053	D	29/10/2008
LJ./	LJi	690VAC Emergency Power Supply System	BNI	P2	EZE2007EN0010	C	15/12/2008
LJ./	LJi	690VAC Emergency Power Supply System	BNI	P5	EZE2007EN0019	D	29/10/2008
LJ./	LJL-LJM	690VAC Secured Power Supply System	CI	P5	ETDOFC070288	C1	30/11/2009
LJP/	LJP/LJS	690 V Emergency diesel generators	BNI	SR	ECEF060964	B1	12/04/2010
LJP/	LJP/LJS	690 V Emergency diesel generators	BNI	P3	EYTS2008FR0068	B1	20/10/2009
LJP/	LJP/LJS	690 V Emergency diesel generators	BNI	P5	EYTS2008FR0034	B1	21/10/2009
LK./	LKA/B/C/D LKF/G/H/I	400 V normal distribution CI	CI	P2	ETDOFC080199	A1	15/10/2009
LK./	LKA/B/C/D LKF/G/H/I	400 V normal distribution CI	CI	P3	ETDOFC080258	A1	16/10/2009
LK./	LKA/B/C/D LKF/G/H/I	400 V normal distribution CI	CI	P4	ETDOFC080265	A1	22/09/2009
LK./	LKA/B/C/D LKF/G/H/I	400 V normal distribution CI	CI	P5	ETDOFC070282	C1	17/11/2008
LK./	LKi	400 V normal distribution NI	BNI	P2	EZE2007EN0038	B	15/12/2008
LK./	LKi	400 V normal distribution NI	BNI	P5	EZE2007EN0052	D	29/10/2008
LL./	LLi	400 V Emergency power supply system	BNI	P2	EZE2007EN0007	C	15/12/2008
LL./	LLi	400 V Emergency power supply system	BNI	P5	EZE2007EN0020	D	29/10/2008

LL/	LLL - LLM	400 V Secured power supply system	CI	P5	ETDOFC070287	C1	30/11/2009
LO./	LOi	400 V Regulated Emergency power supply system, Nuclear Island	BNI	P2	EZE2007EN0006	C	15/12/2008
LO./	LOi	400 V Regulated Emergency power supply system, Nuclear Island	BNI	P5	EZE2007EN0021	D	29/10/2008
LTR/	LTR	Grounding system	BOP	P1	ECEIG081012	A1	07/09/2009
LTR/	LTR	Grounding system	BOP	P2	ECEIG081018	A1	18/09/2009
LTR/	LTR	Grounding system	BOP	P3	ECEIG081035	A1	07/09/2009
LV./	LVi	2h & 12h Uninterruptible Power Supply System	BNI	P2	EZE2007EN0026	C	29/10/2008
LV./	LVi	2h & 12h Uninterruptible Power Supply System	BNI	P5	EZE2007EN0029	B	29/10/2008
LV./	LVL/LVM	400 V uninterrupted power supply (CI)	CI	P5	ETDOFC070286	C1	30/11/2009
PMC/	PMC	Fuel handling – refuelling machine – spent fuel mast bridge - transfer	BNI	SR	ECEMA061033	A1	15/07/2009
PMO/	PMO	Handling tools - lighting - Aspirator - Reactor Building Platform	BNI	SR	ECEMA070399	A1	01/04/2009
PTR/	PTR	Fuel pool cooling and purification system	BNI	P2	SFLEFMF2006712	G1	12/08/2009
PTR/	PTR	Fuel pool cooling and purification system	BNI	P3	EYTF2007FR0055	E	14/09/2009
PTR/	PTR	Fuel pool cooling and purification system	BNI	P4.1	EYRC2006FR0004	B	13/02/2007
PTR/	PTR	Fuel pool cooling and purification system	BNI	P4.2	SFLEFMF20061559	E	28/08/2008
PTR/	PTR	Fuel pool cooling and purification system	BNI	P4	SFLEFMF2006759	F	28/08/2009
PTR/	PTR	Fuel pool cooling and purification system	BNI	P5	SFLEFMF2006751	F	15/09/2009
RBS/	RBS	Emergency boration system	NSSS	P2	NESSFDC535	A	30/04/2009
RBS/	RBS	Emergency boration system	NSSS	P3	NESSFDC536	A	11/05/2009
RBS/	RBS	Emergency boration system	NSSS	P4	NESSFDC537	A	11/05/2009
RBS/	RBS	Emergency boration system	NSSS	P5	NESSFDC615	A	18/11/2009
RCP/	RCP	Reactor coolant system	NSSS	P2	NESSFDC538	A	11/05/2009
RCP/	RCP	Reactor coolant system	NSSS	P3	NESSFDC534	A	30/04/2009
RCP/	RCP	Reactor coolant system	NSSS	P4	NESSFDC545	A	19/06/2009
RCP/	RCP	Reactor coolant system	NSSS	P5	NESSFDC613	A	23/11/2009
RCV/	RCV	Chemical and volume control system	NSSS	P2	NGPS62006EN1008	G	19/12/2008
RCV/	RCV	Chemical and volume control system	NSSS	P3	NGPS62006EN1018	G	18/12/2008
RCV/	RCV	Chemical and volume control system	NSSS	P4	NGPS62006EN1020	H	07/11/2008
RCV/	RCV	Chemical and volume control system	NSSS	P5	NESSG2006EN1014	F	06/08/2008
REA/	REA	Reactor boron and water make-up system	NSSS	P2	SFLEFMF2006401	E1	22/09/2009
REA/	REA	Reactor boron and water make-up system	NSSS	P3	EYTF2007FR0041	C1	22/09/2009
REA/	REA	Reactor boron and water make-up system	NSSS	P4.1	ECEF071383	A	06/03/2008
REA/	REA	Reactor boron and water make-up system	NSSS	P4.2	EYTF2006FR0002	F	22/12/2008
REA/	REA	Reactor boron and water make-up system	NSSS	P4	SFLEFMF2006225	E1	22/09/2009
REA/	REA	Reactor boron and water make-up system	NSSS	P5	SFLEFMF2006593	F1	13/10/2009

REN/	REN	Nuclear island sampling system	BNI	P2	SFLEZS030035	E	09/12/2008
REN/	REN	Nuclear island sampling system	BNI	P3	SFLEZS030036	E	09/12/2008
REN/	REN	Nuclear island sampling system	BNI	P4.1	EZS2006EN0016	B	13/10/2008
REN/	REN	Nuclear island sampling system	BNI	P4.2	EZS2006EN0018	A	16/02/2007
REN/	REN	Nuclear island sampling system	BNI	P4	SFLEZS030037	F	09/12/2008
REN/	REN	Nuclear island sampling system	BNI	P5	EZS2006EN0003	F	30/10/2008
REN/	REN	Nuclear island sampling system	NSSS	P2	NESSFDC625	A	24/11/2009
REN/	REN	Nuclear island sampling system	NSSS	P3	NESSFDC626	A	24/11/2009
REN/	REN	Nuclear island sampling system	NSSS	P4	NESSFDC627	A	24/11/2009
RES/	RES	Steam generators secondary side sampling system	BNI	P1	SFLEZS030029	C	20/04/2007
RES/	RES	Steam generators secondary side sampling system	BNI	P2	SFLEZS030030	C	20/04/2007
RES/	RES	Steam generators secondary side sampling system	BNI	P3	SFLEZS030031	C	20/04/2007
RES/	RES	Steam generators secondary side sampling system	BNI	P4.1	EZS2006EN0015	B	07/07/2008
RES/	RES	Steam generators secondary side sampling system	BNI	P4.2	EZS2006EN0017	A	16/02/2007
RES/	RES	Steam generators secondary side sampling system	BNI	P4	SFLEZS030032	C	02/05/2007
RES/	RES	Steam generators secondary side sampling system	BNI	P5	EZS2006EN0004	C	13/06/2007
RGL/	RGL	Full length rod control system	NSSS	P1	NLEFDC176	A	08/04/2008
RGL/	RGL	Full length rod control system	NSSS	P2	NLEFDC147	A	07/03/2008
RGL/	RGL	Full length rod control system	NSSS	P3	NLEFDC148	A	07/03/2008
RGL/	RGL	Full length rod control system	NSSS	P4	NLEFDC149	A	22/02/2008
RIC/	RIC	In-core instrumentation system	NSSS	P1	NLLNG2008EN1087	A	30/07/2008
RIC/	RIC	In-core instrumentation system	NSSS	P2	NLLNG2008EN1088	A	11/08/2008
RIC/	RIC	In-core instrumentation system	NSSS	P3	NLLNG2008EN1089	A	01/08/2008
RIC/	RIC	In-core instrumentation system	NSSS	P4	NLLNG2008EN1090	A	01/08/2008
RIC/	RIC	In-core instrumentation system	NSSS	P5	NLLNG2008EN1091	A	05/08/2008
RIS/	RIS	Safety injection system	NSSS	P2	NESSFDC539	A	29/05/2009
RIS/	RIS	Safety injection system	NSSS	P3	NESSFDC540	A	27/05/2009
RIS/	RIS	Safety injection system	NSSS	P4	NESSFDC546	A	19/06/2009
RIS/	RIS	Safety injection system	NSSS	P5	NESSFDC614	A	18/11/2009
RPE/	RPE	Nuclear island vent and drain system	BNI	P2	SFLEZS030018	F	15/10/2008
RPE/	RPE	Nuclear island vent and drain system	BNI	P3	SFLEZS030019	F	15/07/2008
RPE/	RPE	Nuclear island vent and drain system	BNI	P4.1	EZS2007EN0021	A	11/10/2007
RPE/	RPE	Nuclear island vent and drain system	BNI	P4.2	EZS2007EN0022	C	14/11/2008
RPE/	RPE	Nuclear island vent and drain system	BNI	P4	SFLEZS030020	D	18/10/2007
RPE/	RPE	Nuclear island vent and drain system	BNI	P5	SFLEZS030055	F	06/11/2008
RPE/	RPE	Nuclear island vent and drain system	BR	P2	NESSFDC608	A	23/11/2009
RPE/	RPE	Nuclear island vent and drain system	BR	P3	NESSFDC609	A	23/11/2009
RPE/	RPE	Nuclear island vent and drain system	BR	P4	NESSFDC610	A	10/11/2009
RPE/	RPE	Nuclear island vent and drain system	BR	P5	NESSFDC616	A	17/11/2009
RPE/	8RPE	Nuclear island vent and drain system in ETB	ETB	P2	EYTF2008FR0010	A1	30/09/2009
RPE/	8RPE	Nuclear island vent and drain system in ETB	ETB	P4.2	EYTF2007FR0043	C	31/10/2008
RPE/	8RPE	Nuclear island vent and drain system in ETB	ETB	P4	EYTF2007FR0044	C1	05/10/2009
RPE/	8RPE	Nuclear island vent and drain system in ETB	ETB	P5	EYTF2008FR0047	B1	05/10/2009
RPN/	RPN	Nuclear instrumentation system	NSSS	P1	NLLNG2008EN1092	A	24/07/2008
RPN/	RPN	Nuclear instrumentation system	NSSS	P2	NLLNG2008EN1093	A	25/07/2008
RPN/	RPN	Nuclear instrumentation system	NSSS	P3	NLLNG2008EN1094	A	25/07/2008

RPN/	RPN	Nuclear instrumentation system	NSSS	P4	NLLNG2008EN1095	A	25/07/2008
RPN/	RPN	Nuclear instrumentation system	NSSS	P5	NLLNG2008EN1096	A	25/07/2008
RPR/	RPR	Reactor protection system	NSSS	P2	NLEFDC59	C	19/06/2007
RPR/	RPR	Reactor protection system	NSSS	P3	NLEFDC58	C	11/04/2007
RPR/	RPR	Reactor protection system	NSSS	P4	NLEFDC77	B	06/03/2007
RPR/	RPR	Reactor protection system	NSSS	P5	NLEFDC66	E	17/07/2008
RRI/	RRI	Component cooling water system	BNI	P1	EYTS2007FR0155	B1	04/11/2009
RRI/	RRI	Component cooling water system	BNI	P2	SFLEFMF2006446	F1	31/08/2009
RRI/	RRI	Component cooling water system	BNI	P3	SFLEFMF2006416	D	28/08/2009
RRI/	RRI	Component cooling water system	BNI	P4.1	ECEF071334	A	22/04/2008
RRI/	RRI	Component cooling water system	BNI	P4.2	EYTS2007FR0156 - EYTS2007FR0157 - EYTS2007FR0158	F	16/10/2008 16/10/2008 17/10/2008
RRI/	RRI	Component cooling water system	BNI	P4	SFLEFMF2006447	E	31/08/2009
RRI/	RRI	Component cooling water system	BNI	P5	SFLEFMF2006448	F	02/09/2009
SAR	SAR	Control compressed air distribution system	BNI	P1	EZS2007EN0080	B	29/08/2008
SAR	SAR	Control compressed air distribution system	BNI	P2	EZS2007EN0024	C	18/08/2008
SAR	SAR	Control compressed air distribution system	BNI	P3	EZS2007EN0049	C	18/08/2008
SAR	SAR	Control compressed air distribution system	BNI	P4.2	EZS2007EN0069	C	11/08/2008
SAR	SAR	Control compressed air distribution system	BNI	P4	EZS2007EN0050	B	11/08/2008
SAR	SAR	Control compressed air distribution system	BNI	P5	EZS2007EN0115	B	29/08/2008
SEC/	SEC	Essential service water system	BOP	P2	ETDOFC080069	A1	01/09/2009
SEC/	SEC	Essential service water system	BOP	P4	ETDOFC080276	A1	01/09/2009
SEC/	SEC	Essential service water system	BOP	P5	ETDOFC070361	A1	01/09/2009
SED/	SED	Nuclear island demineralized water distribution	BNI	P1	EZS2007EN0128	C	17/12/2008
SED/	SED	Nuclear island demineralized water distribution	BNI	P2	EZS2007EN0090	C	10/11/2008
SED/	SED	Nuclear island demineralized water distribution	BNI	P3	EZS2007EN0091	C	10/11/2008
SED/	SED	Nuclear island demineralized water distribution	BNI	P4	EZS2007EN0092	C	29/10/2008
SED/	SED	Nuclear island demineralized water distribution	BNI	P5	EZS2008EN0010	C	13/10/2008
SEF/	SEF	Water intake coarse filtration and trash removal system	BOP	SDM	ETDOFC070015	A1	04/12/2009
SEK/	SEK	Conventional island liquid waste discharge system	CI/BOP	SR	ETDOIG060270	A1	12/11/2009
SEK/	SEK	Conventional island liquid waste discharge system	CI/BOP	P4.2	23952SEK00014SH	C	25/09/2008
SEK/	SEK	Conventional island liquid waste discharge system	CI/BOP	P5	23952SEK00025DSE	C1	09/12/2008
SEN/	SEN	Cooling raw water system	BOP	SDM	ETDOFC050283	A1	04/12/2009
SER/	SER	Demineralized pH9 water distribution (within nuclear island)	BNI	P2	EZS2007EN0111	C	30/01/2008
SER/	SER	Demineralized pH9 water distribution (within nuclear island)	BNI	P3	EZS2007EN0112	D	30/01/2008
SER/	SER	Demineralized pH9 water distribution (within nuclear island)	BNI	P4	EZS2007EN0113	B	04/12/2007
SER/	SER	Demineralized pH9 water distribution (within nuclear island)	BNI	P5	EZS2008EN0059	A	08/10/2008
SGH/	SGH	Hydrogen distribution system	BNI	P2	SFLEZS030061	D	01/12/2008
SGH/	SGH	Hydrogen distribution system	BNI	P3	SFLEZS030064	D	01/12/2008
SGH/	SGH	Hydrogen distribution system	BNI	P4	SFLEZS030058	D	04/12/2008
SGH/	SGH	Hydrogen distribution system	BNI	P5	EZS2007EN0009	C	28/10/2008

SGN/	SGN	Nitrogen distribution system	BNI	P1	SFLEZS030069	E	17/12/2008
SGN/	SGN	Nitrogen distribution system	BNI	P2	SFLEZS030063	D	06/11/2008
SGN/	SGN	Nitrogen distribution system	BNI	P3	SFLEZS030066	D	06/11/2008
SGN/	SGN	Nitrogen distribution system	BNI	P4	SFLEZS030056	D	01/10/2008
SGN/	SGN	Nitrogen distribution system	BNI	P5	EZS2007EN0010	C	11/11/2008
SGO/	SGO	Oxygen gas distribution system	BNI	P1	SFLEZS030068	E	17/10/2008
SGO/	SGO	Oxygen gas distribution system	BNI	P2	SFLEZS030062	D	09/12/2008
SGO/	SGO	Oxygen gas distribution system	BNI	P3	SFLEZS030065	D	10/12/2008
SGO/	SGO	Oxygen gas distribution system	BNI	P4	SFLEZS030057	E	10/12/2008
SGO/	SGO	Oxygen gas distribution system	BNI	P5	EZS2007EN0011	C	22/10/2008
SIR/	SIR	Chemical reagents injection system	BOP	SDM	23952SIR00010DSE	D1	06/10/2008
SIR/	SIR	Chemical reagents injection system	BNI	P1	EZS2008EN0055	B	01/12/2008
SIR/	SIR	Chemical reagents injection system	BNI	P2	EZS2008EN0044	A	04/11/2008
SIR/	SIR	Chemical reagents injection system	BNI	P3	EZS2008EN0045	A	04/11/2008
SIR/	SIR	Chemical reagents injection system	BNI	P4	EZS2008EN0046	A	04/11/2008
SIR/	SIR	Chemical reagents injection system	BNI	P5	EZS2008EN0050	A	04/11/2008
SNL/	SNL	Steam generator cleaning - Lancing	BOP	SR	ECEMA051005	A1	22/12/2009
SNL/	SNL	Steam generator cleaning - lancing	BOP	P4.2	EYTF2008FR0043	A	30/10/2008
SNL/	SNL	Steam generator cleaning - lancing	BOP	P4	EYTF2008FR0042	A	30/10/2008
SRU/	SRU	Ultimate cooling water system	CI	P2	ETDOFC08 0149	A1	01/09/2009
SRU/	SRU	Ultimate cooling water system	CI	P3	ETDOMA080206	A1	12/08/2009
SRU/	SRU	Ultimate cooling water system	CI	P4.2	ETDOIG070266	C	08/09/2008
SRU/	SRU	Ultimate cooling water system	CI	P5	ETDOFC080070	C1	01/09/2009
TEG/	TEG	Gaseous waste treatment system	BNI	P1	SFLEZS030050	D	15/10/2008
TEG/	TEG	Gaseous waste treatment system	BNI	P2	SFLEZS030051	E	01/09/2008
TEG/	TEG	Gaseous waste treatment system	BNI	P3	SFLEZS030052	E	01/09/2008
TEG/	TEG	Gaseous waste treatment system	BNI	P4.1	ECEF080592	A	17/04/2008
TEG/	TEG	Gaseous waste treatment system	BNI	P4.2	EZS2007EN0007	D	12/09/2008
TEG/	TEG	Gaseous waste treatment system	BNI	P4	SFLEZS030053	D	12/09/2008
TEG/	TEG	Gaseous waste treatment system	BNI	P5	EZS2007EN0015	C	15/10/2008
TEN/	TEN	Waste building sampling treatment sytem	ETB	P1	EYTS2008FR0016	A1	19/08/2009
TEN/	TEN	Waste building sampling treatment sytem	ETB	P2	EYTS2007FR0038	B1	19/08/2009
TEN/	TEN	Waste building sampling treatment sytem	ETB	P3	EYTS2007FR0174	B1	19/08/2009
TEN/	TEN	Waste building sampling treatment sytem	ETB	P4.1	EYTS2007FR0101	A	26/04/2007
TEN/	TEN	Waste building sampling treatment sytem	ETB	P4.2	EYTS2007FR0039	B	13/11/2007
TEN/	TEN	Waste building sampling treatment sytem	ETB	P4	EYTS2007FR0040	B1	19/08/2009
TEP/	TEP	Coolant purification degasification storage and treatment system	BNI	P2	SFLEZS030008	G	31/10/2008
TEP/	TEP	Coolant purification degasification storage and treatment system	BNI	P3	SFLEZS030009	F	31/10/2008
TEP/	TEP	Coolant purification degasification storage and treatment system	BNI	P4.1	EZS2006EN0008	A	27/10/2006
TEP/	TEP	Coolant purification degasification storage and treatment system	BNI	P4.2	EZS2006EN0009	F	31/10/2008
TEP/	TEP	Coolant purification degasification storage and treatment system	BNI	P4	SFLEZS030010	E	04/09/2008
TEP/	TEP	Coolant purification degasification storage and treatment system	BNI	P5	SFLEZS030077	F	06/11/2008
TES/	3TES 11	Complementary liquid waste treatment system	ETB	P2	SFLEZM200118	B	06/09/2006
TES/	3TES 11	Complementary liquid waste treatment system	ETB	P3	SFLEZM200119	B	08/09/2006
TES/	3TES 21, 31	Solid waste treatment system	BNI	P1	SFLEZS030039	D	16/03/2007
TES/	3TES 21, 31	Solid waste treatment system	BNI	P2	EZS030040	D	16/03/2007
TES/	3TES 21, 31	Solid waste treatment system	BNI	P3	EZS030041	D	16/03/2007
TES/	3TES 21, 31	Solid waste treatment system	BNI	P4.1	EZS2006EN0019	A	16/03/2007

TES/	3TES 21, 31	Solid waste treatment system	BNI	P4.2	EZS2006EN0020	B	16/03/2007
TES/	3TES 21, 31	Solid waste treatment system	BNI	P4	EZS030042	D	16/03/2007
TES/	8TES	Solid waste treatment system	ETB	P1	ECEF080440	A1	08/01/2010
TES/	8TES	Solid waste treatment system	ETB	P2	ECEF070007	B1	08/01/2010
TES/	8TES	Solid waste treatment system	ETB	P3	ECEF070008	B1	11/01/2010
TES/	8TES	Solid waste treatment system	ETB	P4.1	ECEF080624	A	17/04/2008
TES/	8TES	Solid waste treatment system	ETB	P4.2	ECEF071498	B	15/01/2008
TES/	8TES	Solid waste treatment system	ETB	P4	ECEF080573	A1	11/01/2010
TES/	8TES	Solid waste treatment system	ETB	P5	ECEF080380	A1	11/01/2010
TEU/	TEU	Liquid waste treatment system	ETB	P2	ECEF070502	A1	12/01/2010
TEU/	TEU	Liquid waste treatment system	ETB	P3	ECEF070503	A1	13/01/2010
TEU/	TEU	Liquid waste treatment system	ETB	P4.1	ECEF072208	A	13/11/2007
TEU/	TEU	Liquid waste treatment system	ETB	P4.2	ECEF071497	B	15/01/2008
TEU/	TEU	Liquid waste treatment system	ETB	P4	ECEF070504	A1	19/05/2010
TEU/	TEU	Liquid waste treatment system	ETB	P5	ECEF071379	A	17/12/2008
TRI/	TRI	Waste auxiliary components cooling system	ETB	P1	EYTS2007FR0228	B1	20/11/2009
TRI/	TRI	Waste auxiliary components cooling system	ETB	P2	EYTS2007FR0036	B1	24/11/2009
TRI/	TRI	Waste auxiliary components cooling system	ETB	P3	EYTS2007FR0037	C1	24/11/2009
TRI/	TRI	Waste auxiliary components cooling system	ETB	P4.2	EYTS2007FR0069	C	12/08/2008
TRI/	TRI	Waste auxiliary components cooling system	ETB	P4	EYTS2007FR0070	C1	25/11/2009
TRI/	TRI	Waste auxiliary components cooling system	ETB	P5	EYTS2007FR0115	D1	25/11/2009
VDA/	VDA	Atmospheric steam dump system	NSSS	P1	NESSFDC624	A	04/12/2009
VDA/	VDA	Atmospheric steam dump system	NSSS	P2	NESSFDC580	A	23/11/2009
VDA/	VDA	Atmospheric steam dump system	NSSS	P3	NESSFDC581	A	23/11/2009
VDA/	VDA	Atmospheric steam dump system	NSSS	P4	NESSFDC595	A	24/09/2009
VDA/	VDA	Atmospheric steam dump system	NSSS	P5	NESSFDC630	A	04/12/2009
VVP/	VVP	Main steam system, relief valves and vents, SG valves	NSSS	P1	NESSFDC623	A	04/12/2009
VVP/	VVP	Main steam system, relief valves and vents, SG valves	NSSS	P2	NESSFDC578	A	23/11/2009
VVP/	VVP	Main steam system, relief valves and vents, SG valves	NSSS	P3	NESSFDC579	A	23/11/2009
VVP/	VVP	Main steam system, relief valves and vents, SG valves	NSSS	P4	NESSFDC594	A	24/09/2009
VVP/	VVP	Main steam system, relief valves and vents, SG valves	NSSS	P5	NESSFDC629	A	05/03/2010

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ANNEX 2

List of Changes Included in End of 2008 Design Freeze⁴

Notes:

Note 1: GDA design reference based on SDMs versions included in design freeze 2008 and will require update post-GDA to include agreed GDA design changes, classification methodology application results, etc. as outlined in UKEPR-0019-001 Issue 01, "Specification for System Design Manual Update Post GDA"

Note 2: Design changes taken forward with handover packages are compiled and summarised in UKEPR-0020-001 Issue 01, "Handover Document for GDA Design Changes"

CMF ⁵ number	CMF Origin (FA3 or UK Specific)	Related GDA Issue	CMF Status - Confirmed Categorisation	Title	DF2008 SDMs to be updated (See Note 1)	Fully implemented in GDA (YES) or Handover package (HOP) (See Note 2)
CMF001	FA3	N/A	Stage 3 Rev A – signed – A2 confirmed	Change in the power distribution following the Forsmark event	LV, LA	YES
CMF002	FA3	N/A	Stage 3 Rev A – signed – A2 confirmed	Suppression of automatic isolation of PTR main cooling trains	PTR	YES
CMF003	FA3	N/A	Stage 3 Rev A – signed – A2 confirmed	Creation of a "permissive" for the fuel handling in reactor "state E"	PTR	YES
CMF004	FA3	N/A	Stage 3 Rev A signed – A2 confirmed	Protection against the emptying of pools (PTR & RIS)	RIS, RPE, RPR	HOP signed and completed

⁴ For design changes originating from FA3, the corresponding FA3 reference is available in CMF – Stage 1

⁵ CMF = Change Management Form

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CMF ⁵ number	CMF Origin (FA3 or UK Specific)	Related GDA Issue	CMF Status - Confirmed Categorisation	Title	DF2008 SDMs to be updated (See Note 1)	Fully implemented in GDA (YES) or Handover package (HOP) (See Note 2)
CMF005	FA3	N/A	Stage 3 Rev A signed – A2 confirmed	Soda injection	RIS	HOP signed and completed
CMF006	FA3	N/A	Stage 3 Rev A signed – A2 confirmed	Implementation of "advanced pH concept"	RCV	HOP signed and completed
CMF007	FA3	N/A	Stage 3 Rev A signed – A2 confirmed	Implementation of a new signal in the PS (RIGZ in cold shutdown state)	RPR	HOP signed and completed
CMF008	FA3	N/A	Stage 3 Rev A signed – A2 confirmed	Specification of the I&C for Severe Accident monitoring	EDE	HOP signed and completed
CMF009	FA3	N/A	Stage 3 Rev A signed – A2 confirmed	Addition of a third RCV [CVCS] demineraliser	TES	HOP signed and completed
CMF010	FA3	N/A	Stage 3 Rev A signed – A1 confirmed	Increase in partial cooling gradient	VDA, RCP, ASG	HOP signed and completed
CMF011	FA3	N/A	Stage 3 Rev A signed – A2 confirmed	Dedicated standard I&C cabinets for RRC-B situations	SRU, EDE, EVU, KRT, PTR, ETY, DWL, RCP, RIC, RIS and LVS, LVP, LVF, LVD, LVA, LOI, LOF, LKN, LKK, LJD, LJA, LJZ, KSC, KCO	HOP signed and completed
CMF012	FA3	N/A	Stage 3 Rev A signed – A2 confirmed	Implementation of new functions in the PS	RRI, RPR	HOP signed and completed

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ANNEX 3

List of Changes Introduced After the End of 2008 Design Freeze⁶

Notes:

- Note 1: *GDA design reference based on SDMs versions included in design freeze 2008 and will require update post-GDA to include agreed GDA design changes, classification methodology application results, etc. as outlined in UKEPR-0019-001 Issue 01, “Specification for System Design Manual Update Post GDA”*
- Note 2: *Design changes taken forward with handover packages are compiled and summarised in UKEPR-0020-001 Issue 01, “Handover Document for GDA Design Changes”*

CMF ⁷ number	CMF Origin (FA3 or UK Specific)	Related GDA Issue	CMF status – confirmed categorisation	GDA INSA Review Status	Title	SDMs DF2008 impacted (See Note 1)	Fully implemented in GDA (YES) or Handover package (HOP) (See Note 2)
CMF013	UK Specific	N/A	Stage 3 Rev B signed – A1 confirmed	INSA performed	RCCA design	N/A	HOP Rev B signed and completed

⁶ For design changes originating from FA3, the corresponding FA3 reference is available in CMF – Stage 1.

⁷ CMF = Change Management Form

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CMF014	UK Specific	GI-UKEPR- CI01	Stage 3 Rev A signed = A1 confirmed	INSA performed	C&I non-computerised back-up system	AAD, ARE, APG, ASG, DER, EBA, EDE, EPP, EVU, GSE, JPI, KRT, KC LHP/Q/R/S, PTR, RBS, RCP, RCV, REN, RGL, RIS, RPE, RPN, RRI, SED, SGN, TEG, VVP, SEC, SRU, RES, KSC	HOP signed and completed
CMF015	UK Specific	GI-UKEPR- CI06	Stage 3 Rev A signed = A1 confirmed	INSA performed	Communication of PS with other systems	KSC, KC, KIC, RPR	HOP signed and completed
CMF016	UK Specific	N/A	Stage 3 Rev B signed – A2 confirmed	N/A	Door control measures for doors installed within Safety Fire Compartment	SDM to be created in NSL	HOP Rev B signed and completed

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CMF ⁷ number	CMF Origin (FA3 or UK Specific)	Related GDA Issue	CMF status – confirmed categorisation	GDA INSA Review Status	Title	SDMs DF2008 impacted (See Note 1)	Fully implemented in GDA (YES) or Handover package (HOP) (See Note 2)
CMF017	UK Specific	N/A	Stage 3 Rev A signed – A2 confirmed	INSA performed	SG and PZR Material (20MND5)	RCP	HOP signed and completed
CMF018	UK Specific	N/A	Stage 3 Rev A signed – A2 confirmed	N/A	Liner Floor Anchorage	None	HOP signed and completed
CMF019	FA3	N/A	Stage 3 Rev A signed – A2 confirmed	N/A	Reduction of microtherm in PZR support area	RCP	HOP signed and completed
CMF020	FA3	N/A	Stage 3 Rev B signed – A2 confirmed	N/A	Confinement – Modification of HVAC systems	EBA, DWL, DWK, EDE and TEG	HOP Rev B signed and completed
CMF021	FA3	N/A	Stage 3 Rev A signed – A2 confirmed	N/A	Average Coolant Temperature (ACT) and PZR Level LCO Modification at low Power	GCT	HOP signed and completed
CMF022	UK Specific	GI-UKEPR-FS04	Stage 3 Rev A signed – A2 confirmed	N/A	Functional classification of KRT activity detection channels	KRT, RES, RRI, RPE, SED RPR.	HOP signed and completed
CMF023	UK Specific	GI-UKEPR-FS02	Stage 3 Rev A signed – A2 confirmed	N/A	Additional reactor trips to SAS I&C system	RCP	HOP signed and completed
CMF024	UK Specific	GI-UKEPR-CC01	Stage 3 Rev A signed – A1 confirmed	INSA performed	RO 43 impact on SSC Classification	All systems	HOP signed and completed
CMF025	FA3	N/A	Stage 3 Rev A signed – A2 confirmed	N/A	Automatic Actuation of EBS on low SG pressure in 1 SG	RCP, RBS, RPR	HOP signed and completed

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CMF026	UK Specific	GI-UKEPR-CI06	Stage 3 Rev A signed – A1 confirmed	INSA performed	Class 1 Information and Controls in MCR and RSS (QDS)	RPR	HOP signed and completed
CMF027	UK Specific	N/A	Stage 3 Rev A signed – A2 confirmed	N/A	Safety Information and Control System Class Upgrade (class 1)	RPR	HOP signed and completed
CMF028	FA3	N/A	Stage 3 Rev B signed – A2 confirmed	N/A	Monophasic Start Up Mode	RCP, RCV	HOP Rev B signed and completed
CMF029	UK Specific	GI-UKEPR-CI05	Stage 3 Rev A signed – A2 confirmed	N/A	Change SPPA-T2000 platform version from S5 to S7 (S5 obsolescence)	None	HOP signed and completed
CMF030	UK Specific	GI-UKEPR-CC01	Stage 3 Rev A signed – A2 confirmed	N/A	Use of Nuclear Codes for Class 2 Components	ASG, RBS, RCV, RCP, VVP, VDA, ARE, CFI, DEL, PTR, JPV, REN, RIS	HOP signed and completed
CMF031	UK Specific	GI-UKPER-SI01	Stage 3 Rev A signed – A1 confirmed	INSA performed	MCL – Lowering of U-Leg	RCP, RCV, RIS	HOP signed and completed
CMF032	UK Specific	GI-UKEPR-SI01	Stage 3 Rev A signed – A2 confirmed	N/A	MCL Welds Counterbore Extension	None	HOP signed and completed
CMF033 ^(*)	FA3	GI-UKEPR-CC01	Stage 3 Rev A signed – High Level Impact Analysis Completed –	N/A	Implementation of an Automatic Class 1 Signal Isolation	REN, TEG, KRT, PTR, RIS, RCV, RPR, RPE	HOP Rev B signed and completed

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CMF ⁷ number	CMF Origin (FA3 or UK Specific)	Related GDA Issue	CMF status – confirmed categorisation	GDA INSA Review Status	Title	SDMs DF2008 impacted (See Note 1)	Fully implemented in GDA (YES) or Handover package (HOP) (See Note 2)
			Initial categorisation A2				
CMF034	UK Specific	GI-UKEPR-IH01	Stage 3 Rev A signed – A2 confirmed	N/A	Dropped Loads – Reactor Cavity Floor Shear Reinforcement	None	HOP signed and completed
CMF035	UK Specific	GI-UKEPR-IH01	Stage 3 Rev A signed – A2 confirmed	N/A	Dropped Loads – I&C Control measures	RCP, RIS, RCV	HOP signed and completed
CMF036	UK Specific	GI-UKEPR-CC01	Stage 3 Rev A signed – A2 confirmed	N/A	Classification – Diverse lines of protection	ARE, RBS, RCV, RCP, PTR, EVU, SRU	HOP signed and completed
CMF037	UK Specific	GI-UKEPR-CC01	Stage 3 Rev A signed – A2 confirmed	N/A	Classification – UDG diesel generators	LJP, DVD	HOP signed and completed
CMF038	UK Specific	GI-UKEPR-CC01	Stage 3 Rev A signed – A2 confirmed	N/A	Classification – Spent fuel pool cooling system	PTR, SEC, RRI	HOP signed and completed
CMF039 ^(*)	FA3	GI-UKEPR-CC01 GI-UKEPR-FS05 GI-UKEPR-HF01	Stage 3 Rev A signed – High Level Impact Analysis Completed – Initial categorisation A2	N/A	Motorisation of EFWS valves	ASG, KSC, LV, LHP	HOP signed and completed

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CMF ⁷ number	CMF Origin (FA3 or UK Specific)	Related GDA Issue	CMF status – confirmed categorisation	GDA INSA Review Status	Title	SDMs DF2008 impacted (See Note 1)	Fully implemented in GDA (YES) or Handover package (HOP) (See Note 2)
CMF040 ^(*)	UK Specific	GI-UKEPR- CC01 GI-UKEPR- CI06	Stage 3 Rev A signed – High Level Impact Analysis Completed – Initial categorisation A2	N/A	Functional Scope Allocation of Main Reactor Controls	RCP, RIS, RCV, ARE, VDA	HOP signed and completed
CMF041 ^(*)	UK Specific	GI-UKEPR- FS05	Stage 3 Rev A signed – High Level Impact Analysis Completed – Initial categorisation A1	INSA to be performed	Fault Studies – Loss of Essential Support Systems – DVL/DEL [SBVSE/SCWS] Modifications	DEL, DVL, DER I&C systems – depending on detailed design analysis	HOP signed and completed
CMF042 ^(*)	UK Specific	GI-UKEPR- FS05	Stage 3 Rev A signed – High Level Impact Analysis Completed – Initial categorisation A1	INSA to be performed	FS05 – Design improvements linked with RRI [CCWS] cooling functions	RRI, RCP	HOP signed and completed
CMF043	FA3	GI-UKEPR- CC02	Stage 3 Rev A signed – A2 confirmed	N/A	Consistency review of the 2008 Design Freeze – Fault studies	PTR,	HOP signed and completed
CMF044	FA3	GI-UKEPR- CC02	Stage 3 Rev A signed – A2 confirmed	N/A	Consistency review of the 2008 Design Freeze – Reactor Chemistry	RCV, RPE, RIS	HOP signed and completed
CMF045	FA3	GI-UKEPR- CC02	Stage 3 Rev A signed – A2 confirmed	N/A	Consistency review of the 2008 Design Freeze – Internal Hazards	KRT, TEG, DWN, RCV, EBA, DWL, DWK	HOP signed and completed

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CMF ⁷ number	CMF Origin (FA3 or UK Specific)	Related GDA Issue	CMF status – confirmed categorisation	GDA INSA Review Status	Title	SDMs DF2008 impacted (See Note 1)	Fully implemented in GDA (YES) or Handover package (HOP) (See Note 2)
CMF046	FA3	GI-UKEPR-CC02	Stage 3 Rev A signed – A2 confirmed	N/A	Consistency review of the 2008 Design Freeze – Mechanical Engineering	ASG, JAC, PTR, LHP, LJP, JPI, RIS, DEL, RRI, DMK, EVU, RCV	HOP signed and completed
CMF047 ^(*)	FA3	GI-UKEPR-CC03	Stage 3 Rev B signed – High Level Impact Analysis Completed – Initial categorisation A2	N/A	FKA – Task 4 – Severe Accident Addition of a sound powered telephone network to the DTV system	None	HOP Rev B signed and completed
CMF048 ^(*)	FA3	GI-UKEPR-CC03	Stage 3 Rev B signed – High Level Impact Analysis Completed – Initial categorisation A2	N/A	FKA – Task 2 – Flooding	None	HOP Rev B signed and completed
CMF049 ^(*)	FA3	GI-UKEPR-CC03	Stage 3 Rev B signed – High Level Impact Analysis Completed – Initial categorisation A2	N/A	FKA – Task 3&4 – Loss of Electrical power/ Heat Sink & Severe Accident Robustness and management of Power Sources	PTR, EVU, LLI, LJi, LV, LHP, LJP, LL	HOP Rev C signed and completed
CMF050 ^(*)	FA3	GI-UKEPR-CC03	Stage 3 Rev B signed – High Level Impact Analysis Completed – Initial categorisation A2	N/A	FKA – Task 3 & 4 – Loss of Electrical power/ Heat Sink & Severe Accident – Design Against Seismic Events	PTR, JPI, ASG, DWK, ETY, EVU	HOP Rev C signed and completed
CMF051 ^(*)	FA3	GI-UKEPR-CC03	Stage 3 Rev B signed – High Level Impact Analysis Completed – Initial categorisation A2	N/A	FKA – Task 3 & 4 – Loss of Electrical power/ Heat Sink & Severe Accident Fuel strategies	PTR, KRT, PMC	HOP Rev B signed and completed

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CMF ⁷ number	CMF Origin (FA3 or UK Specific)	Related GDA Issue	CMF status – confirmed categorisation	GDA INSA Review Status	Title	SDMs DF2008 impacted (See Note 1)	Fully implemented in GDA (YES) or Handover package (HOP) (See Note 2)
CMF052	UK Specific	GI-UKEPR-CC01	Stage 3 Rev A signed – A2 confirmed	N/A	Upgrade of RIS [SIS] Accumulators to M2	RIS	HOP signed and completed
CMF053 ^(*)	UK Specific	GI-UKEPR-CC01	Stage 3 Rev A signed – High Level Impact Analysis Completed – Initial categorisation A2	N/A	Earthing System (LTR) Classification	LTR	HOP signed and completed
CMF054 ^(*)	UK Specific	GI-UKEPR-FS01	Stage 3 Rev A signed – High Level Impact Analysis Completed – Initial categorisation A2	N/A	RPR [PS] interlock for RCP [RCS] pump start up	RPR, RCP, RCV	HOP signed and completed
CMF055 ^(*)	UK Specific	GI-UKEPR-FS01	Stage 3 Rev A signed – High Level Impact Analysis Completed – Initial categorisation A2	N/A	ALARP improvement of the isolation of the RRI [CCWS] heat exchangers to prevent heterogeneous dilution in shutdown states	RRI, RCP, RCV, RIS, RPR I&C systems – depending on detailed design analysis	HOP signed and completed
CMF056 ^(*)	UK Specific	GI-UKEPR-IH03	Stage 3 Rev A signed – High Level Impact Analysis Completed – Initial categorisation A2	N/A	Internal Flooding – Design Modification of Fire-Fighting System (JPI) in the Annulus	JPI I&C systems – depending on detailed design analysis	HOP signed and completed
CMF057 ^(*)	UK Specific	GI-UKEPR-IH03	Stage 3 Rev A signed – High Level Impact Analysis Completed – Initial categorisation A2	N/A	Internal Flooding – Design Modification of Essential Service Water System (SEC) in the Safety Auxiliary Building	SEC, RPE I&C systems – depending on detailed design	HOP Rev B signed and completed

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CMF ⁷ number	CMF Origin (FA3 or UK Specific)	Related GDA Issue	CMF status – confirmed categorisation	GDA INSA Review Status	Title	SDMs DF2008 impacted (See Note 1)	Fully implemented in GDA (YES) or Handover package (HOP) (See Note 2)
						analysis	
CMF058 ^(*)	UK Specific	GI-UKEPR-IH03	Stage 3 Rev A signed – High Level Impact Analysis Completed – Initial categorisation A2	N/A	Internal Flooding – Design Modification of Distribution of Demineralised Reactor Water System (SED) in the Annulus	SED, RPE I&C systems – depending on detailed design analysis	HOP signed and completed
CMF059 ^(*)	UK Specific	GI-UKEPR-FS02	Stage 3 Rev A signed – High Level Impact Analysis Completed – Initial categorisation A2	N/A	Diverse protection function for RCV homogeneous boron dilution events in shutdown states	RPN, RBS, REN, RCV	HOP signed and completed
CMF060 ^(*)	UK Specific	GI-UKEPR-CI01	Stage 3 Rev A signed – High Level Impact Analysis Completed – Initial categorisation A2	N/A	Classification of maintenance and testing tools of C&I systems	None	HOP signed and completed
CMF061 ^(*)	UK Specific	GI-UKEPR-CI06	Stage 3 Rev A signed – High Level Impact Analysis Completed – Initial categorisation A2	N/A	Classification of the RodPilot™	None	HOP signed and completed
CMF062 ^(*)	UK Specific	GI-UKEPR-CI04	Stage 3 Rev A signed – High Level Impact Analysis Completed – Initial categorisation A2	N/A	Qualification of SMART devices in UK context	None	HOP signed and completed
CMF063 ^(*)	UK Specific	GI-UKEPR-CI06	Stage 3 Rev A signed – High Level Impact Analysis Completed –	N/A	Independent confidence building measures on software based C&I systems	None	HOP signed and completed

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CMF ⁷ number	CMF Origin (FA3 or UK Specific)	Related GDA Issue	CMF status – confirmed categorisation	GDA INSA Review Status	Title	SDMs DF2008 impacted (See Note 1)	Fully implemented in GDA (YES) or Handover package (HOP) (See Note 2)
			Initial categorisation A2				
CMF064 ^(*)	UK Specific	GI-UKEPR-CI06	Stage 3 Rev A signed – High Level Impact Analysis Completed – Initial categorisation A2	N/A	C&I diversity on sensors and sensor conditioning	RPN	HOP signed and completed
CMF065 ^(*)	UK Specific	GI-UKEPR-CI06	Stage 3 Rev A signed – High Level Impact Analysis Completed – Initial categorisation A2	N/A	C&I diversity on PAC modules	None	HOP signed and completed
CMF066 ^(*)	UK Specific	GI-UKEPR-CI06	Stage 3 Rev A signed – High Level Impact Analysis Completed – Initial categorisation A2	N/A	Protection System Reference Configuration	RPR, ASG	HOP signed and completed
CMF067 ^(*)	UK Specific	GI-UKEPR-CI06	Stage 3 Rev A signed – High Level Impact Analysis Completed – Initial categorisation A2	N/A	Addition of secondary side (VVP) pressure measurements	VVP, RPN	HOP signed and completed
CMF068 ^(*)	UK Specific	GI-UKEPR-CI01	Stage 3 Rev A signed – High Level Impact Analysis Completed – Initial categorisation A2	N/A	Non Computerized Safety System Design Improvement	RPN, RPR, AAD, ARE, RCP, RCV, ASG, EDE, EVU, LHP, RIS, RRI, VVP, LHA/B/C/D, LV/LA	HOP signed and completed

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CMF ⁷ number	CMF Origin (FA3 or UK Specific)	Related GDA Issue	CMF status – confirmed categorisation	GDA INSA Review Status	Title	SDMs DF2008 impacted (See Note 1)	Fully implemented in GDA (YES) or Handover package (HOP) (See Note 2)
CMF069 ^(*)	FA3	GI-UKEPR- CC02	Stage 3 Rev A signed – High Level Impact Analysis Completed – Initial categorisation A2	N/A	GDA Deliverables Consistency Review	RIS, EVR, DWK, PTR, DFL, DVL, RPE, JPI, DWN, JDT	HOP signed and completed
CMF070 ^(*)	UK Specific	GI-UKEPR- FS03	Stage 3 Rev A signed – High Level Impact Analysis Completed – Initial categorisation A1	INSA to be performed	Addition of removable standpipes and covers on the penetrations at the bottom of the HR-HK pool compartments	PTR	HOP signed and completed
CMF071 ^(*)	UK Specific	GI-UKEPR- FS03	Stage 3 Rev A signed – High Level Impact Analysis Completed – Initial categorisation A1	INSA to be performed	Upgrade of the SFP emergency make up to Class 1	JAC, JPI, PTR, ASG	HOP signed and completed
CMF072 ^(*)	UK Specific	GI-UKEPR- FS03	Stage 3 Rev A signed – High Level Impact Analysis Completed – Initial categorisation A1	INSA to be performed	Fuel transfer tube modification	None	HOP signed and completed
CMF073 ^(*)	UK Specific	GI-UKEPR- FS03	Stage 3 Rev A signed – High Level Impact Analysis Completed – Initial categorisation A1	INSA to be performed	Removal of personnel access doors located on the fuel path	None	HOP signed and completed
CMF074 ^(*)	UK Specific	GI-UKEPR- FS03	Stage 3 Rev A signed – High Level Impact Analysis Completed – Initial categorisation A1	INSA to be performed	Change of cask procedure	DMK	HOP signed and completed

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CMF ⁷ number	CMF Origin (FA3 or UK Specific)	Related GDA Issue	CMF status – confirmed categorisation	GDA INSA Review Status	Title	SDMs DF2008 impacted (See Note 1)	Fully implemented in GDA (YES) or Handover package (HOP) (See Note 2)
CMF075 ^(*)	UK Specific	GI-UKEPR- FS05	Stage 3 Rev A signed – High Level Impact Analysis Completed – Initial categorisation A1	INSA to be performed	Management of scenarios without availability of RBS [EBS] trains or of two neighbouring Electrical and C&I divisions		HOP signed and completed
CMF076 ^(*)	FA3	GI-UKEPR- FS05	Stage 3 Rev A signed – High Level Impact Analysis Completed – Initial categorisation A1	INSA to be performed	Connection of reactor coolant pump (RCP) thermal barrier cooling system	RRI, RCP I&C systems – depending on detailed design analysis	HOP signed and completed
CMF077 ^(*)	UK Specific	GI-UKEPR- FS05	Stage 3 Rev A signed – High Level Impact Analysis Completed – Initial categorisation A1	INSA to be performed	DCL [CRACS] modifications		HOP signed and completed
CMF078 ^(*)	UK Specific	GI-UKEPR- FS05	Stage 3 Rev A signed – High Level Impact Analysis Completed – Initial categorisation A1	INSA to be performed	Solutions to manage common cause failures (CCF) on LJ*and LV* electrical switchboards	LV, LJ, RRI, PTR, DEL, DVL, DCL, APG, RCV	HOP signed and completed
CMF079 ^(*)	UK Specific	GI-UKEPR- FS05	Stage 3 Rev A signed – High Level Impact Analysis Completed – Initial categorisation A1	INSA to be performed	Modifications to manage the Total Loss Of Cooling Chain (TLOCC)		HOP signed and completed
CMF080 ^(*)	UK Specific	GI-UKEPR- FS05	Stage 3 Rev A signed – High Level Impact Analysis Completed –	INSA to be performed	Reduce the frequency of the failure of the DVP system coming from CCF	DVP	HOP signed and completed

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CMF ⁷ number	CMF Origin (FA3 or UK Specific)	Related GDA Issue	CMF status – confirmed categorisation	GDA INSA Review Status	Title	SDMs DF2008 impacted (See Note 1)	Fully implemented in GDA (YES) or Handover package (HOP) (See Note 2)
			Initial categorisation A1				
CMF081 ^(*)	FA3	GI-UKEPR-CC02	Stage 3 Rev B signed – High Level Impact Analysis Completed – Initial categorisation A2	N/A	C&I - Reference Configuration - Design Freeze 2008 Consistency Review	RPR, RCP, VDA, KC, RGL, RCSL	HOP Rev B signed and completed
CMF082 ^(*)	UK Specific	GI-UKEPR-CC02	Stage 3 Rev A signed – High Level Impact Analysis Completed – Initial categorisation A2	N/A	New Fuel Dry Storage Rack – Modification of the Upper Support Frame	None	HOP signed and completed

^(*) CMFs raised after cut-off date of 31st May 2012, initial high-level impact analysis and initial categorisation have been completed.