

CONTENTS OF THE PCSR

CHAPTER 1 - INTRODUCTION AND GENERAL DESCRIPTION

SUB-CHAPTER 1.1 INTRODUCTION

SUB-CHAPTER 1.2 GENERAL DESCRIPTION OF THE UNIT

SUB-CHAPTER 1.3 COMPARISON WITH REACTORS OF SIMILAR DESIGN

SUB-CHAPTER 1.4 COMPLIANCE WITH REGULATIONS

SUB-CHAPTER 1.5 SAFETY ASSESSMENT AND INTERNATIONAL PRACTICE

CHAPTER 2 - GENERIC SITE ENVELOPE AND DATA

SUB-CHAPTER 2.1 SITE DATA USED IN THE SAFETY ANALYSES

SUB-CHAPTER 2.2 SITE ENVIRONMENTAL CHARACTERISTICS

CHAPTER 3 - GENERAL DESIGN AND SAFETY ASPECTS

SUB-CHAPTER 3.1 GENERAL SAFETY PRINCIPLES

SUB-CHAPTER 3.2 CLASSIFICATION OF STRUCTURES, EQUIPMENT AND SYSTEMS

SUB-CHAPTER 3.3 DESIGN OF SAFETY CLASSIFIED CIVIL STRUCTURES

SUB-CHAPTER 3.4 MECHANICAL SYSTEMS AND COMPONENTS

SUB-CHAPTER 3.5 SAFETY RELATED INTERFACES

SUB-CHAPTER 3.6 QUALIFICATION OF ELECTRICAL AND MECHANICAL EQUIPMENT FOR ACCIDENT CONDITIONS

SUB-CHAPTER 3.7 CONVENTIONAL RISKS OF NON-NUCLEAR ORIGIN

SUB-CHAPTER 3.8 CODES & STANDARDS USED IN THE EPR DESIGN

APPENDIX 3 COMPUTER CODES USED IN CHAPTER 3

CHAPTER 4 - REACTOR AND CORE DESIGN

SUB-CHAPTER 4.1 SUMMARY DESCRIPTION

SUB-CHAPTER 4.2 FUEL SYSTEM DESIGN

SUB-CHAPTER 4.3 NUCLEAR DESIGN

SUB-CHAPTER 4.4 THERMAL AND HYDRAULIC DESIGN

SUB-CHAPTER 4.5 FUNCTIONAL DESIGN OF REACTIVITY CONTROL

APPENDIX 4A COMPUTER CODES USED IN CHAPTER 4

CHAPTER 5 - REACTOR COOLANT SYSTEM AND ASSOCIATED SYSTEMS

SUB-CHAPTER 5.0 SAFETY REQUIREMENTS

SUB-CHAPTER 5.1 DESCRIPTION OF THE REACTOR COOLANT SYSTEM

SUB-CHAPTER 5.2 INTEGRITY OF THE REACTOR COOLANT PRESSURE BOUNDARY (RCPB)

SUB-CHAPTER 5.3 REACTOR VESSEL

SUB-CHAPTER 5.4 COMPONENTS AND SYSTEMS SIZING

SUB-CHAPTER 5.5 REACTOR CHEMISTRY

CHAPTER 6 - CONTAINMENT AND SAFEGUARD SYSTEMS

SUB-CHAPTER 6.1 MATERIALS

SUB-CHAPTER 6.2	CONTAINMENT SYSTEMS
SUB-CHAPTER 6.3	SAFETY INJECTION SYSTEM (RIS [SIS])
SUB-CHAPTER 6.4	HABITABILITY OF THE CONTROL ROOM
SUB-CHAPTER 6.5	IN-SERVICE INSPECTION PRINCIPLES (EXCLUDING MAIN PRIMARY AND SECONDARY SYSTEMS)
SUB-CHAPTER 6.6	EMERGENCY FEEDWATER SYSTEM (ASG) [EFWS]
SUB-CHAPTER 6.7	EXTRA BORATION SYSTEM (RBS) [EBS]
SUB-CHAPTER 6.8	MAIN STEAM RELIEF TRAIN SYSTEM – VDA [MSRT]
APPENDIX 6A	MER CALCULATIONS - BDR RESULTS

CHAPTER 7 - INSTRUMENTATION AND CONTROL

SUB-CHAPTER 7.1	DESIGN PRINCIPLES OF THE INSTRUMENTATION AND CONTROL SYSTEMS
SUB-CHAPTER 7.2	GENERAL ARCHITECTURE OF THE INSTRUMENTATION AND CONTROL SYSTEMS
SUB-CHAPTER 7.3	CLASS 1 INSTRUMENTATION AND CONTROL SYSTEMS
SUB-CHAPTER 7.4	CLASS 2 INSTRUMENTATION AND CONTROL SYSTEMS
SUB-CHAPTER 7.5	CLASS 3 INSTRUMENTATION AND CONTROL SYSTEMS
SUB-CHAPTER 7.6	INSTRUMENTATION
SUB-CHAPTER 7.7	I&C TOOLS, DEVELOPMENT PROCESS AND SUBSTANTIATION

CHAPTER 8 - ELECTRICAL SUPPLY AND LAYOUT

SUB-CHAPTER 8.1	EXTERNAL POWER SUPPLY
SUB-CHAPTER 8.2	POWER SUPPLY TO THE CONVENTIONAL ISLAND AND BALANCE OF PLANT (BOP)

SUB-CHAPTER 8.3 NUCLEAR ISLAND POWER SUPPLY

SUB-CHAPTER 8.4 SPECIFIC DESIGN PRINCIPLES

SUB-CHAPTER 8.5 INSTALLATION

SUB-CHAPTER 8.6 PREVENTION AND PROTECTION AGAINST
COMMON CAUSE FAILURE

CHAPTER 9 - AUXILIARY SYSTEMS

SUB-CHAPTER 9.1 FUEL HANDLING AND STORAGE

SUB-CHAPTER 9.2 WATER SYSTEMS

SUB-CHAPTER 9.3 PRIMARY SYSTEM AUXILIARIES

SUB-CHAPTER 9.4 HEATING, VENTILATION AND AIR-CONDITIONING
SYSTEMS

SUB-CHAPTER 9.5 OTHER SUPPORTING SYSTEMS

CHAPTER 10 - MAIN STEAM AND FEEDWATER LINES

SUB-CHAPTER 10.1 GENERAL DESCRIPTION

SUB-CHAPTER 10.2 TURBOGENERATOR SET

SUB-CHAPTER 10.3 MAIN STEAM SYSTEM (SAFETY CLASSIFIED
PART)

SUB-CHAPTER 10.4 OTHER FEATURES OF STEAM AND POWER
CONVERSION SYSTEMS

SUB-CHAPTER 10.5 IMPLEMENTATION OF THE BREAK PRECLUSION
PRINCIPLE FOR THE MAIN STEAM LINES INSIDE
AND OUTSIDE THE CONTAINMENT

SUB-CHAPTER 10.6 MAIN FEEDWATER SYSTEM

CHAPTER 11 - DISCHARGES AND WASTE - CHEMICAL AND RADIOLOGICAL

SUB-CHAPTER 11.0 SAFETY REQUIREMENTS

SUB-CHAPTER 11.1 SOURCES OF RADIOACTIVE MATERIALS

SUB-CHAPTER 11.2 DETAILS OF THE EFFLUENT MANAGEMENT PROCESS

SUB-CHAPTER 11.3 OUTPUTS FOR THE OPERATING INSTALLATION

SUB-CHAPTER 11.4 EFFLUENT AND WASTE TREATMENT SYSTEMS DESIGN ARCHITECTURE

SUB-CHAPTER 11.5 INTERIM STORAGE FACILITIES AND DISPOSABILITY FOR UK EPR

CHAPTER 12 - RADIATION PROTECTION

SUB-CHAPTER 12.0 RADIATION PROTECTION REQUIREMENTS

SUB-CHAPTER 12.1 RADIATION PROTECTION APPROACH

SUB-CHAPTER 12.2 DEFINITION OF RADIOACTIVE SOURCES IN THE PRIMARY CIRCUIT

SUB-CHAPTER 12.3 RADIATION PROTECTION MEASURES

SUB-CHAPTER 12.4 DOSE UPTAKE OPTIMISATION

SUB-CHAPTER 12.5 POST-ACCIDENT ACCESSIBILITY

CHAPTER 13 - HAZARDS PROTECTION

SUB-CHAPTER 13.1 EXTERNAL HAZARDS PROTECTION –
RESTRICTED INFORMATION

SUB-CHAPTER 13.2 INTERNAL HAZARDS PROTECTION

CHAPTER 14 - DESIGN BASIS ANALYSIS

- SUB-CHAPTER 14.0 ASSUMPTIONS AND REQUIREMENTS FOR THE PCC ACCIDENT ANALYSES
- SUB-CHAPTER 14.1 PLANT CHARACTERISTICS TAKEN INTO ACCOUNT IN THE ACCIDENT ANALYSES
- SUB-CHAPTER 14.2 ANALYSIS OF THE PASSIVE SINGLE FAILURE
- SUB-CHAPTER 14.3 ANALYSES OF PCC-2 EVENTS
- SUB-CHAPTER 14.4 ANALYSES OF THE PCC-3 EVENTS
- SUB-CHAPTER 14.5 ANALYSES OF THE PCC-4 EVENTS
- SUB-CHAPTER 14.6 RADIOLOGICAL CONSEQUENCES OF DESIGN BASIS ACCIDENTS
- SUB-CHAPTER 14.7 FAULT AND PROTECTION SCHEDULE
- APPENDIX 14A COMPUTER CODES USED IN CHAPTER 14
- APPENDIX 14B 4900 MW SAFETY ANALYSES USED IN CHAPTER 14
- APPENDIX 14C ANALYSIS OF SINGLE FAILURE FOR MAIN STEAM LINE BREAK

CHAPTER 15 - PROBABILISTIC SAFETY ANALYSIS

- SUB-CHAPTER 15.0 SAFETY REQUIREMENTS AND PSA OBJECTIVES
- SUB-CHAPTER 15.1 LEVEL 1 PSA
- SUB-CHAPTER 15.2 PSA FOR INTERNAL AND EXTERNAL HAZARDS – **RESTRICTED INFORMATION**
- SUB-CHAPTER 15.3 PSA OF ACCIDENTS IN THE SPENT FUEL POOL
- SUB-CHAPTER 15.4 LEVEL 2 PSA
- SUB-CHAPTER 15.5 LEVEL 3 PSA: ASSESSMENT OF OFF-SITE RISK DUE TO POSTULATED ACCIDENTS
- SUB-CHAPTER 15.6 SEISMIC MARGIN ASSESSMENT
- SUB-CHAPTER 15.7 PSA DISCUSSION AND CONCLUSIONS

CHAPTER 16 - RISK REDUCTION AND SEVERE ACCIDENT ANALYSES

SUB-CHAPTER 16.1 RISK REDUCTION ANALYSIS (RRC-A)

SUB-CHAPTER 16.2 SEVERE ACCIDENT ANALYSIS (RRC-B)

SUB-CHAPTER 16.3 PRACTICALLY ELIMINATED SITUATIONS

SUB-CHAPTER 16.4 SPECIFIC STUDIES

SUB-CHAPTER 16.5 ADEQUACY OF THE UK EPR DESIGN REGARDING FUNCTIONAL DIVERSITY

APPENDIX 16A COMPUTER CODES USED IN CHAPTER 16

APPENDIX 16B 4900 MW SAFETY ANALYSES USED IN CHAPTER 16

CHAPTER 17 - COMPLIANCE WITH ALARP PRINCIPLE

SUB-CHAPTER 17.1 EXPLANATION OF ALARP REQUIREMENT

SUB-CHAPTER 17.2 DEMONSTRATION OF RELEVANT GOOD PRACTICE IN EPR DESIGN

SUB-CHAPTER 17.3 EPR DESIGN OPTIONEERING

SUB-CHAPTER 17.4 REVIEW OF PSA RESULTS: COMPARISON WITH NUMERICAL RISK TARGETS

SUB-CHAPTER 17.5 REVIEW OF POSSIBLE DESIGN MODIFICATIONS TO CONFIRM DESIGN MEETS ALARP PRINCIPLE

SUB-CHAPTER 17.6 CONCLUSIONS OF EPR ALARP ASSESSMENT

CHAPTER 18 - HUMAN-MACHINE INTERFACE AND OPERATIONAL ASPECTS

SUB-CHAPTER 18.1 HUMAN-MACHINE INTERFACE

SUB-CHAPTER 18.2 NORMAL OPERATION

SUB-CHAPTER 18.3 ABNORMAL OPERATION

CHAPTER 19 - COMMISSIONING

SUB-CHAPTER 19.0 COMMISSIONING SAFETY REQUIREMENTS

SUB-CHAPTER 19.1 PLANT COMMISSIONING PROGRAMME

CHAPTER 20 - DESIGN PRINCIPLES RELATED TO DECOMMISSIONING

SUB-CHAPTER 20.1 GENERAL DECOMMISSIONING PRINCIPLES - REGULATIONS

SUB-CHAPTER 20.2 DECOMMISSIONING - IMPLEMENTATION FOR THE EPR

CHAPTER 21 - QUALITY AND PROJECT MANAGEMENT

SUB-CHAPTER 21.1 PROJECT ORGANISATION

SUB-CHAPTER 21.2 MANAGEMENT SYSTEM