

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>
CHAPTER 16	TECHNICAL SPECIFICATIONS	
16.1	TECHNICAL SPECIFICATIONS	16.1-1
16.1.1	Introduction to Technical Specifications.....	16.1-1
16.1.2	References.....	16.1-2
1.0	Use and Application.....	1.1-1
1.1	Definitions	1.1-1
1.2	Logical Connectors.....	1.2-1
1.3	Completion Times	1.3-1
1.4	Frequency	1.4-1
2.0	Safety Limits (SLs)	2.0-1
2.1	SLs.....	2.0-1
2.2	SL Violations.....	2.0-1
3.0	Limiting Conditions for Operation (LCO) Applicability.....	3.0-1
3.0	Surveillance Requirement (SR) Applicability.....	3.0-4
3.1	Reactivity Control Systems	3.1.1-1
3.1.1	SHUTDOWN MARGIN (SDM).....	3.1.1-1
3.1.2	Core Reactivity	3.1.2-1
3.1.3	Moderator Temperature Coefficient (MTC).....	3.1.3-1
3.1.4	Rod Group Alignment Limits.....	3.1.4-1
3.1.5	Shutdown Bank Insertion Limits	3.1.5-1
3.1.6	Control Bank Insertion Limits	3.1.6-1
3.1.7	Rod Position Indication	3.1.7-1
3.1.8	PHYSICS TESTS Exceptions – MODE 2.....	3.1.8-1
3.1.9	Chemical and Volume Control System (CVS) Demineralized Water Isolation Valves and Makeup Line Isolation Valves	3.1.9-1
3.2	Power Distribution Limits.....	3.2.1-1
3.2.1	Heat Flux Hot Channel Factor ($F_Q(Z)$) (F_Q Methodology).....	3.2.1-1
3.2.2	Nuclear Enthalpy Rise Hot Channel Factor ($F_{\Delta H}^N$).....	3.2.2-1
3.2.3	AXIAL FLUX DIFFERENCE (AFD) (Relaxed Axial Offset Control (RAOC) Methodology).....	3.2.3-1
3.2.4	QUADRANT POWER TILT RATIO (QPTR)	3.2.4-1
3.2.5	OPDMS-Monitored Parameters.....	3.2.5-1
3.3	Instrumentation	3.3.1-1
3.3.1	Reactor Trip System (RTS) Instrumentation	3.3.1-1
3.3.2	Engineered Safety Feature Actuation System (ESFAS) Instrumentation.....	3.3.2-1
3.3.3	Post Accident Monitoring (PAM) Instrumentation.....	3.3.3-1
3.3.4	Remote Shutdown Workstation (RSW).....	3.3.4-1
3.3.5	Diverse Actuation System (DAS) Manual Controls	3.3.5-1

TABLE OF CONTENTS (Cont.)

<u>Section</u>	<u>Title</u>	<u>Page</u>
3.4	Reactor Coolant System (RCS).....	3.4.1-1
3.4.1	RCS Pressure, Temperature, and Flow Departure from Nucleate Boiling (DNB) Limits	3.4.1-1
3.4.2	RCS Minimum Temperature for Criticality.....	3.4.2-1
3.4.3	RCS Pressure and Temperature (P/T) Limits.....	3.4.3-1
3.4.4	RCS Loops	3.4.4-1
3.4.5	Pressurizer	3.4.5-1
3.4.6	Pressurizer Safety Valves	3.4.6-1
3.4.7	RCS Operational LEAKAGE.....	3.4.7-1
3.4.8	Minimum RCS Flow	3.4.8-1
3.4.9	RCS Leakage Detection Instrumentation.....	3.4.9-1
3.4.10	RCS Specific Activity.....	3.4.10-1
3.4.11	Automatic Depressurization System (ADS) – Operating....	3.4.11-1
3.4.12	Automatic Depressurization System (ADS) – Shutdown, RCS Intact	3.4.12-1
3.4.13	Automatic Depressurization System (ADS) – Shutdown, RCS Open.....	3.4.13-1
3.4.14	Low Temperature Overpressure Protection (LTOP) System	3.4.14-1
3.4.15	RCS Pressure Isolation Valve (PIV) Integrity.....	3.4.15-1
3.4.16	Reactor Vessel Head Vent (RVHV)	3.4.16-1
3.4.17	Chemical and Volume Control System (CVS) Makeup Isolation Valves	3.4.17-1
3.4.18	Steam Generator (SG) Tube Intergity	3.4.18-1
3.5	Passive Core Cooling System (PXS).....	3.5.1-1
3.5.1	Accumulators.....	3.5.1-1
3.5.2	Core Makeup Tanks (CMTs) – Operating	3.5.2-1
3.5.3	Core Makeup Tanks (CMTs) – Shutdown, RCS Intact	3.5.3-1
3.5.4	Passive Residual Heat Removal Heat Exchanger (PRHR HX) – Operating	3.5.4-1
3.5.5	Passive Residual Heat Removal Heat Exchanger (PRHR HX) – Shutdown, RCS Intact.....	3.5.5-1
3.5.6	In-containment Refueling Water Storage Tank (IRWST) – Operating.....	3.5.6-1
3.5.7	In-containment Refueling Water Storage Tank (IRWST) – Shutdown, MODE 5	3.5.7-1
3.5.8	In-containment Refueling Water Storage Tank (IRWST) – Shutdown, MODE 6	3.5.8-1
3.6	Containment Systems.....	3.6.1-1
3.6.1	Containment	3.6.1-1
3.6.2	Containment Air Locks.....	3.6.2-1
3.6.3	Containment Isolation Valves.....	3.6.3-1

TABLE OF CONTENTS (Cont.)

<u>Section</u>	<u>Title</u>	<u>Page</u>
	3.6.4 Containment Pressure	3.6.4-1
	3.6.5 Containment Air Temperature	3.6.5-1
	3.6.6 Passive Containment Cooling System (PCS) – Operating	3.6.6-1
	3.6.7 Passive Containment Cooling System (PCS) – Shutdown	3.6.7-1
	3.6.8 Containment Penetrations	3.6.8-1
	3.6.9 pH Adjustment	3.6.9-1
	3.6.10 Vacuum Relief Valves	3.6.10-1
3.7	Plant Systems	3.7.1-1
	3.7.1 Main Steam Safety Valves (MSSVs)	3.7.1-1
	3.7.2 Main Steam Isolation Valves (MSIVs)	3.7.2-1
	3.7.3 Main Feedwater Isolation and Control Valves (MFIVs and MFCVs)	3.7.3-1
	3.7.4 Secondary Specific Activity	3.7.4-1
	3.7.5 Spent Fuel Pool Water Level	3.7.5-1
	3.7.6 Main Control Room Habitability System (VES)	3.7.6-1
	3.7.7 Startup Feedwater Isolation and Control Valves	3.7.7-1
	3.7.8 Main Steam Line Leakage	3.7.8-1
	3.7.9 Fuel Storage Pool Makeup Water Sources	3.7.9-1
	3.7.10 Steam Generator Isolation Valves	3.7.10-1
	3.7.11 Fuel Storage Pool Boron Concentration	3.7.11-1
	3.7.12 Spent Fuel Pool Storage	3.7.12-1
3.8	Electrical Power Systems	3.8.1-1
	3.8.1 DC Sources – Operating	3.8.1-1
	3.8.2 DC Sources – Shutdown	3.8.2-1
	3.8.3 Inverters – Operating	3.8.3-1
	3.8.4 Inverters – Shutdown	3.8.4-1
	3.8.5 Distribution Systems – Operating	3.8.5-1
	3.8.6 Distribution Systems – Shutdown	3.8.6-1
	3.8.7 Battery Parameters	3.8.7-1
3.9	Refueling Operations	3.9.1-1
	3.9.1 Boron Concentration	3.9.1-1
	3.9.2 Unborated Water Source Flow Paths	3.9.2-1
	3.9.3 Nuclear Instrumentation	3.9.3-1
	3.9.4 Refueling Cavity Water Level	3.9.4-1
	3.9.5 Containment Penetrations	3.9.5-1
	3.9.6 Containment Air Filtration System (VFS)	3.9.6-1
	3.9.7 Decay Time	3.9.7-1
4.0	Design Features	4.0-1
	4.1 Site	4.0-1
	4.1.1 Site and Exclusion Boundaries	4.0-1
	4.1.2 Low Population Zone (LPZ)	4.0-1

TABLE OF CONTENTS (Cont.)

<u>Section</u>	<u>Title</u>	<u>Page</u>
4.2	Reactor Core.....	4.0-1
	4.2.1 Fuel Assemblies	4.0-1
	4.2.2 Control Rod and Gray Rod Assemblies.....	4.0-1
4.3	Fuel Storage.....	4.0-2
	4.3.1 Criticality.....	4.0-2
	4.3.2 Drainage	4.0-3
	4.3.3 Capacity.....	4.0-3
5.0	Administrative Controls	5.1-1
5.1	Responsibility	5.1-1
5.2	Organization	5.2-1
	5.2.1 Onsite and Offsite Organizations	5.2-1
	5.2.2 Unit Staff.....	5.2-1
5.3	Unit Staff Qualifications.....	5.3-1
5.4	Procedures	5.4-1
5.5	Programs and Manuals	5.5-1
	5.5.1 Offsite Dose Calculation Manual (ODCM).....	5.5-1
	5.5.2 Radioactive Effluent Control Program	5.5-2
	5.5.3 Inservice Testing Program.....	5.5-3
	5.5.4 Steam Generator (SG) Program.....	5.5-4
	5.5.5 Secondary Water Chemistry Program	5.5-6
	5.5.6 Technical Specifications (TS) Bases Control Program	5.5-6
	5.5.7 Safety Function Determination Program (SFDP).....	5.5-7
	5.5.8 Containment Leakage Rate Testing Program	5.5-8
	5.5.9 System Level OPERABILITY Testing Program.....	5.5-9
	5.5.10 Component Cyclic or Transient Limit.....	5.5-9
	5.5.11 Battery Monitoring and Maintenance Program	5.5-10
	5.5.12 Main Control Room Envelope Habitability Program .	5.5-10
	5.5.13 Ventilation Filter Testing Program (VFTP)	5.5.11
	5.5.14 Setpoint Program (SP).....	5.5.12
5.6	Reporting Requirements	5.6-1
	5.6.1 Occupational Radiation Exposure Report	5.6-1
	5.6.2 Annual Radiological Environmental Operating Report.....	5.6-1
	5.6.3 Radioactive Effluent Release Report.....	5.6-2
	5.6.4 Monthly Operating Reports.....	5.6-2
	5.6.5 CORE OPERATING LIMITS REPORT (COLR).....	5.6-2
	5.6.6 Reactor Coolant System (RCS) Pressure and Temperature Limits Report (PTLR).....	5.6-5
	5.6.7 Post Accident Monitoring Report.....	5.6-5
	5.6.8 Steam Generator Tube Inspection Report.....	5.6-5
5.7	High Radiation Area.....	5.7-1

TABLE OF CONTENTS (Cont.)

<u>Section</u>	<u>Title</u>	<u>Page</u>
B 2.0	Safety Limits (SLs)	B 2.1.1-1
	B 2.1.1 Reactor Core Safety Limits (SLs)	B 2.1.1-1
	B 2.1.2 Reactor Coolant System (RCS) Pressure SL	B 2.1.2-1
B 3.0	Limiting Conditions for Operation (LCO) Applicability	B 3.0-1
B 3.0	Surveillance Requirement (SR) Applicability	B 3.0-13
B 3.1	Reactivity Control Systems	B 3.1.1-1
B 3.1.1	SHUTDOWN MARGIN (SDM)	B 3.1.1-1
B 3.1.2	Core Reactivity	B.3.1.2-1
B 3.1.3	Moderator Temperature Coefficient (MTC).....	B 3.1.3-1
B 3.1.4	Rod Group Alignment Limits	B 3.1.4-1
B 3.1.5	Shutdown Bank Insertion Limits.....	B 3.1.5-1
B 3.1.6	Control Bank Insertion Limits.....	B 3.1.6-1
B 3.1.7	Rod Position Indication.....	B 3.1.7-1
B 3.1.8	PHYSICS TESTS Exceptions – MODE 2.....	B 3.1.8-1
B 3.1.9	Chemical and Volume Control System (CVS) Demineralized Water Isolation Valves and Makeup Line Isolation Valves	B 3.1.9-1
B 3.2	Power Distribution Limits	B 3.2.1-1
B 3.2.1	Heat Flux Hot Channel Factor ($F_Q(Z)$) (F_Q Methodology)	B 3.2.1-1
B 3.2.2	Nuclear Enthalpy Rise Hot Channel Factor ($F_{\Delta H}^N$).....	B 3.2.2-1
B 3.2.3	AXIAL FLUX DIFFERENCE (AFD) (Relaxed Axial Offset Control (RAOC) Methodology)	B 3.2.3-1
B 3.2.4	QUADRANT POWER TILT RATIO (QPTR)..	B 3.2.4-1
B 3.2.5	OPDMS-Monitored Parameters	B 3.2.5-1
B 3.3	Instrumentation	B 3.3.1-1
B 3.3.1	Reactor Trip System (RTS) Instrumentation.....	B 3.3.1-1
B 3.3.2	Engineered Safety Feature Actuation System (ESFAS) Instrumentation.....	B 3.3.2-1
B 3.3.3	Post Accident Monitoring (PAM) Instrumentation	B 3.3.3-1
B 3.3.4	Remote Shutdown Workstation (RSW)	B 3.3.4-1
B 3.3.5	Diverse Actuation System (DAS) Manual Controls.....	B 3.3.5-1
B 3.4	Reactor Coolant System (RCS).....	B 3.4.1-1
B 3.4.1	RCS Pressure, Temperature, and Flow Departure from Nucleate Boiling (DNB) Limits	B 3.4.1-1
B 3.4.2	RCS Minimum Temperature for Criticality	B 3.4.2-1
B 3.4.3	RCS Pressure and Temperature (P/T) Limits.....	B 3.4.3-1
B 3.4.4	RCS Loops.....	B 3.4.4-1
B 3.4.5	Pressurizer.....	B 3.4.5-1
B 3.4.6	Pressurizer Safety Valves.....	B 3.4.6-1
B 3.4.7	RCS Operational LEAKAGE	B 3.4.7-1

TABLE OF CONTENTS (Cont.)

<u>Section</u>	<u>Title</u>	<u>Page</u>
	B 3.4.8 Minimum RCS Flow	B 3.4.8-1
	B 3.4.9 RCS Leakage Detection Instrumentation	B 3.4.9-1
	B 3.4.10 RCS Specific Activity	B 3.4.10-1
	B 3.4.11 Automatic Depressurization System (ADS) – Operating	B 3.4.11-1
	B 3.4.12 Automatic Depressurization System (ADS) – Shutdown, RCS Intact.....	B 3.4.12-1
	B 3.4.13 Automatic Depressurization System (ADS) – Shutdown, RCS Open	B 3.4.13-1
	B 3.4.14 Low Temperature Overpressure Protection (LTOP) System	B 3.4.14-1
	B 3.4.15 RCS Pressure Isolation Valve (PIV) Integrity..	B 3.4.15-1
	B 3.4.16 Reactor Vessel Head Vent (RVHV).....	B 3.4.16-1
	B 3.4.17 Chemical and Volume Control System (CVS) Makeup Isolation Valves.....	B 3.4.17-1
	B 3.4.18 Steam Generator (SG) Tube Integrity	B 3.4.18-1
B 3.5	Passive Core Cooling System (PXS)	B 3.5.1-1
	B 3.5.1 Accumulators	B 3.5.1-1
	B 3.5.2 Core Makeup Tanks (CMTs) – Operating	B 3.5.2-1
	B 3.5.3 Core Makeup Tanks (CMTs) – Shutdown, RCS Intact.....	B 3.5.3-1
	B 3.5.4 Passive Residual Heat Removal Heat Exchanger (PRHR HX) – Operating.....	B 3.5.4-1
	B 3.5.5 Passive Residual Heat Removal Heat Exchanger (PRHR HX) – Shutdown, RCS Intact	B 3.5.5-1
	B 3.5.6 In-containment Refueling Water Storage Tank (IRWST) – Operating	B 3.5.6-1
	B 3.5.7 In-containment Refueling Water Storage Tank (IRWST) – Shutdown, MODE 5	B 3.5.7-1
	B 3.5.8 In-containment Refueling Water Storage Tank (IRWST) – Shutdown, MODE 6	B 3.5.8-1
B 3.6	Containment Systems	B 3.6.1-1
	B 3.6.1 Containment.....	B 3.6.1-1
	B 3.6.2 Containment Air Locks	B 3.6.2-1
	B 3.6.3 Containment Isolation Valves	B 3.6.3-1
	B 3.6.4 Containment Pressure	B 3.6.4-1
	B 3.6.5 Containment Air Temperature	B 3.6.5-1
	B 3.6.6 Passive Containment Cooling System (PCS) – Operating.....	B 3.6.6-1
	B 3.6.7 Passive Containment Cooling System (PCS) – Shutdown	B 3.6.7-1
	B 3.6.8 Containment Penetrations	B 3.6.8-1
	B 3.6.9 pH Adjustment.....	B 3.6.9-1
	B 3.6.10 Vacuum Relief Valves	B 3.6.10-1

TABLE OF CONTENTS (Cont.)

<u>Section</u>	<u>Title</u>	<u>Page</u>
B 3.7	Plant Systems.....	B 3.7.1-1
B 3.7.1	Main Steam Safety Valves (MSSVs)	B 3.7.1-1
B 3.7.2	Main Steam Isolation Valves (MSIVs)	B 3.7.2-1
B 3.7.3	Main Feedwater Isolation and Control Valves (MFIVs and MFCVs).....	B 3.7.3-1
B 3.7.4	Secondary Specific Activity	B 3.7.4-1
B 3.7.5	Spent Fuel Pool Water Level	B 3.7.5-1
B 3.7.6	Main Control Room Emergency Habitability System (VES).....	B 3.7.6-1
B 3.7.7	Startup Feedwater Isolation and Control Valves	B 3.7.7-1
B 3.7.8	Main Steam Line Leakage.....	B 3.7.8-1
B 3.7.9	Fuel Storage Pool Makeup Water Sources.....	B 3.7.9-1
B 3.7.10	Steam Generator Isolation Valves	B 3.7.10-1
B 3.7.11	Fuel Storage Pool Boron Concentration.....	B 3.7.11-1
B 3.7.12	Spent Fuel Pool Storage.....	B 3.7.12-1
B 3.8	Electrical Power Systems.....	B 3.8.1-1
B 3.8.1	DC Sources – Operating	B 3.8.1-1
B 3.8.2	DC Sources – Shutdown	B 3.8.2-1
B 3.8.3	Inverters – Operating	B 3.8.3-1
B 3.8.4	Inverters – Shutdown	B 3.8.4-1
B 3.8.5	Distribution Systems – Operating	B 3.8.5-1
B 3.8.6	Distribution Systems – Shutdown	B 3.8.6-1
B 3.8.7	Battery Parameters	B 3.8.7-1
B 3.9	Refueling Operations.....	B 3.9.1-1
B 3.9.1	Boron Concentration	B 3.9.1-1
B 3.9.2	Unborated Water Source Flow Paths	B 3.9.2-1
B 3.9.3	Nuclear Instrumentation.....	B 3.9.3-1
B 3.9.4	Refueling Cavity Water Level.....	B 3.9.4-1
B 3.9.5	Containment Penetrations	B 3.9.5-1
B 3.9.6	Containment Air Filtration System (VFS)	B 3.9.6-1
B 3.9.7	Decay Time.....	B 3.9.7-1
16.2	DESIGN RELIABILITY ASSURANCE PROGRAM	16.2-1
16.3	INVESTMENT PROTECTION	16.3-1
16.3.1	Investment Protection Short-Term Availability Controls	16.3-1
16.3.2	Combined License Information	16.3-2

LIST OF TABLES

<u>Table No.</u>	<u>Title</u>	<u>Page</u>
16.3-1	List of Investment Protection Short-Term Availability Controls.....	16.3-4
16.3-2	Investment Protection Short-Term Availability Controls	16.3-5