

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
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
3.1.1	Shutdown Margin (SDM)	3.1-1
3.1.2	Core Reactivity	3.1-2
3.1.3	Moderator Temperature Coefficient (MTC)	3.1-4
3.1.4	Rod Group Alignment Limits	3.1-6
3.1.5	Shutdown Bank Insertion Limits	3.1-11
3.1.6	Control Bank Insertion Limits	3.1-13
3.1.7	Rod Position Indication	3.1-16
3.1.8	Physics Tests Exceptions - Mode 2	3.1-18
3.1.9	Chemical and Volume Control System (CVS) Demineralized Water Isolation Valves	3.1-20
3.2	Power Distribution Limits	3.2-1
3.2.1	Heat Flux Hot Channel Factor ($F_Q(Z)$) (F_Q Methodology)	3.2-1
3.2.2	Nuclear Enthalpy Rise Hot Channel Factor ($F_{\Delta H}^N$)	3.2-5
3.2.3	Axial Flux Difference (AFD) (Relaxed Axial Offset Control (RAOC) Methodology)	3.2-8
3.2.4	Quadrant Power Tilt Ratio (QPTR)	3.2-10
3.2.5	OPDMS-Monitored Power Distribution Parameters	3.2-14
3.3	Instrumentation	3.3-1
3.3.1	Reactor Trip System (RTS) Instrumentation	3.3-1
3.3.2	Engineered Safety Feature Actuation System (ESFAS) Instrumentation	3.3-17
3.3.3	Post Accident Monitoring (PAM) Instrumentation	3.3-44
3.3.4	Remote Shutdown Workstation	3.3-47

TABLE OF CONTENTS (Cont.)

<u>Section</u>	<u>Title</u>	<u>Page</u>
3.4	Reactor Coolant System (RCS)	3.4-1
3.4.1	RCS Pressure, Temperature, and Flow Departure from Nucleate Boiling (DNB) Limits	3.4-1
3.4.2	RCS Minimum Temperature for Criticality	3.4-3
3.4.3	RCS Pressure and Temperature (P/T) Limits	3.4-4
3.4.4	RCS Loops - Modes 1 and 2	3.4-6
3.4.5	RCS Loops - Modes 3, 4, and 5	3.4-7
3.4.6	Pressurizer	3.4-9
3.4.7	Pressurizer Safety Valves	3.4-10
3.4.8	RCS Operational Leakage	3.4-12
3.4.9	Minimum RCS Flow	3.4-14
3.4.10	RCS Leakage Detection Instrumentation	3.4-15
3.4.11	RCS Specific Activity	3.4-18
3.4.12	Automatic Depressurization System (ADS) - Operating	3.4-20
3.4.13	Automatic Depressurization System (ADS) - Shutdown, RCS Intact	3.4-22
3.4.14	Automatic Depressurization System (ADS) - Shutdown, RCS Open	3.4-24
3.4.15	Low Temperature Overpressure Protection (LTOP) System	3.4-27
3.4.16	RCS Pressure Isolation Valve (PIV) Integrity	3.4-30
3.4.17	Reactor Vessel Head Vent (RVHV)	3.4-32
3.4.18	Chemical and Volume Control System (CVS) Makeup Isolation Valves	3.4-33
3.5	Passive Core Cooling System (PXS)	3.5-1
3.5.1	Accumulators	3.5-1
3.5.2	Core Makeup Tanks (CMTs) - Operating	3.5-4
3.5.3	Core Makeup Tanks (CMTs) - Shutdown, RCS Intact	3.5-7
3.5.4	Passive Residual Heat Removal Heat Exchanger (PRHR HX) - Operating	3.5-9
3.5.5	Passive Residual Heat Removal Heat Exchanger (PRHR HX) - Shutdown, RCS Intact	3.5-12
3.5.6	In-containment Refueling Water Storage Tank (IRWST) - Operating	3.5-14
3.5.7	In-containment Refueling Water Storage Tank (IRWST) - Shutdown, MODE 5	3.5-17
3.5.8	In-containment Refueling Water Storage Tank (IRWST) - Shutdown, MODE 6	3.5-19
3.6	Containment Systems	3.6-1
3.6.1	Containment	3.6-1
3.6.2	Containment Air Locks	3.6-2
3.6.3	Containment Isolation Valves	3.6-6

TABLE OF CONTENTS (Cont.)

<u>Section</u>	<u>Title</u>	<u>Page</u>
	3.6.4 Containment Pressure	3.6-11
	3.6.5 Containment Air Temperature	3.6-12
	3.6.6 Passive Containment Cooling System (PCS) - Operating . .	3.6-13
	3.6.7 Passive Containment Cooling System (PCS) - Shutdown . .	3.6-16
	3.6.8 Containment Penetrations	3.6-18
	3.6.9 pH Adjustment	3.6-21
	3.6.10 Passive Autocatalytic Hydrogen Recombiners	3.6-23
3.7	Plant Systems	3.7-1
	3.7.1 Main Steam Safety Valves (MSSVs)	3.7-1
	3.7.2 Main Steam Isolation Valves (MSIVs)	3.7-5
	3.7.3 Main Feedwater Isolation and Control Valves (MFIV and MFCV)	3.7-9
	3.7.4 Secondary Specific Activity	3.7-11
	3.7.5 Spent Fuel Pool Water Level	3.7-12
	3.7.6 Main Control Room Habitability System (VES)	3.7-13
	3.7.7 Startup Feedwater Isolation and Control Valves	3.7-17
	3.7.8 Main Steam Line Leakage	3.7-19
	3.7.9 Fuel Storage Pool Makeup Water Sources	3.7-20
	3.7.10 Steam Generator Isolation Valves	3.7-22
3.8	Electrical Power Systems	3.8-1
	3.8.1 DC Sources - Operating	3.8-1
	3.8.2 DC Sources - Shutdown	3.8-5
	3.8.3 Inverters - Operating	3.8-7
	3.8.4 Inverters - Shutdown	3.8-9
	3.8.5 Distribution Systems - Operating	3.8-11
	3.8.6 Distribution Systems - Shutdown	3.8-14
	3.8.7 Battery Cell Parameters	3.8-16
3.9	Refueling Operations	3.9-1
	3.9.1 Boron Concentration	3.9-1
	3.9.2 Unborated Water Source Flow Paths	3.9-2
	3.9.3 Nuclear Instrumentation	3.9-4
	3.9.4 Refueling Cavity Water Level	3.9-6
	3.9.5 Containment Penetrations	3.9-7
	3.9.6 Radiologically Controlled Area Ventilation System (VAS) and Containment Air Filtration System (VFS)	3.9-9
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	4.0-2
4.3.3	Capacity	4.0-2
5.0	Administrative Controls	5.0-1
5.1	Responsibility	5.0-1
5.2	Organization	5.0-2
5.3	Unit Staff Qualifications	5.0-5
5.4	Procedures	5.0-6
5.5	Programs and Manuals	5.0-7
5.6	Reporting Requirements	5.0-16
5.7	High Radiation Area	5.0-22
B 2.0	Safety Limits (SLs)	B 2.0-1
B 2.1.1	Reactor Core Safety Limits (SLs)	B 2.0-1
B 2.1.2	Reactor Coolant System (RCS) Pressure SL ...	B 2.0-7
B 3.0	Limiting Conditions for Operation (LCO) Applicability	B 3.0-1
B 3.0	Surveillance Requirement (SR) Applicability	B 3.0-12
B 3.1	Reactivity Control Systems	B 3.1-1
B 3.1.1	Shutdown Margin (SDM)	B 3.1-1
B 3.1.2	Core Reactivity	B.3.1-7
B 3.1.3	Moderator Temperature Coefficient (MTC) ...	B 3.1-13
B 3.1.4	Rod Group Alignment Limits	B 3.1-19
B 3.1.5	Shutdown Bank Insertion Limits	B 3.1-30
B 3.1.6	Control Bank Insertion Limits	B 3.1-35
B 3.1.7	Rod Position Indication	B 3.1-41
B 3.1.8	Physics Tests Exceptions - Mode 2	B 3.1-47
B 3.1.9	Chemical and Volume Control System (CVS) Demineralized Water Isolation Valves	B 3.1-54
B 3.2	Power Distribution Limits	B 3.2-1
B 3.2.1	Heat Flux Hot Channel Factor ($F_Q(Z)$) (F_Q Methodology)	B 3.2-1
B 3.2.2	Nuclear Enthalpy Rise Hot Channel Factor ($F_{\Delta H}^N$)	B 3.2-10
B 3.2.3	Axial Flux Difference (AFD) (Relaxed Axial Offset Control (RAOC) Methodology)	B 3.2-17
B 3.2.4	Quadrant Power Tilt Ratio (QPTR)	B 3.2-22
B 3.2.5	OPDMS-Monitored Power Distribution Parameters	B 3.2-28

TABLE OF CONTENTS (Cont.)

<u>Section</u>	<u>Title</u>	<u>Page</u>
B 3.3	Instrumentation	B 3.3-1
B 3.3.1	Reactor Trip System (RTS) Instrumentation . . .	B 3.3-1
B 3.3.2	Engineered Safety Feature Actuation System (ESFAS) Instrumentation	B 3.3-54
B 3.3.3	Post Accident Monitoring (PAM) Instrumentation	B 3.3-128
B 3.3.4	Remote Shutdown Workstation	B 3.3-138
B 3.4	Reactor Coolant System (RCS)	B 3.4-1
B 3.4.1	RCS Pressure, Temperature, and Flow Departure from Nucleate Boiling (DNB) Limits	B 3.4-1
B 3.4.2	RCS Minimum Temperature for Criticality . . .	B 3.4-6
B 3.4.3	RCS Pressure and Temperature (P/T) Limits . .	B 3.4-9
B 3.4.4	RCS Loops - Modes 1 and 2	B 3.4-17
B 3.4.5	RCS Loops - Modes 3, 4, and 5	B 3.4-21
B 3.4.6	Pressurizer	B 3.4-25
B 3.4.7	Pressurizer Safety Valves	B 3.4-28
B 3.4.8	RCS Operational Leakage	B 3.4-32
B 3.4.9	Minimum RCS Flow	B 3.4-38
B 3.4.10	RCS Leakage Detection Instrumentation	B 3.4-41
B 3.4.11	RCS Specific Activity	B 3.4-46
B 3.4.12	Automatic Depressurization System (ADS) - Operating	B 3.4-50
B 3.4.13	Automatic Depressurization System (ADS) - Shutdown, RCS Intact	B 3.4-54
B 3.4.14	Automatic Depressurization System (ADS) - Shutdown, RCS Open	B 3.4-56
B 3.4.15	Low Temperature Overpressure Protection (LTOP) System	B 3.4-59
B 3.4.16	RCS Pressure Isolation Valve (PIV) Integrity . .	B 3.4-67
B 3.4.17	Reactor Vessel Head Vent (RVHV)	B 3.4-73
B 3.4.18	Chemical and Volume Control System (CVS) Makeup Isolation Valves	B 3.4-76
B 3.5	Passive Core Cooling System (PXS)	B 3.5-1
B 3.5.1	Accumulators	B 3.5-1
B 3.5.2	Core Makeup Tanks (CMTs) - Operating	B 3.5-8
B 3.5.3	Core Makeup Tanks (CMTs) - Shutdown, RCS Intact	B 3.5-15
B 3.5.4	Passive Residual Heat Removal Heat Exchanger (PRHR HX) - Operating	B 3.5-18
B 3.5.5	Passive Residual Heat Removal Heat Exchanger (PRHR HX) - Shutdown, RCS Intact	B 3.5-25

TABLE OF CONTENTS (Cont.)

<u>Section</u>	<u>Title</u>	<u>Page</u>
B 3.5.6	In-containment Refueling Water Storage Tank (IRWST) - Operating	B 3.5-28
B 3.5.7	In-containment Refueling Water Storage Tank (IRWST) - Shutdown, MODE 5	B 3.5-35
B 3.5.8	In-containment Refueling Water Storage Tank (IRWST) - Shutdown, MODE 6	B 3.5-38
B 3.6	Containment Systems	B 3.6-1
B 3.6.1	Containment	B 3.6-1
B 3.6.2	Containment Air Locks	B 3.6-6
B 3.6.3	Containment Isolation Valves	B 3.6-14
B 3.6.4	Containment Pressure	B 3.6-24
B 3.6.5	Containment Air Temperature	B 3.6-27
B 3.6.6	Passive Containment Cooling System (PCS) - Operating	B 3.6-31
B 3.6.7	Passive Containment Cooling System (PCS) - Shutdown	B 3.6-39
B 3.6.8	Containment Penetrations	B 3.6-42
B 3.6.9	pH Adjustment	B 3.6-50
B 3.6.10	Passive Autocatalytic Hydrogen Recombiners	B 3.6-55
B 3.7	Plant Systems	B 3.7-1
B 3.7.1	Main Steam Safety Valves (MSSVs)	B 3.7-1
B 3.7.2	Main Steam Isolation Valves (MSIVs)	B 3.7-7
B 3.7.3	Main Feedwater Isolation and Control Valves (MFIVs and MFCVs)	B 3.7-15
B 3.7.4	Secondary Specific Activity	B 3.7-20
B 3.7.5	Spent Fuel Pool Water Level	B 3.7-23
B 3.7.6	Main Control Room Emergency Habitability System	B 3.7-26
B 3.7.7	Startup Feedwater Isolation and Control Valves	B 3.7-33
B 3.7.8	Main Steam Line Leakage	B 3.7-37
B 3.7.9	Fuel Storage Pool Makeup Water Sources	B 3.7-40
B 3.7.10	Steam Generator Isolation Valves	B 3.7-45
B 3.8	Electrical Power Systems	B 3.8-1
B 3.8.1	DC Sources - Operating	B 3.8-1
B 3.8.2	DC Sources - Shutdown	B 3.8-12
B 3.8.3	Inverters - Operating	B 3.8-16
B 3.8.4	Inverters - Shutdown	B 3.8-21
B 3.8.5	Distribution Systems - Operating	B 3.8-25
B 3.8.6	Distribution System - Shutdown	B 3.8-38
B 3.8.7	Battery Cell Parameters	B 3.8-42

TABLE OF CONTENTS (Cont.)

<u>Section</u>	<u>Title</u>	<u>Page</u>
	B 3.9 Refueling Operations	B 3.9-1
	B 3.9.1 Boron Concentration	B 3.9-1
	B 3.9.2 Unborated Water Source Flow Paths	B 3.9-5
	B 3.9.3 Nuclear Instrumentation	B 3.9-8
	B 3.9.4 Refueling Cavity Water Level	B 3.9-11
	B 3.9.5 Containment Penetrations	B 3.9-14
	B 3.9.6 Radiologically Controlled Area Ventilation System (VAS) and Containment Air Filtration System (VFS)	B 3.9-20
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	Instrument Protective Short-Term Availability Controls	16.3-5