

TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>
CHAPTER 9	AUXILIARY SYSTEMS.....	9.1-1
9.1	Fuel Storage and Handling	9.1-1
9.1.1	New Fuel Storage.....	9.1-1
9.1.1.1	Design Bases	9.1-1
9.1.1.2	Facilities Description	9.1-1
9.1.1.3	Safety Evaluation.....	9.1-4
9.1.2	Spent Fuel Storage	9.1-5
9.1.2.1	Design Bases	9.1-5
9.1.2.2	Facilities Description	9.1-6
9.1.2.3	Safety Evaluation.....	9.1-11
9.1.3	Spent Fuel Pool Cooling System.....	9.1-12
9.1.3.1	Design Basis	9.1-12
9.1.3.2	System Description	9.1-15
9.1.3.3	Component Description	9.1-16
9.1.3.4	System Operation and Performance.....	9.1-18
9.1.3.5	Safety Evaluation.....	9.1-23
9.1.3.6	Inspection and Testing Requirements.....	9.1-24
9.1.3.7	Instrumentation Requirements.....	9.1-25
9.1.4	Light Load Handling System (Related to Refueling).....	9.1-26
9.1.4.1	Design Basis	9.1-26
9.1.4.2	System Description	9.1-27
9.1.4.3	Safety Evaluation.....	9.1-33
9.1.4.4	Inspection and Testing Requirements.....	9.1-38
9.1.5	Overhead Heavy Load Handling Systems.....	9.1-39
9.1.5.1	Design Basis	9.1-40
9.1.5.2	System Description	9.1-41
9.1.5.3	Safety Evaluation.....	9.1-46
9.1.5.4	Inservice Inspection/Inservice Testing.....	9.1-47
9.1.6	Combined License Information for Fuel Storage and Handling.....	9.1-48
9.1.6.1	Structural Dynamic and Stress Analysis for New Fuel Rack.....	9.1-48
9.1.6.2	Criticality Analysis for New Fuel Rack.....	9.1-48
9.1.6.3	Structural Dynamic and Stress Analysis for Spent Fuel Rack.....	9.1-48
9.1.6.4	Criticality Analysis for Spent Fuel Rack.....	9.1-49
9.1.6.5	Inservice Inspection Load Handling Systems	9.1-49
9.1.6.6	Operating Radiation Monitor	9.1-49
9.1.6.7	Coupon Monitoring Program.....	9.1-49
9.1.7	References.....	9.1-49
9.2	Water Systems.....	9.2-1
9.2.1	Service Water System.....	9.2-1
9.2.1.1	Design Basis	9.2-1
9.2.1.2	System Description	9.2-1

TABLE OF CONTENTS (Cont.)

<u>Section</u>	<u>Title</u>	<u>Page</u>
	9.2.1.3 Safety Evaluation.....	9.2-6
	9.2.1.4 Tests and Inspections.....	9.2-6
	9.2.1.5 Instrument Applications.....	9.2-7
9.2.2	Component Cooling Water System.....	9.2-7
	9.2.2.1 Design Bases	9.2-8
	9.2.2.2 System Description.....	9.2-9
	9.2.2.3 Component Description.....	9.2-10
	9.2.2.4 System Operation and Performance.....	9.2-12
	9.2.2.5 Evaluation.....	9.2-15
	9.2.2.6 Inspection and Testing Requirements.....	9.2-15
	9.2.2.7 Instrumentation Requirements.....	9.2-16
9.2.3	Demineralized Water Treatment System.....	9.2-17
	9.2.3.1 Design Basis	9.2-17
	9.2.3.2 System Description.....	9.2-17
	9.2.3.3 Safety Evaluation.....	9.2-20
	9.2.3.4 Tests and Inspections.....	9.2-20
	9.2.3.5 Instrumentation Applications.....	9.2-20
9.2.4	Demineralized Water Transfer and Storage System.....	9.2-21
	9.2.4.1 Design Basis	9.2-21
	9.2.4.2 System Description.....	9.2-22
	9.2.4.3 System Operation.....	9.2-23
	9.2.4.4 Safety Evaluation.....	9.2-24
	9.2.4.5 Tests and Inspections.....	9.2-24
	9.2.4.6 Instrumentation Applications.....	9.2-25
9.2.5	Potable Water System	9.2-25
	9.2.5.1 Design Basis	9.2-25
	9.2.5.2 System Description.....	9.2-26
	9.2.5.3 System Operation.....	9.2-26
	9.2.5.4 Safety Evaluation.....	9.2-27
	9.2.5.5 Tests and Inspections.....	9.2-27
	9.2.5.6 Instrumentation Applications.....	9.2-27
9.2.6	Sanitary Drainage System	9.2-27
	9.2.6.1 Design Basis	9.2-27
	9.2.6.2 System Description.....	9.2-27
	9.2.6.3 Safety Evaluation.....	9.2-28
	9.2.6.4 Test and Inspection.....	9.2-28
	9.2.6.5 Instrument Application	9.2-28
9.2.7	Central Chilled Water System.....	9.2-29
	9.2.7.1 Design Basis	9.2-29
	9.2.7.2 System Description.....	9.2-29
	9.2.7.3 Safety Evaluation.....	9.2-34
	9.2.7.4 Inservice Inspection/Inservice Testing.....	9.2-34

TABLE OF CONTENTS (Cont.)

<u>Section</u>	<u>Title</u>	<u>Page</u>
9.2.8	Turbine Building Closed Cooling Water System	9.2-34
9.2.8.1	Design Basis	9.2-34
9.2.8.2	System Description	9.2-35
9.2.8.3	Safety Evaluation	9.2-38
9.2.8.4	Tests and Inspections	9.2-38
9.2.8.5	Instrument Applications	9.2-38
9.2.9	Waste Water System	9.2-38
9.2.9.1	Design Basis	9.2-39
9.2.9.2	System Description	9.2-39
9.2.9.3	Safety Evaluation	9.2-41
9.2.9.4	Tests and Inspections	9.2-41
9.2.9.5	Instrumentation Applications	9.2-41
9.2.10	Hot Water Heating System	9.2-41
9.2.10.1	Design Basis	9.2-41
9.2.10.2	System Description	9.2-42
9.2.10.3	Safety Evaluation	9.2-44
9.2.10.4	Tests and Inspections	9.2-44
9.2.10.5	Instrument Applications	9.2-44
9.2.11	Combined License Information	9.2-45
9.2.11.1	Potable Water	9.2-45
9.2.11.2	Waste Water Retention Basins	9.2-45
9.2.12	References	9.2-45
9.3	Process Auxiliaries	9.3-1
9.3.1	Compressed and Instrument Air System	9.3-1
9.3.1.1	Design Basis	9.3-1
9.3.1.2	System Description	9.3-2
9.3.1.3	Safety Evaluation	9.3-5
9.3.1.4	Tests and Inspections	9.3-6
9.3.1.5	Instrumentation Applications	9.3-6
9.3.2	Plant Gas System	9.3-6
9.3.2.1	Design Basis	9.3-6
9.3.2.2	System Description	9.3-7
9.3.2.3	Safety Evaluation	9.3-9
9.3.2.4	Tests and Inspections	9.3-9
9.3.2.5	Instrumentation Requirements	9.3-9
9.3.3	Primary Sampling System	9.3-10
9.3.3.1	Design Bases	9.3-10
9.3.3.2	System Description	9.3-11
9.3.3.3	Containment Isolation Valves	9.3-12
9.3.3.4	System Operation and Performance	9.3-13
9.3.3.5	Design Evaluation	9.3-13
9.3.3.6	Inspection and Testing Requirements	9.3-13
9.3.3.7	Instrumentation Requirements	9.3-14

TABLE OF CONTENTS (Cont.)

<u>Section</u>	<u>Title</u>	<u>Page</u>
9.3.4	Secondary Sampling System	9.3-14
	9.3.4.1 Design Basis	9.3-14
	9.3.4.2 System Description	9.3-14
	9.3.4.3 Safety Evaluation	9.3-15
	9.3.4.4 Tests and Inspections	9.3-15
	9.3.4.5 Instrumentation Applications	9.3-15
9.3.5	Equipment and Floor Drainage Systems	9.3-15
	9.3.5.1 Design Basis	9.3-16
	9.3.5.2 System Description	9.3-17
	9.3.5.3 Safety Evaluation	9.3-20
	9.3.5.4 Tests and Inspections	9.3-20
9.3.6	Chemical and Volume Control System	9.3-20
	9.3.6.1 Design Bases	9.3-21
	9.3.6.2 System Description	9.3-23
	9.3.6.3 Component Descriptions	9.3-27
	9.3.6.4 System Operation and Performance	9.3-34
	9.3.6.5 Design Evaluation	9.3-38
	9.3.6.6 Inspection and Testing Requirements	9.3-38
	9.3.6.7 Instrumentation Requirements	9.3-40
9.3.7	Combined License Information	9.3-41
9.3.8	References	9.3-42
9.4	Air-Conditioning, Heating, Cooling, and Ventilation System	9.4-1
9.4.1	Nuclear Island Nonradioactive Ventilation System	9.4-1
	9.4.1.1 Design Basis	9.4-1
	9.4.1.2 System Description	9.4-4
	9.4.1.3 Safety Evaluation	9.4-15
	9.4.1.4 Tests and Inspection	9.4-15
	9.4.1.5 Instrumentation Applications	9.4-16
9.4.2	Annex/Auxiliary Buildings Nonradioactive HVAC System	9.4-17
	9.4.2.1 Design Basis	9.4-17
	9.4.2.2 System Description	9.4-18
	9.4.2.3 Safety Evaluation	9.4-28
	9.4.2.4 Tests and Inspections	9.4-28
	9.4.2.5 Instrumentation Applications	9.4-28
9.4.3	Radiologically Controlled Area Ventilation System	9.4-29
	9.4.3.1 Design Basis	9.4-29
	9.4.3.2 System Description	9.4-31
	9.4.3.3 Safety Evaluation	9.4-37
	9.4.3.4 Tests and Inspections	9.4-37
	9.4.3.5 Instrumentation Applications	9.4-38
9.4.4	Balance-of-Plant-Interface	9.4-38
9.4.5	Engineered Safety Features Ventilation System	9.4-38

TABLE OF CONTENTS (Cont.)

<u>Section</u>	<u>Title</u>	<u>Page</u>
9.4.6	Containment Recirculation Cooling System.....	9.4-38
	9.4.6.1 Design Basis	9.4-38
	9.4.6.2 System Description	9.4-39
	9.4.6.3 Safety Evaluation.....	9.4-42
	9.4.6.4 Tests and Inspections.....	9.4-42
	9.4.6.5 Instrumentation Application	9.4-42
9.4.7	Containment Air Filtration System.....	9.4-43
	9.4.7.1 Design Basis	9.4-43
	9.4.7.2 System Description	9.4-44
	9.4.7.3 Safety Evaluation.....	9.4-49
	9.4.7.4 Tests and Inspections.....	9.4-50
	9.4.7.5 Instrumentation Application	9.4-50
9.4.8	Radwaste Building HVAC System	9.4-51
	9.4.8.1 Design Basis	9.4-51
	9.4.8.2 System Description	9.4-52
	9.4.8.3 Safety Evaluation.....	9.4-55
	9.4.8.4 Tests and Inspections.....	9.4-55
	9.4.8.5 Instrumentation Applications.....	9.4-55
9.4.9	Turbine Building Ventilation System.....	9.4-55
	9.4.9.1 Design Basis	9.4-56
	9.4.9.2 System Description	9.4-56
	9.4.9.3 System Operation.....	9.4-59
	9.4.9.4 Safety Evaluation.....	9.4-60
	9.4.9.5 Tests and Inspections.....	9.4-60
	9.4.9.6 Instrumentation Applications.....	9.4-61
9.4.10	Diesel Generator Building Heating and Ventilation System	9.4-61
	9.4.10.1 Design Basis	9.4-61
	9.4.10.2 System Description	9.4-62
	9.4.10.3 Safety Evaluation.....	9.4-67
	9.4.10.4 Tests and Inspection	9.4-67
	9.4.10.5 Instrumentation Applications.....	9.4-67
9.4.11	Health Physics and Hot Machine Shop HVAC System.....	9.4-67
	9.4.11.1 Design Basis	9.4-68
	9.4.11.2 System Description	9.4-69
	9.4.11.3 Safety Evaluation.....	9.4-71
	9.4.11.4 Tests and Inspections.....	9.4-72
	9.4.11.5 Instrumentation Application	9.4-72
9.4.12	Combined License Information.....	9.4-72
9.4.13	References.....	9.4-73
9.5	Other Auxiliary Systems.....	9.5-1
	9.5.1 Fire Protection System	9.5-1
	9.5.1.1 Design Basis	9.5-1
	9.5.1.2 System Description	9.5-3

TABLE OF CONTENTS (Cont.)

<u>Section</u>	<u>Title</u>	<u>Page</u>
	9.5.1.3 Safety Evaluation (Fire Protection Analysis).....	9.5-13
	9.5.1.4 Testing and Inspection.....	9.5-14
	9.5.1.5 Instrumentation Applications.....	9.5-15
	9.5.1.6 Personnel Qualification and Training.....	9.5-15
	9.5.1.7 Quality Assurance.....	9.5-15
	9.5.1.8 Combined License Information.....	9.5-15
9.5.2	Communication System.....	9.5-16
	9.5.2.1 Design Basis.....	9.5-17
	9.5.2.2 System Description.....	9.5-17
	9.5.2.3 System Operation Communication Stations.....	9.5-19
	9.5.2.4 Inspection and Testing Requirements.....	9.5-19
	9.5.2.5 Combined License Information.....	9.5-19
9.5.3	Plant Lighting System.....	9.5-20
	9.5.3.1 Design Basis.....	9.5-20
	9.5.3.2 System Description.....	9.5-21
	9.5.3.3 Safety Evaluation.....	9.5-23
	9.5.3.4 Test and Inspections.....	9.5-23
	9.5.3.5 Combined License Information for Plant Lighting.....	9.5-23
9.5.4	Standby Diesel Fuel Oil System.....	9.5-24
	9.5.4.1 Design Basis.....	9.5-24
	9.5.4.2 System Description Storage and Transfer.....	9.5-24
	9.5.4.3 Safety Evaluation.....	9.5-27
	9.5.4.4 System Evaluation.....	9.5-27
	9.5.4.5 Tests and Inspections.....	9.5-28
	9.5.4.6 Instrumentation Applications.....	9.5-28
	9.5.4.7 Combined License Information.....	9.5-28
9.5.5	References.....	9.5-29
APPENDIX 9A FIRE PROTECTION ANALYSIS		9A-1
9A.1	Introduction.....	9A-1
9A.2	Fire Protection Analysis Methodology.....	9A-1
	9A.2.1 Fire Area Description.....	9A-1
	9A.2.2 Combustible Material Survey.....	9A-2
	9A.2.3 Fire Severity Categorization.....	9A-2
	9A.2.4 Combustible Loading and Equivalent Fire Duration Calculations.....	9A-2
	9A.2.5 Fire Protection Adequacy.....	9A-4
	9A.2.6 Fire Protection System Integrity.....	9A-4
	9A.2.7 Safe Shutdown Evaluation.....	9A-4
	9A.2.7.1 Criteria and Assumptions.....	9A-5
	9A.2.7.2 Safe Shutdown Methodology.....	9A-10

TABLE OF CONTENTS (Cont.)

<u>Section</u>	<u>Title</u>	<u>Page</u>
9A.3	Fire Protection Analysis Results.....	9A-10
9A.3.1	Nuclear Island.....	9A-11
9A.3.1.1	Containment/Shield Building.....	9A-12
9A.3.1.2	Auxiliary Building - Nonradiologically Controlled Areas.....	9A-36
9A.3.1.3	Auxiliary Building - Radiologically Controlled Areas.....	9A-74
9A.3.2	Turbine Building.....	9A-85
9A.3.2.1	Fire Area 2000 AF 01.....	9A-85
9A.3.2.2	Fire Area 2000 AF 02.....	9A-87
9A.3.2.3	Fire Area 2009 AF 01.....	9A-88
9A.3.2.4	Fire Area 2009 AF 02.....	9A-88
9A.3.2.5	Not Used	
9A.3.2.6	Not Used	
9A.3.2.7	Fire Area 2000 AF 03.....	9A-89
9A.3.2.8	Fire Area 2033 AF 02.....	9A-89
9A.3.2.9	Fire Area 2040 AF 01.....	9A-90
9A.3.2.10	Fire Area 2043 AF 01.....	9A-91
9A.3.2.11	Fire Area 2050 AF 01.....	9A-92
9A.3.2.12	Fire Area 2052 AF 01.....	9A-93
9A.3.2.13	Fire Area 2053 AF 01.....	9A-94
9A.3.2.14	Fire Area 2053 AF 02.....	9A-95
9A.3.2.15	Fire Area 2141 AF 01.....	9A-96
9A.3.2.16	Fire Area 2142 AF 01.....	9A-96
9A.3.3	Yard Area and Outlying Buildings.....	9A-97
9A.3.4	Annex Building.....	9A-97
9A.3.4.1	Fire Area 4001 AF 01.....	9A-98
9A.3.4.2	Fire Area 4001 AF 02.....	9A-98
9A.3.4.3A	Fire Area 4002 AF 01.....	9A-99
9A.3.4.3B	Fire Area 4002 AF 03.....	9A-99
9A.3.4.4	Fire Area 4002 AF 02.....	9A-100
9A.3.4.5	Fire Area 4003 AF 01.....	9A-101
9A.3.4.6	Fire Area 4003 AF 02.....	9A-102
9A.3.4.7	Fire Area 4031 AF 01.....	9A-102
9A.3.4.8	Fire Area 4031 AF 02.....	9A-103
9A.3.4.9	Fire Area 4031 AF 05.....	9A-104
9A.3.4.10	Fire Area 4031 AF 06.....	9A-105
9A.3.4.11	Fire Area 4032 AF 01.....	9A-106
9A.3.4.12	Fire Area 4032 AF 02.....	9A-107
9A.3.4.13	Fire Area 4033 AF 01.....	9A-108
9A.3.4.14	Fire Area 4034 AF 01.....	9A-109
9A.3.4.15	Fire Area 4035 AF 01.....	9A-111
9A.3.4.16	Fire Area 4041 AF 01.....	9A-112
9A.3.4.17	Fire Area 4041 AF 02.....	9A-113
9A.3.4.18	Fire Area 4042 AF 01.....	9A-114

TABLE OF CONTENTS (Cont.)

<u>Section</u>	<u>Title</u>	<u>Page</u>
	9A.3.4.19 Fire Area 4042 AF 02.....	9A-115
	9A.3.4.20 Fire Area 4051 AF 01.....	9A-115
	9A.3.4.21 Fire Area 4052 AF 01.....	9A-116
9A.3.5	Radwaste Building.....	9A-118
	9A.3.5.1 Fire Area 5031 AF 01.....	9A-118
9A.3.6	Diesel Generator Building.....	9A-120
	9A.3.6.1 Fire Area 6030 AF 01.....	9A-120
	9A.3.6.2 Fire Area 6030 AF 02.....	9A-121
	9A.3.6.3 Fire Area 6030 AF 03.....	9A-123
	9A.3.6.4 Fire Area 6030 AF 04.....	9A-123
	9A.3.6.5 Fire Area 6001 AF 01.....	9A-124
9A.3.7	Special Topics.....	9A-125
	9A.3.7.1 Evaluation of Spurious Actuation.....	9A-125
	9A.3.7.2 Protection of Accident Mitigation Equipment.....	9A-127
9A.4	References.....	9A-128

LIST OF TABLES

<u>Table No.</u>	<u>Title</u>	<u>Page</u>
9.1-1	Loads and Load Combinations for Fuel Racks.....	9.1-52
9.1-2	Spent Fuel Pool Cooling and Purification System Design Parameters.....	9.1-53
9.1-3	Component Data - Spent Fuel Pool Cooling and Purification System (Sheets 1 – 2).....	9.1-54
9.1-4	Station Blackout/Seismic Event Times.....	9.1-56
9.1-5	Nuclear Island Heavy Load Handling Systems.....	9.1-57
9.1.5-1	Cask Handling Crane Component Data.....	9.1-58
9.1.5-2	Special Lifting Devices Used for the Handling of Critical Loads.....	9.1-59
9.1.5-3	Polar Crane Component Data.....	9.1-60
9.2.1-1	Nominal Service Water Flows and Heat Loads at Different Operating Modes.....	9.2-46
9.2.2-1	Nominal Component Data - Component Cooling Water System.....	9.2-47
9.2.2-2	Plant Components Cooled By Component Cooling Water System.....	9.2-48
9.2.3-1	Guidelines for Demineralized Water (Measured at the Outlet of the Demineralized Water Treatment System).....	9.2-49
9.2.7-1	Component Data - Central Chilled Water System (Nominal Values).....	9.2-50
9.2.8-1	Turbine Building Closed Cooling Water System Equipment Load List.....	9.2-51
9.2.10-1	Hot Water Heating System Design Data (Nominal Values).....	9.2-52
9.3.1-1	Safety-Related Air-Operated Valves (Sheets 1 – 2).....	9.3-43
9.3.1-2	Nominal Component Design Data - Instrument Air Subsystem.....	9.3-45
9.3.1-3	Nominal Component Design Data - Service Air Subsystem.....	9.3-46
9.3.1-4	Nominal Component Design Data - High-Pressure Air Subsystem.....	9.3-47
9.3.3-1	Primary Sampling System Sample Points - Normal Plant Operations (Liquid and Gaseous).....	9.3-48
9.3.3-2	Local Sample Point Not in the Primary Sampling System (Normal Plant Operations) (Sheets 1 – 4).....	9.3-49
9.3.4-1	Secondary Sampling System (Continuous Measurements) (Sheets 1 – 2).....	9.3-53
9.3.4-2	Secondary Sampling System (Selective Measurements).....	9.3-55
9.3.5-1	Component Data - Radioactive Waste Drains System (Nominal Values).....	9.3-56
9.3.6-1	Nominal Chemical and Volume Control System Parameters.....	9.3-57
9.3.6-2	Chemical and Volume Control System Nominal Equipment Design Parameters (Sheets 1 – 3).....	9.3-58
9.4-1	Design Filtration Efficiencies and Nominal Airflow Rates for HVAC Systems.....	9.4-75
9.4.1-1	Component Data – Nuclear Island Nonradioactive Ventilation System, MCR/CSA HVAC Subsystem (Nominal Values) (Sheets 1 – 2).....	9.4-76
9.4.1-2	Component Data – Nuclear Island Nonradioactive Ventilation System, Class 1E Electrical Room HVAC Subsystem (Nominal Values) (Sheets 1 – 3).....	9.4-78
9.4.1-3	Component Data – Nuclear Island Nonradioactive Ventilation System, Passive Containment Cooling System Valve Room Heating and Ventilation Subsystem (Nominal Values).....	9.4-81

LIST OF TABLES (Cont.)

<u>Table No.</u>	<u>Title</u>	<u>Page</u>
9.4.2-1	Component Data – Annex/Auxiliary Buildings Nonradioactive HVAC System, Switchgear Room HVAC Subsystem (Nominal Values).....	9.4-82
9.4.2-2	Component Data – Annex/Auxiliary Buildings Nonradioactive HVAC System, Equipment Room HVAC System (Nominal Values).....	9.4-83
9.4.3-1	Component Data – Radiologically Controlled Area Ventilation System, Auxiliary/Annex Building Ventilation Subsystem (Nominal Values).....	9.4-84
9.4.6-1	Component Data – Containment Recirculation Cooling System, Containment Recirculation Fan Coil Unit Subsystem (Nominal Values).....	9.4-85
9.4.7-1	Component Data – Containment Air Filtration System (Nominal Values) (Sheets 1 – 2).....	9.4-86
9.4.10-1	Component Data – Diesel Generator Building Heating and Ventilation System, Normal Heating and Ventilation Subsystem (Nominal Values) (Sheets 1 – 2).....	9.4-88
9.4.10-2	Component Data – Diesel Generator Building Heating and Ventilation System, Standby Exhaust Ventilation Subsystem (Nominal Values).....	9.4-90
9.4.10-3	Component Data – Diesel Generator Building Heating and Ventilation System, Fuel Oil Day Tank Vault Exhaust Subsystem (Nominal Values).....	9.4-91
9.4.10-4	Component Data – Diesel Generator Building Heating and Ventilation System, Diesel Oil Transfer Module Enclosures Ventilation and Heating Subsystem (Nominal Values).....	9.4-92
9.5.1-1	AP1000 Fire Protection Program Compliance with BTP CMEB 9.5-1 (Sheets 1 – 33).....	9.5-32
9.5.1-2	Component Data - Fire Protection System (Nominal Values).....	9.5-65
9.5.1-3	Exceptions to NFPA Standard Requirements (Sheets 1 – 2).....	9.5-66
9.5.1-4	Capabilities Used to Achieve Cold Shutdown Following a Fire.....	9.5-68
9.5.2-1	Communication Equipment and Locations.....	9.5-69
9.5.4-1	Nominal Component Data Standby Diesel Fuel Oil System (Sheets 1 – 2).....	9.5-70
9.5.4-2	Indicating and Alarm Devices - Standby Diesel Fuel System.....	9.5-72
9A-1	Heat of Combustion Values.....	9A-129
9A-2	Safe Shutdown Components (Sheets 1 – 14).....	9A-130
9A-3	Fire Protection Summary (Sheets 1 – 24).....	9A-144
9A-4	Ventilation Systems Serving Fire Areas Containing Class 1E Components.....	9A-169

LIST OF FIGURES

<u>Figure No.</u>	<u>Title</u>	<u>Page</u>
9.1-1	New Fuel Storage Rack Layout (72 Storage Location) (Sheet 1)	9.1-61
9.1-1	New Fuel Storage Rack Cross Section (Sheet 2)	9.1-62
9.1-2	Region 1 Spent Fuel Storage Rack Layout (Sheet 1).....	9.1-63
9.1-2	Region 1 Spent Fuel Storage Rack Cross Section (Sheet 2)	9.1-64
9.1-3	Region 2 Spent Fuel Storage Rack Layout (Sheet 1).....	9.1-65
9.1-3	Region 2 Spent Fuel Storage Rack Cross Section (Sheet 2)	9.1-66
9.1-4	Spent Fuel Storage Pool Layout	9.1-67
9.1-5	Spent Fuel Pool Cooling System (Normal Operation).....	9.1-68
9.1-6	Spent Fuel Pool Cooling System Piping and Instrumentation Diagram (Sheets 1 – 2).....	9.1-69
9.2.1-1	Service Water System Piping and Instrumentation Diagram	9.2-53
9.2.2-1	Component Cooling Water System Simplified Flow Diagram.....	9.2-55
9.2.2-2	Component Cooling Water System Piping and Instrumentation Diagram (Sheets 1 – 5).....	9.2-57
9.2.4-1	Demineralized Water Transfer and Storage System Containment Isolation Provision	9.2-67
9.2.7-1	Central Chilled Water System Piping and Instrumentation Diagram (Sheets 1 – 3).....	9.2-69
9.3.1-1	Compressed & Instrument Air System Piping and Instrumentation Diagram (Sheets 1 – 3)	9.3-61
9.3.3-1	Simplified Sketch of the Primary Sampling System	9.3-67
9.3.5-1	General Arrangement of Drainage Systems.....	9.3-69
9.3.6-1	Chemical and Volume Control System Piping and Instrumentation Diagram (Sheets 1 – 2).....	9.3-71
9.4.1-1	Nuclear Island Non-Radioactive Ventilation System Piping and Instrumentation Diagram (Sheets 1 – 7)	9.4-93
9.4.2-1	Annex/Aux Non-Radioactive Ventilation System Piping and Instrumentation Diagram (Sheets 1 – 7)	9.4-105
9.4.3-1	Radiologically Controlled Ventilation System Piping and Instrumentation Diagram (Sheets 1 – 3).....	9.4-115
9.4.6-1	Containment Recirculation Cooling System Piping and Instrumentation Diagram	9.4-119
9.4.7-1	Containment Air Filtration System Piping and Instrumentation Diagram (Sheets 1 – 2).....	9.4-121
9.4.8-1	Radwaste Building HVAC System.....	9.4-125
9.4.9-1	Turbine Building HVAC System.....	9.4-126
9.4.10-1	Diesel Generator Building Heating and Ventilation System Piping and Instrumentation Diagram (Sheets 1 – 2)	9.4-127
9.4.11-1	Health Physics and Hot Machine Shop HVAC System.....	9.4-131
9.5.1-1	Fire Protection System Piping and Instrumentation Diagram (Sheets 1 – 3)	9.5-73
9.5.4-1	Standby Diesel Fuel Oil System Piping and Instrumentation Diagram (Sheets 1 – 3).....	9.5-79

LIST OF FIGURES (Cont.)

<u>Figure No.</u>	<u>Title</u>	<u>Page</u>
9A-1	Fire Areas Legend (Sheet 1 of 16).....	9A-170
9A-1	Nuclear Island Fire Area Plan at Elevation 66'-6" (Sheet 2 of 16)	9A-171
9A-1	Nuclear Island Fire Area Plan at Elevation 82'-6" (Sheet 3 of 16)	9A-173
9A-1	Nuclear Island Fire Area Plan at Elevation 96'-6" (Sheet 4 of 16)	9A-175
9A-1	Nuclear Island Fire Areas Plan at Elevation 100'-0" & 107'-2" (Sheet 5 of 16)	9A-177
9A-1	Nuclear Island Fire Area Plan at Elevation 117'-6" (Sheet 6 of 16)	9A-179
9A-1	Nuclear Island Fire Area Plan at Elevation 135'-3" (Sheet 7 of 16)	9A-181
9A-1	Nuclear Island Fire Areas Plan at Elevation 153'-0" & 160'-6" (Sheet 8 of 16)	9A-183
9A-1	Nuclear Island Fire Areas Plan at Elevation 160'-6" & 180'-0" (Sheet 9 of 16)	9A-185
9A-1	Nuclear Island Fire Area Section A-A (Sheet 10 of 16)	9A-187
9A-1	Nuclear Island Fire Area Section B-B (Sheet 11 of 16).....	9A-189
9A-1	Nuclear Island Fire Areas Section C-C & H-H (Sheet 12 of 16).....	9A-191
9A-1	Nuclear Island Fire Area Section G-G (Sheet 13 of 16)	9A-193
9A-1	Nuclear Island Fire Area Section J-J (Sheet 14 of 16).....	9A-195
9A-1	Nuclear Island Fire Area Section K-K (Sheet 15 of 16)	9A-197
9A-1	Nuclear Island Fire Areas Section I-I & R-R (Sheet 16 of 16)	9A-199
9A-2	Turbine Building Fire Area Plan at Elevation 100'-0" (Sheet 1 of 5).....	9A-201
9A-2	Turbine Building Fire Area Plan at Elevation 117'-6" (Sheet 2 of 5).....	9A-203
9A-2	Turbine Building Fire Area Plan at Elevation 135'-3" (Sheet 3 of 5).....	9A-205
9A-2	Turbine Building Fire Area Plan at Elevation 161'-0" (Sheet 4 of 5).....	9A-207
9A-2	Turbine Building Fire Areas Plan at Elevation 245'-0" & 226'-10" (Sheet 5 of 5)	9A-209
9A-3	Annex I & II Building Fire Areas Plan at Elevation 100'-0" & 107'-2" (Sheet 1 of 3)	9A-211
9A-3	Annex I & II Building Fire Area Plan at Elevation 117'-6" (Sheet 2 of 3)	9A-213
9A-3	Annex I & II Building Fire Area Plan at Elevation 135'-3" (Sheet 3 of 3).....	9A-215
9A-4	Radwaste Building Fire Area Plan at Elevation 100'-0"	9A-217
9A-5	Diesel Generator Building Fire Area Plan at Elevation 100'-0"	9A-219