TABLE OF CONTENTS

Section	Title	Page
CHAPTER 11	RADIOACTIVE WASTE MANAGEMENT	11.1-1
11.1	Source Terms	11.1-1
11.1.1	Design Basis Reactor Coolant Activity	11.1-1
11.1.1.1	Fission Products	11.1-1
11.1.1.2	Corrosion Products	11.1-3
11.1.1.3	Tritium	11.1-3
11.1.1.4	Nitrogen-16	11.1-3
11.1.2	Design Basis Secondary Coolant Activity	11.1-4
11.1.3	Realistic Reactor Coolant and Secondary Coolant Activity	11.1-4
11.1.4	Core Source Term	11.1-4
11.1.5	Process Leakage Sources	11.1-4
11.1.6	Combined License Information	11.1-4
11.1.7	References	11.1-4
11.2	Liquid Waste Management Systems	11.2-1
11.2.1	Design Basis	11.2-1
11.2.1.1	Safety Design Basis	11.2-1
11.2.1.2	Power Generation Design Basis	11.2-1
11.2.1.3	Compliance with 10 CFR 20.1406	11.2-6
11.2.2	System Description	11.2-6
11.2.2.1	Waste Input Streams	11.2-6
11.2.2.2	Other Operations	11.2-9
11.2.2.3	Component Description	11.2-10
11.2.2.4	Instrumentation Design	11.2-13
11.2.2.5	System Operation and Performance	11.2-13
11.2.3	Radioactive Releases	11.2-17
11.2.3.1	Discharge Requirements	11.2-18
11.2.3.2	Estimated Annual Releases	11.2-18
11.2.3.3	Dilution Factor	11.2-18
11.2.3.4	Release Concentrations	11.2-18
11.2.3.5	Estimated Doses	11.2-19
11.2.3.6	Quality Assurance	11.2-19
11.2.4	Preoperational Testing	11.2-19
11.2.4.1	Sump Level Instrument Testing	11.2-19
11.2.4.2	Discharge Control/Isolation Valve Testing	11.2-19
11.2.5	Combined License Information	11.2-20
11.2.5.1	Liquid Radwaste Processing by Mobile Equipment	11.2-20
11.2.5.2	Cost Benefit Analysis of Population Doses	11.2-20
11.2.5.3	Identification of Ion Exchange and Adsorbent Media	11.2-20
11.2.5.4	Dilution and Control of Boric Acid Discharge	11.2-20
11.2.6	References	11.2-21
11.3	Gaseous Waste Management System	11.3-1
11.3.1	Design Basis	11.3-1
11.3.1.1	Safety Design Basis	11.3-1

11.3.1.2 Power Generation Design Basis 11.3-1

TABLE OF CONTENTS (Cont.)

Section	Title	Page
	11.3.1.3 Compliance with 10 CFR 20.1406	11.3-4
11.3.2	System Description	11.3-4
	11.3.2.1 General Description	11.3-4
	11.3.2.2 System Operation	11.3-5
	11.3.2.3 Component Description	11.3-7
11.3.3	Radioactive Releases	11.3-9
	11.3.3.1 Discharge Requirements	11.3-9
	11.3.3.2 Estimated Annual Releases	11.3-9
	11.3.3.3 Release Points	11.3-9
	11.3.3.4 Estimated Doses	11.3-10
	11.3.3.5 Maximum Release Concentrations	11.3-10
	11.3.3.6 Quality Assurance	11.3-10
11.3.4	Inspection and Testing Requirements	11.3-10
	11.3.4.1 Preoperational Testing	11.3-10
	11.3.4.2 Preoperational Inspection	11.3-10
11.3.5	Combined License Information	11.3-11
	11.3.5.1 Cost Benefit Analysis of Population Doses	11.3-11
	11.3.5.2 Identification of Adsorbent Media	11.3-11
11.3.6	References	11.3-11
11.4	Solid Waste Management	11.4-1
11.4.1	Design Basis	11.4-1
	11.4.1.1 Safety Design Basis	11.4-1
	11.4.1.2 Power Generation Design Basis	11.4-1
	11.4.1.3 Functional Design Basis	11.4-1
	11.4.1.4 Compliance with 10 CFR 20.1406	11.4-3
11.4.2	System Description	11.4-3
	11.4.2.1 General Description	11.4-3
	11.4.2.2 Component Description	11.4-6
	11.4.2.3 System Operation	11.4-8
	11.4.2.4 Waste Processing and Disposal Alternatives	11.4-11
	11.4.2.5 Facilities	11.4-12
11.4.3	System Safety Evaluation	11.4-13
11.4.4	Tests and Inspections	11.4-13
11.4.5	Quality Assurance	11.4-13
11.4.6	Combined License Information for Solid Waste Management System Process Control Program	11.4-14
11.4.7	References	11.4-14
11.5	Radiation Monitoring	11.5-1
11.5.1	Design Basis	11.5-1
	11.5.1.1 Safety Design Basis	11.5-1
	11.5.1.2 Power Generation Design Basis	11.5-2
11.5.2	System Description	11.5-2

11.5.2.1 Radiation Monitoring System 11.5-2

TABLE OF CONTENTS (Cont.)

Section	Title	Page
11.5.2.2	Monitor Functional Description	11.5-3
11.5.2.3	Monitor Descriptions	11.5-3
11.5.2.4	Inservice Inspection, Calibration, and Maintenance	11.5-12
11.5.3	Effluent Monitoring and Sampling	11.5-12
11.5.4	Process and Airborne Monitoring and Sampling	11.5-13
11.5.5	Post-Accident Radiation Monitoring	11.5-13
11.5.6	Area Radiation Monitors	11.5-13
11.5.6.1	Design Objectives	11.5-14
11.5.6.2	Post-Accident Area Monitors	11.5-15
11.5.6.3	Normal Range Area Monitors	11.5-16
11.5.6.4	Fuel Handling Area Criticality Monitors	11.5-16
11.5.6.5	Quality Assurance	11.5-17
11.5.7	Combined License Information	11.5-17

LIST OF TABLES

Table No.	Title	Page
11.1-1	Parameters Used in the Calculation of Design Basis Fission Product Activities (Sheets 1 – 2)	11.1-5
11.1-2	Design Basis Reactor Coolant Activity	11.1-7
11.1-3	Tritium Sources	11.1-8
11.1-4	Parameters Used to Calculate Secondary Coolant Activity	11.1-9
11.1-5	Design Basis Steam Generator Secondary Side Liquid Activity	11.1-10
11.1-6	Design Basis Steam Generator Secondary Side Steam Activity	11.1-11
11.1-7	Parameters Used to Describe Realistic Sources	11.1-12
11.1-8	Realistic Source Terms (Sheets 1 – 4)	11.1-13
11.2-1	Liquid Inputs and Disposition (Sheets 1 – 2)	11.2-22
11.2-2	Component Data – Liquid Radwaste System (Sheets 1 – 7)	11.2-24
11.2-3	Summary of Tank Level Indication, Level Annunciators, and Overflows	11.2-31
11.2-4	Tank Surge Capacity	11.2-32
11.2-5	Decontamination Factors	11.2-33
11.2-6	Input Parameters for the Gale Computer Code (Sheets 1 – 3)	11.2-34
11.2-7	Releases to Discharge Canal (Ci/Yr) Calculated by Gale Code (Sheets 1 – 2)	11.2-37
11.2-8	Comparison of Annual Average Liquid Release Concentrations with 10 CFR 20 for Expected Releases Effluent Concentration Limits (Sheets 1 – 2)	11.2-39
11.2-9	Comparison of Annual Average Liquid Release Concentrations with 10 CFR 20 Effluent Concentration Limits for Releases With Maximum Defined Fuel Defects (Sheets 1 – 2)	11.2-41
11.3-1	Gaseous Radwaste System Parameters	11.3-12
11.3-2	Component Data (Nominal) – Gaseous Radwaste System (Sheets 1 – 2)	11.3-13
11.3-3	Expected Annual Average Release of Airborne Radionuclides as Determined by the PWR-Gale Code, Revision 1 (Sheets 1 – 3)	11.3-15
11.3-4	Comparison of Calculated Offsite Airborne Concentrations with 10 CFR 20 Limits (Sheets 1 – 2)	11.3-18
11.4-1	Estimated Solid Radwaste Volumes	11.4-15
11.4-2	Expected Annual Curie Content of Primary Influents (Sheets 1 – 2)	11.4-16
11.4-3	Maximum Annual Curie Content of Primary Influents (Sheets 1 – 2)	11.4-18
11.4-4	Expected Annual Curie Content of Shipped Primary Wastes (Sheets 1 – 2)	11.4-20
11.4-5	Maximum Annual Curie Content of Shipped Primary Wastes (Sheets 1 – 2)	11.4-22
11.4-6	Expected Annual Curie Content of Secondary Waste as Generated (Sheets 1 – 2)	11.4-24
11.4-7	Maximum Annual Curie Content of Secondary Waste as Generated (Sheets 1 – 2)	11.4-26
11.4-8	Expected Annual Curie Content of Shipped Secondary Wastes (Sheets 1 – 2)	11.4-28
11.4-9	Maximum Annual Curie Content of Shipped Secondary Wastes (Sheets 1 – 2)	11.4-30
11.4-10	Component Data – Solid Waste Management System (Nominal) (Sheets 1 – 2)	11.4-32
11.5-1	Radiation Monitor Detector Parameters (Sheets 1 – 2)	11.5-18
11.5-2	Area Radiation Monitor Detector Parameters	11.5-20

LIST OF FIGURES

Figure No.	Title	Page
11.2-1	Liquid Radwaste System Simplified Piping and Instrumentation Diagram	11.2-43
11.2-2	Liquid Radwaste System Piping and Instrumentation Diagram (Sheets 1 – 8)	11.2-45
11.3-1	Gaseous Radwaste System Piping and Instrumentation Diagram	11.3-20
11.3-2	Gaseous Radwaste System Piping and Instrumentation Diagram	11.3-21
11.4-1	Waste Processing System Flow Diagram	11.4-35
11.5-1	Process In-Line Radiation Monitor	11.5-21
11.5-2	Safety-Related Containment High Range Radiation Monitor	11.5-22
11.5-3	Containment Atmosphere Radiation Monitor	11.5-23
11.5-4	Plant Vent Radiation Monitor	11.5-24
11.5-5	In-Line HVAC Duct Radiation Monitor	11.5-25
11.5-6	Safety-Related Main Control Room Supply Duct Radiation Monitor	11.5-26
11.5-7	Liquid Offline Radiation Monitor	11.5-27
11.5-8	Adjacent to Line Radiation Monitor	11.5-28
11.5-9	HVAC Duct Particulate Radiation Monitor	11.5-29