

CHAPTER 11—RADIOACTIVE WASTE MANAGEMENT TABLE OF CONTENTS

11.0	RADIOACTIVE WASTE MANAGEMENT	11.1-1
11.1	Source Terms.....	11.1-1
11.1.1	Sources of Radioactivity: Fission, Activation, and Corrosion Products.....	11.1-1
11.1.2	Design Basis.....	11.1-2
11.1.2.1	Design Basis for Radwaste System and Normal Effluents	11.1-2
11.1.2.2	Design Basis for Shielding	11.1-3
11.1.2.3	Reactor Coolant System Design Basis Source Term1	1.1-3
11.1.2.4	Secondary Coolant Design Basis Source Term	11.1-3
11.1.3	Reactor Coolant System and Secondary Coolant Realistic Source Terms	11.1-4
11.1.4	References	11.1-4
11.2	Liquid Waste Management System.....	11.2-1
11.2.1	Design Basis.....	11.2-1
11.2.1.1	Design Objectives	11.2-2
11.2.1.2	Design Criteria.....	11.2-2
11.2.2	System Description.....	11.2-5
11.2.2.1	Liquid Waste Storage System Operation	11.2-7
11.2.2.2	Liquid Waste Processing System Operation	11.2-11
11.2.2.3	Sampling	11.2-14
11.2.2.4	Component Description	11.2-14
11.2.2.5	Inspection and Testing Requirements	11.2-24
11.2.3	Radioactive Effluent Releases.....	11.2-24
11.2.3.1	Discharge Requirements.....	11.2-25
11.2.3.2	Estimated Annual Releases	11.2-25
11.2.3.3	Release Points and Dilution Factors	11.2-25
11.2.3.4	Estimated Doses	11.2-26

11.2.3.5	Maximum Release Concentrations	11.2-26
11.2.3.6	Radioactive Liquid Waste System Leak or Failure	11.2-27
11.2.3.7	Postulated Radioactive Releases due to Liquid-Containing Tank Failures.....	11.2-27
11.2.3.8	Quality Assurance	11.2-28
11.2.4	Liquid Waste Management System Cost-Benefit Analysis ..	11.2-28
11.2.4.1	Calculation of Population Doses	11.2-28
11.2.4.2	Dose Benefit and Augment Costs	11.2-29
11.2.4.3	Alternative Analysis	11.2-30
11.2.5	References	11.2-30
11.3	Gaseous Waste Management Systems	11.3-1
11.3.1	Design Basis.....	11.3-1
11.3.1.1	Design Objectives	11.3-2
11.3.1.2	Design Criteria.....	11.3-2
11.3.2	System Description.....	11.3-4
11.3.2.1	Normal Operation.....	11.3-5
11.3.2.2	Surge Gas Operation	11.3-7
11.3.2.3	Component Description.....	11.3-7
11.3.2.4	Failure Tolerance	11.3-12
11.3.2.5	Inspection and Testing Requirements.....	11.3-15
11.3.3	Radioactive Effluent Releases.....	11.3-16
11.3.3.1	Discharge Requirements.....	11.3-17
11.3.3.2	Estimated Annual Releases	11.3-17
11.3.3.3	Release Points	11.3-17
11.3.3.4	Estimated Doses	11.3-18
11.3.3.5	Maximum Release Concentrations	11.3-19
11.3.3.6	Radioactive Gaseous Waste System Leak or Failure	11.3-19
11.3.3.7	Quality Assurance	11.3-19
11.3.4	Gaseous Waste Management System Cost-Benefit Analysis	11.3-19
11.3.4.1	Calculation of Population Doses	11.3-20
11.3.4.2	Dose Benefits and Augment Cost	11.3-20
11.3.5	References	11.3-22
11.4	Solid Waste Management Systems	11.4-1

11.4.1	Design Basis.....	11.4-1
11.4.1.1	Design Objectives	11.4-2
11.4.1.2	Design Criteria.....	11.4-2
11.4.2	System Description.....	11.4-4
11.4.2.1	Solid Waste Processing and Storage System (Dry Solid Waste)	11.4-4
11.4.2.2	Radioactive Concentrates Processing System (Wet Solid Wastes).....	11.4-5
11.4.2.3	Component Description.....	11.4-7
11.4.2.4	Packaging, Storage, and Shipping	11.4-13
11.4.2.5	Effluent Controls.....	11.4-14
11.4.2.6	Operation and Personnel Exposure	11.4-14
11.4.2.7	Inspection and Testing Requirements.....	11.4-15
11.4.2.8	Instrumentation Requirements	11.4-15
11.4.3	Radioactive Effluent Releases.....	11.4-15
11.4.4	Solid Waste Management System Cost-Benefit Analysis	11.4-16
11.4.5	Failure Tolerance.....	11.4-16
11.4.6	References	11.4-17
11.5	Process and Effluent Radiological Monitoring and Sampling Systems.....	11.5-1
11.5.1	Design Basis.....	11.5-1
11.5.1.1	Design Objectives	11.5-2
11.5.1.2	Design Criteria.....	11.5-2
11.5.2	System Description.....	11.5-3
11.5.3	Effluent Monitoring and Sampling.....	11.5-4
11.5.3.1	Gaseous Effluents	11.5-4
11.5.3.2	Liquid Effluents	11.5-5
11.5.4	Process Monitoring and Sampling.....	11.5-6
11.5.4.1	Main Steam Radiation Monitoring System	11.5-6
11.5.4.2	Condenser Air Removal Radiation Monitoring System	11.5-7
11.5.4.3	Steam Generator Blowdown Radiation Monitoring System	11.5-7
11.5.4.4	Component Cooling Water Radiation Monitoring System	11.5-8



11.5.4.5	Gaseous Waste Disposal Radiation Monitoring System	11.5-8
11.5.4.6	Reactor Coolant Radiation Monitoring and Sampling System	11.5-9
11.5.4.7	Chilled Water Supply for the Gaseous Waste Disposal Sampling System.....	11.5-9
11.5.5	References	11.5-10