

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 Term..... 11.1-3	
11.1.2.4	Secondary Coolant Design Basis Source Term	11.1-4
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.....	11.2-3
11.2.2	System Description.....	11.2-6
11.2.2.1	Liquid Waste Storage System Operation	11.2-7
11.2.2.2	Liquid Waste Processing System Operation	11.2-13
11.2.2.3	Sampling	11.2-17
11.2.2.4	Component Description.....	11.2-17
11.2.2.5	Inspection and Testing Requirements.....	11.2-26
11.2.2.6	Instrumentation Design	11.2-27
11.2.3	Radioactive Effluent Releases.....	11.2-28
11.2.3.1	Discharge Requirements.....	11.2-28
11.2.3.2	Estimated Annual Releases	11.2-28
11.2.3.3	Release Points and Dilution Factors	11.2-29

11.2.3.4	Estimated Doses	11.2-29
11.2.3.5	Maximum Release Concentrations	11.2-31
11.2.3.6	Radioactive Liquid Waste System Leak or Failure	11.2-32
11.2.3.7	Postulated Radioactive Releases due to Liquid-Containing Tank Failures.....	11.2-32
11.2.3.8	Quality Assurance	11.2-34
11.2.4	Liquid Waste Management System Cost-Benefit Analysis....	11.2-34
11.2.5	References	11.2-34
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.....	11.3-3
11.3.2	System Description.....	11.3-5
11.3.2.1	Normal Operation	11.3-6
11.3.2.2	Surge Gas Operation	11.3-7
11.3.2.3	Component Description.....	11.3-8
11.3.2.4	Failure Tolerance	11.3-13
11.3.2.5	Inspection and Testing Requirements.....	11.3-16
11.3.3	Radioactive Effluent Releases.....	11.3-17
11.3.3.1	Discharge Requirements.....	11.3-18
11.3.3.2	Estimated Annual Releases	11.3-18
11.3.3.3	Release Points	11.3-18
11.3.3.4	Estimated Doses	11.3-19
11.3.3.5	Maximum Release Concentrations	11.3-20
11.3.3.6	Radioactive Gaseous Waste System Leak or Failure	11.3-21
11.3.3.7	Quality Assurance	11.3-22
11.3.4	Gaseous Waste Management System Cost-Benefit Analysis	11.3-22
11.3.5	References	11.3-23
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.....	11.4-5

11.4.2.1	Solid Waste Processing and Storage System (Dry Solid Waste)	11.4-5
11.4.2.2	Radioactive Concentrates Processing System (Wet Solid Wastes)	11.4-6
11.4.2.3	Component Description	11.4-8
11.4.2.4	Packaging, Storage, and Shipping	11.4-14
11.4.2.5	Effluent Controls	11.4-15
11.4.2.6	Operation and Personnel Exposure	11.4-15
11.4.2.7	Inspection and Testing Requirements	11.4-16
11.4.2.8	Instrumentation Requirements	11.4-16
11.4.3	Radioactive Effluent Releases	11.4-16
11.4.4	Solid Waste Management System Cost-Benefit Analysis	11.4-17
11.4.5	Failure Tolerance	11.4-17
11.4.6	Quality Assurance	11.4-18
11.4.7	References	11.4-18
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	11.5-5
11.5.3.1	Gaseous Effluents	11.5-5
11.5.3.2	Liquid Effluents	11.5-14
11.5.4	Process Monitoring and Sampling	11.5-14
11.5.4.1	Main Steam Radiation Monitoring System	11.5-15
11.5.4.2	Main Condenser Evacuation Radiation Monitoring System	11.5-17
11.5.4.3	Steam Generator Blowdown Radiation Monitoring System	11.5-17
11.5.4.4	Component Cooling Water Radiation Monitoring System	11.5-18
11.5.4.5	Gaseous Waste Disposal Radiation Monitoring System	11.5-19
11.5.4.6	Nuclear Sampling System	11.5-19

11.5.4.7	Chilled Water Supply for the Gaseous Waste Disposal Sampling System	11.5-20
11.5.4.8	Radiation Monitoring System for RCS Leakage Detection	11.5-20
11.5.4.9	Essential Service Water System	11.5-23
11.5.4.10	Fuel Pool Purification System	11.5-23
11.5.4.11	Nuclear Island Vent and Drain System	11.5-23
11.5.4.12	Laundry Handling Room and Decontamination System....	11.5-23
11.5.4.13	Solid Radwaste System	11.5-24
11.5.4.14	Reactor Boron and Water Makeup System.....	11.5-24
11.5.4.15	Turbine Building Drains and Vents System.....	11.5-24
11.5.4.16	Clean Drains System.....	11.5-25
11.5.4.17	Chemical and Volume Control System (CVCS) High Pressure Coolers.....	11.5-25
11.5.4.18	Safety Chilled Water System.....	11.5-26
11.5.5	References	11.5-26