

CHAPTER 12— RADIATION PROTECTION

LIST OF TABLES

Table 12.2-1	Reactor Vessel Model Dimensions (cm).....	12.2-13
Table 12.2-2	Neutron and Gamma Fluxes at Primary Shield Concrete.....	12.2-14
Table 12.2-3	Full-Core Bounding Photon Spectra at 4612 MW _t	12.2-15
Table 12.2-4	Nitrogen-16 Concentration Along Reactor Coolant Loop.....	12.2-18
Table 12.2-5	Photon Spectra for Pressurizer.....	12.2-19
Table 12.2-6	Corrosion Product Deposits on the Main Coolant Loops.....	12.2-20
Table 12.2-7	Photon Spectra for Water Phase of Volume Control Tank	12.2-21
Table 12.2-8	Photon Spectra for Gas Phase of Volume Control Tank	12.2-22
Table 12.2-9	CPS Design Input	12.2-23
Table 12.2-10	Photon Spectra for the Coolant Purification System (CPS1) Mixed Bed Demineralizer.....	12.2-24
Table 12.2-11	Activity Inventory for the Coolant Purification System Cartridge Filter	12.2-25
Table 12.2-12	Photon Spectra for Water Phase of Degasifier	12.2-26
Table 12.2-13	Photon Spectra for Gas Phase of Degasifier.....	12.2-27
Table 12.2-14	Photon Spectra for FPCPS Mixed Bed Demineralizer.....	12.2-28
Table 12.2-15	Photon Spectra for Group I Liquid Waste Storage Tanks and Sludge Tank.....	12.2-29
Table 12.2-16	Photon Spectra for Liquid Waste Processing System Evaporator and Evaporator Column – Liquid Phase.....	12.2-30
Table 12.2-17	Photon Spectra for Purge Gas Circuit and Charcoal Holdup System.....	12.2-31
Table 12.2-18	Photon Spectra for ESF Filters Post-LOCA.....	12.2-32
Table 12.2-19	Parameters and Assumptions for Calculating Airborne Radioactive Concentrations.....	12.2-34
Table 12.2-20	Airborne Radioactivity Concentrations.....	12.2-35
Table 12.2-21	Post-LOCA Photon Spectra for Waterborne Sources.....	12.2-36
Table 12.2-22	Photon Spectra for Residual Heat Removal System	12.2-39
Table 12.2-23	Photon Release Rates for Aeroballs.....	12.2-40
Table 12.2-24	Radioactivity Content of Group I Liquid Waste Storage Tanks...	12.2-41

Table 12.2-25	Radioactivity Content of Liquid Waste Processing System Evaporator	12.2-42
Table 12.2-26	Radioactivity Content of Liquid Waste Concentrate Tank.....	12.2-44
Table 12.2-27	Radioactivity Content of Liquid Waste Monitoring Tanks.....	12.2-45
Table 12.2-28	Radioactivity Content of Purge Gas Circuit.....	12.2-46
Table 12.2-29	Radioactivity Content of Charcoal Holdup Beds	12.2-47
Table 12.2-30	Radioactivity Content of Concentrate Buffer Tank.....	12.2-48
Table 12.2-31	Radioactivity Content of Resin Waste Tank.....	12.2-49
Table 12.2-32	Radioactivity Content of Steam Generator Blowdown Mixed Bed Demineralizer	12.2-50
Table 12.2-33	Activity Inventory for Water Phase of Volume Control Tank	12.2-51
Table 12.2-34	Activity Inventory for Gas Phase of Volume Control Tank.....	12.2-52
Table 12.2-35	Activity Inventory for the Coolant Purification System (CPS1) Mixed Bed Demineralizer.....	12.2-53
Table 12.2-36	Photon Spectra for the Coolant Purification System Cartridge Filter	12.2-54
Table 12.2-37	Activity Inventory for Resin Waste Tank	12.2-55
Table 12.2-38	Photon Spectra for Resin Waste Tank.....	12.2-56
Table 12.2-39	Activity Inventory for Water Phase of Degasifier.....	12.2-57
Table 12.2-40	Activity Inventory for Gas Phase of Degasifier.....	12.2-58
Table 12.2-41	Activity Inventory for Steam Generator Blowdown Mixed Bed Demineralizer	12.2-59
Table 12.2-42	Photon Spectra for Steam Generator Blowdown Mixed Bed Demineralizer	12.2-60
Table 12.2-43	Activity Inventory for Steam Generator Blowdown Cation Demineralizer.....	12.2-61
Table 12.2-44	Photon Spectra for Steam Generator Blowdown Cation Demineralizer	12.2-62
Table 12.2-45	Radioactivity Content of Steam Generator Blowdown Cation Demineralizer.....	12.2-63
Table 12.2-46	Activity Inventory for FPCPS Mixed Bed Demineralizer	12.2-64
Table 12.2-47	SFP Water and Fuel Building Airborne Activity Inventory.....	12.2-65
Table 12.2-48	Photon Spectra for SFP Water and Fuel Building Air	12.2-68
Table 12.2-49	Activity Inventory for Group I Liquid Waste Storage Tanks and Sludge Tank.....	12.2-69

Table 12.2-50	Activity Inventory for Liquid Waste Processing System Evaporator and Evaporator Column – Liquid Phase.....	12.2-71
Table 12.2-51	Activity Inventory for Liquid Waste Concentrate Tank	12.2-73
Table 12.2-52	Photon Spectra for Liquid Waste Concentrate Tank.....	12.2-74
Table 12.2-53	Activity Inventory for Liquid Waste Monitoring Tanks and Distillate Tank	12.2-75
Table 12.2-54	Photon Spectra for Liquid Waste Monitoring Tanks and Distillate Tank	12.2-76
Table 12.2-55	Activity Inventory for Charcoal Holdup System.....	12.2-77
Table 12.2-56	Activity Inventory for Purge Gas Circuit	12.2-78
Table 12.2-57	Activity Inventory for Concentrate Buffer Tank and Waste Drum	12.2-79
Table 12.2-58	Photon Spectra for Concentrate Buffer Tank and Waste Drum..	12.2-82
Table 12.2-59	Activity Inventory for Water Phase of Coolant Storage Tank.....	12.2-83
Table 12.2-60	Photon Spectra for Water Phase of Coolant Storage Tank	12.2-84
Table 12.2-61	Activity Inventory for Gas Phase of Coolant Storage Tank.....	12.2-85
Table 12.2-62	Photon Spectra for Gas Phase of Coolant Storage Tank	12.2-86
Table 12.2-63	Activity Inventory for Coolant Purification System (CPS2) Mixed Bed Demineralizer.....	12.2-87
Table 12.2-64	Photon Spectra for Coolant Purification System (CPS2) Mixed Bed Demineralizer.....	12.2-88
Table 12.2-65	Activity Inventory for Coolant Treatment System Vapor Compressor	12.2-89
Table 12.2-66	Photon Spectra for Coolant Treatment System Vapor Compressor	12.2-90
Table 12.2-67	Activity Inventory for Coolant Treatment System Recuperative Boric Acid Cooler and Electrical Pre-Heater	12.2-91
Table 12.2-68	Photon Spectra for Coolant Treatment System Recuperative Boric Acid Cooler and Electrical Pre-Heater	12.2-92
Table 12.2-69	Activity Inventory for the Boric Acid Storage Tanks	12.2-93
Table 12.2-70	Photon Spectra for the Boric Acid Storage Tanks	12.2-94
Table 12.3-1	Deleted.....	12.3-72
Table 12.3-2	U.S. EPR Radiation Zone Designation	12.3-73
Table 12.3-3	Radiation Monitor Detector Parameters.....	12.3-74
Table 12.3-4	Airborne Radioactivity Detector Parameters.....	12.3-77



Table 12.3-5	Estimated Annual Personnel Doses	12.3-81
Table 12.3-6	Dose Estimate for Reactor Operations and Surveillance.....	12.3-81
Table 12.3-7	Dose Estimate for Routine Inspection and Maintenance	12.3-82
Table 12.3-8	Dose Estimate for Inservice Inspection.....	12.3-83
Table 12.3-9	Dose Estimate for Special Maintenance	12.3-84
Table 12.3-10	Dose Estimate for Waste Processing	12.3-85
Table 12.3-11	Dose Estimate for Refueling	12.3-86
Table 12.3-12	U.S. EPR Estimated Accident Mission Dose	12.3-87
Table 12.3-13	Maximum Airborne Concentrations in Radiological Vital Areas at or Beyond the Time of First Access	12.3-89
Table 12.3-14	Deleted.....	12.3-92
Table 12.3-15	Component Shielding Input Parameters for the U.S. EPR Fuel Building (UFA).....	12.3-93
Table 12.3-16	Component Shielding Input Parameters for the U.S. EPR Radwaste Building (UKS)	12.3-94
Table 12.3-17	Component Shielding Input Parameters for the U.S. EPR Auxiliary Building (UKA).....	12.3-95
Table 12.3-18	Component Shielding Input Parameters for the U.S. EPR Safeguards Building (UJH)	12.3-97