

**TABLE 3.1.2-1 REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Top Head Enclosure (Top Head)	M-1	Low Alloy Steel	Indoor Air (External)	None	None			G, 109
			Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to General Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry	IV.A1.1-a	3.1.1-34	B
			Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.A1.1-b	3.1.1-01		
	M-4	Low Alloy Steel	Indoor Air (External)	None	None			G, 109
			Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to General Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry	IV.A1.1-a	3.1.1-34	B
			Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.A1.1-b	3.1.1-01		

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Top Head Enclosure (Nozzles (Vent, Top Head Spray or Reactor Core Isolation Cooling [RCIC], and Spare))	M-1	Low Alloy Steel	Indoor Air (External)	None	None			G, 109
			Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to General Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry	IV.A1.1-a	3.1.1-34	B
			Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.A1.1-b	3.1.1-01		
Top Head Enclosure (Head Flange)	M-1	Low Alloy Steel with Stainless Steel cladding	Indoor Air (External)	None	None			G, 109
			Treated Water (Includes Steam) (Internal)	Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			H
			Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.A1.1-b	3.1.1-01		

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Top Head Enclosure (Closure Studs and Nuts)	M-1	Carbon Steel - Low Alloy Steel	Indoor Air Leaking Treated Water (External)	Loss of Material due to Crevice Corrosion Loss of Material due to General Corrosion Loss of Material due to Pitting Corrosion	Reactor Head Closure Studs			H, 113
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
				Cracking due to SCC	Reactor Head Closure Studs	IV.A1.1-c	3.1.1-22	A
Vessel Shell (Vessel Flange)	M-1	Low Alloy Steel with Stainless Steel cladding	Indoor Air (External)	None	None			G, 109
			Treated Water (Includes Steam) (Internal)	Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			H
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.A1.2-a	3.1.1-01	

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Vessel Shell (Upper Shell)	M-1	Low Alloy Steel with Stainless Steel cladding	Indoor Air (External)	None	None			G, 109
			Treated Water (Includes Steam) (Internal)	Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			H
				Cracking due to Thermal Fatigue	TCAA, evaluated in accordance with 10 CFR 54.21(c)	IV.A1.2-a	3.1.1-01	
Vessel Shell (Intermediate Nozzle Shell)	M-1	Low Alloy Steel with Stainless Steel cladding	Indoor Air (External)	None	None			G, 109
			Treated Water (Includes Steam) (Internal)	Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			H
				Cracking due to Thermal Fatigue	TCAA, evaluated in accordance with 10 CFR 54.21(c)	IV.A1.2-b	3.1.1-01	

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Vessel Shell (Intermediate Beltline Shell)	M-1	Low Alloy Steel with Stainless Steel cladding	Indoor Air (External)	None	None			G, 109
			Treated Water (Includes Steam) (Internal)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.A1.2-b	3.1.1-01	
				Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			H
				Reduction of Fracture Toughness due to Neutron Irradiation Embrittlement	TLAA, evaluated in accordance with Appendix G of 10 CFR 50 and RG 1.99	IV.A1.2-c	3.1.1-04	
					Reactor Vessel Surveillance	IV.A1.2-d	3.1.1-05	A
Vessel Shell (Lower Shell)	M-1	Low Alloy Steel with Stainless Steel cladding	Indoor Air (External)	None	None			G, 109
			Treated Water (Includes Steam) (Internal)	Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			H
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.A1.2-b	3.1.1-01	

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Vessel Shell (Beltline Welds)	M-1	Low Alloy Steel with Stainless Steel cladding	Indoor Air (External)	None	None			G, 109
			Treated Water (Includes Steam) (Internal)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.A1.2-b	3.1.1-01	
				Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			H
				Reduction of Fracture Toughness due to Neutron Irradiation Embrittlement	TLAA, evaluated in accordance with Appendix G of 10 CFR 50 and RG 1.99	IV.A1.2-c	3.1.1-04	
					Reactor Vessel Surveillance	IV.A1.2-d	3.1.1-05	A
Vessel Shell (Attachment Welds)	M-1	Stainless Steel	Treated Water (Includes Steam) (External)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
				Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			H, 103
				Cracking due to SCC	Water Chemistry and Reactor Vessel and Internals Structural Integrity	IV.A1.2-e	3.1.1-28	E

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Vessel Shell (Attachment Welds) (continued)	M-4	Stainless Steel	Treated Water (Includes Steam) (External)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
				Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			H, 103
				Cracking due to SCC	Water Chemistry and Reactor Vessel and Internals Structural Integrity	IV.A1.2-e	3.1.1-28	E
Nozzles (Main Steam)	M-1	Low Alloy Steel	Indoor Air (External)	None	None			G, 109, 120
			Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to General Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry	IV.A1.1-a	3.1.1-34	D, 120
			Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.A1.3-a	3.1.1-01		

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Nozzles (Main Steam) (continued)	M-1	Low Alloy Steel with Stainless Steel cladding	Indoor Air (External)	None	None			G, 109, 120
			Treated Water (Includes Steam) (Internal)	Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			H, 120
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.A1.3-a	3.1.1-01	
Nozzles (Feedwater)	M-1	Low Alloy Steel	Indoor Air (External)	None	None			G, 109, 120
			Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to General Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry	IV.A1.1-a	3.1.1-34	D, 120
				Cracking due to Cyclic Loading	Reactor Vessel and Internals Structural Integrity Program	IV.A1.3-b	3.1.1-27	E, 120
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.A1.3-d	3.1.1-01	

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Nozzles (Feedwater) (continued)	M-1	Low Alloy Steel with Stainless Steel cladding	Indoor Air (External)	None	None			G, 109, 120
			Treated Water (Includes Steam) (Internal)	Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			H, 120
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.A1.3-d	3.1.1-01	
Nozzles (Control Rod Drive (CRD) Return Line)	M-1	Low Alloy Steel	Indoor Air (External)	None	None			G, 109, 120
			Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to General Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry	IV.A1.1-a	3.1.1-34	D, 120
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.A1.3-d	3.1.1-01	

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Nozzles (Control Rod Drive (CRD) Return Line) (continued)	M-1	Low Alloy Steel with Stainless Steel cladding	Indoor Air (External)	None	None			G, 109, 120
			Treated Water (Includes Steam) (Internal)	AERMs in NUREG-1801 were not determined - See Notes & Referenced NUREG-1801, Volume 2 Item	None - NUREG-1801 AERM(s) is N/A	IV.A1.3-c	3.1.1-27	I, 120, 126
			Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion		Section XI Inservice Inspection and Water Chemistry			H, 120
			Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.A1.3-d	3.1.1-01		
Nozzles (Recirculation Outlet)	M-1	Low Alloy Steel with Stainless Steel cladding	Indoor Air (External)	None	None			J, 109, 128
			Treated Water (Includes Steam) (Internal)	Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			J, 128
			Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)				

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Nozzles (Recirculation Outlet) (continued)	M-1	Nickel Based Alloys	Indoor Air (External)	None	None			J, 101, 128
			Treated Water (Includes Steam) (Internal)	Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			J, 128
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
Nozzles (Recirculation Inlet)	M-1	Low Alloy Steel with Stainless Steel cladding	Indoor Air (External)	None	None			J, 109
			Treated Water (Includes Steam) (Internal)	Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			J
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Nozzles (Low Pressure Core Spray (LPCS) - Unit 1)	M-1	Low Alloy Steel with Stainless Steel cladding	Indoor Air (External)	None	None			J, 109
			Treated Water (Includes Steam) (Internal)	Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			J
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
Nozzles (Low Pressure Core Spray (LPCS) - Unit 2)	M-1	Low Alloy Steel with Stainless Steel and Nickel-based Alloy Cladding	Indoor Air (External)	None	None			J, 109
			Treated Water (Includes Steam) (Internal)	Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			J
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Nozzles (Shell Flange)	M-1	Nickel Based Alloys	Indoor Air (External)	None	None			J, 101
			Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			J
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
				Cracking due to SCC	Water Chemistry and BWR Stress Corrosion Cracking			J
Nozzles Safe Ends (Low Pressure Core Spray (LPCS))	M-1	Nickel Based Alloys	Indoor Air (External)	None	None			G, 101, 129
			Treated Water (Includes Steam) (Internal)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
				Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			H, 103, 129
				Cracking due to SCC	Water Chemistry and BWR Stress Corrosion Cracking	IV.A1.4-a	3.1.1-29	B, 129

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Nozzles Safe Ends (Low Pressure Core Spray (LPCS)) (continued)	M-1	Stainless Steel	Indoor Air (External)	None	None			G, 101, 129
			Treated Water (Includes Steam) (Internal)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
				Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			H, 103, 129
				Cracking due to SCC	Water Chemistry and BWR Stress Corrosion Cracking	IV.A1.4-a	3.1.1-29	B, 129
	M-8	Nickel Based Alloys	Indoor Air (External)	None	None			G, 101, 129
			Treated Water (Includes Steam) (Internal)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
				Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			H, 103, 129
				Cracking due to SCC	Water Chemistry and BWR Stress Corrosion Cracking	IV.A1.4-a	3.1.1-29	B, 129

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Nozzles Safe Ends (Low Pressure Core Spray (LPCS)) (continued)	M-8	Stainless Steel	Indoor Air (External)	None	None			G, 101, 129
			Treated Water (Includes Steam) (Internal)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
				Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			H, 103, 129
				Cracking due to SCC	Water Chemistry and BWR Stress Corrosion Cracking	IV.A1.4-a	3.1.1-29	B, 129

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Nozzles Safe Ends (CRD Return Line)	M-1	Stainless Steel	Indoor Air (External)	None	None			G, 101
			Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			H, 103
			Cracking due to SCC	Water Chemistry and BWR Stress Corrosion Cracking	IV.A1.4-a	3.1.1-29	B	
			Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.A1.4-b	3.1.1-01		
Nozzles Safe Ends (Recirculating Water (Inlet and Outlet))	M-1	Stainless Steel	Indoor Air (External)	None	None			G, 101
			Treated Water (Includes Steam) (Internal)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
			Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			H, 103	
			Cracking due to SCC	Water Chemistry and BWR Stress Corrosion Cracking	IV.A1.4-a	3.1.1-29	B	

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Nozzles Safe Ends (Feedwater - Unit 1)	M-1	Carbon Steel	Indoor Air (External)	None	None			J, 109, 130
			Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to General Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			H, 113, 130
			Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)				
			Loss of Material due to FAC	Flow-Accelerated Corrosion	IV.C1.1-c	3.1.1-25	D, 130	
		Nickel Based Alloys	Indoor Air (External)	None	None			J, 101, 130
			Treated Water (Includes Steam) (Internal)	Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			J, 121, 130
			Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)				

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Nozzles Safe Ends (Feedwater - Unit 2)	M-1	Carbon Steel	Indoor Air (External)	None	None			J, 109
			Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to General Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			H, 113
			Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)				
			Loss of Material due to FAC	Flow-Accelerated Corrosion	IV.C1.1-c	3.1.1-25	D	
Nozzles Safe Ends (Standby Liquid Control)	M-1	Stainless Steel	Indoor Air (External)	None	None			J, 101
			Treated Water (Includes Steam) (Internal)	Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			J
			Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)				

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Nozzles Safe Ends (Instrumentation)	M-1	Stainless Steel	Indoor Air (External)	None	None			J, 101
			Treated Water (Includes Steam) (Internal)	Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			J
			Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)				
Penetrations (CRD Stub Tubes)	M-1	Nickel Based Alloys	Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel Internals Structural Integrity			H, 103
			Cracking due to Cyclic Loading	Reactor Vessel Internals Structural Integrity	IV.A1.5-a	3.1.1-30	E	
			Cracking due to SCC	Water Chemistry and Reactor Vessel Internals Structural Integrity	IV.A1.5-a	3.1.1-30	E	
			Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.A1.5-b	3.1.1-01		

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Penetrations (Instrumentation)	M-1	Low Alloy Steel with Stainless Steel cladding	Indoor Air (External)	None	None			G, 109, 128
			Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel Internals Structural Integrity			H, 103, 128
				Cracking due to Cyclic Loading	Reactor Vessel Internals Structural Integrity	IV.A1.5-a	3.1.1-30	E, 128
				Cracking due to SCC	Water Chemistry and Reactor Vessel Internals Structural Integrity	IV.A1.5-a	3.1.1-30	E, 128
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.A1.5-b	3.1.1-01	

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Penetrations (Instrumentation) (continued)	M-1	Nickel Based Alloys	Indoor Air (External)	None	None			G, 101, 128
			Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel Internals Structural Integrity			H, 103, 128
				Cracking due to Cyclic Loading	Reactor Vessel Internals Structural Integrity	IV.A1.5-a	3.1.1-30	E, 128
				Cracking due to SCC	Water Chemistry and Reactor Vessel Internals Structural Integrity	IV.A1.5-a	3.1.1-30	E, 128
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.A1.5-b	3.1.1-01	

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Penetrations (Jet Pump Instrument)	M-1	Low Alloy Steel with Stainless Steel cladding	Indoor Air (External)	None	None			G, 109
			Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			H, 103, 128
				Cracking due to Cyclic Loading	Reactor Vessel Internals Structural Integrity	IV.A1.5-a	3.1.1-30	E, 128
				Cracking due to SCC	Water Chemistry and Reactor Vessel and Internals Structural Integrity	IV.A1.5-a	3.1.1-30	E, 128
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.A1.5-b	3.1.1-01	

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

<b>Component Commodity</b>	<b>Intended Function</b>	<b>Material</b>	<b>Environment</b>	<b>Aging Effect Requiring Management</b>	<b>Aging Management Program</b>	<b>NUREG-1801 Volume 2 Item</b>	<b>Table 1 Item</b>	<b>Notes</b>
Penetrations (Jet Pump Instrument) (continued)	M-1	Nickel Based Alloys	Indoor Air (External)	None	None			G, 101
			Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			H, 103, 128
				Cracking due to Cyclic Loading	Reactor Vessel Internals Structural Integrity	IV.A1.5-a	3.1.1-30	E, 128
				Cracking due to SCC	Water Chemistry and Reactor Vessel and Internals Structural Integrity	IV.A1.5-a	3.1.1-30	E, 128
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.A1.5-b	3.1.1-01	

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Penetrations (Standby Liquid Control)	M-1	Low Alloy Steel with Stainless Steel cladding	Indoor Air (External)	None	None			G, 109
			Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			H, 103, 128
				Cracking due to Cyclic Loading	Reactor Vessel Internals Structural Integrity	IV.A1.5-a	3.1.1-30	E, 128
				Cracking due to SCC	Water Chemistry and Reactor Vessel and Internals Structural Integrity	IV.A1.5-a	3.1.1-30	E, 128
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.A1.5-b	3.1.1-01	

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Penetrations (Standby Liquid Control) (continued)	M-1	Nickel Based Alloys	Indoor Air (External)	None	None			G, 101
			Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			H, 103, 128
				Cracking due to Cyclic Loading	Reactor Vessel Internals Structural Integrity	IV.A1.5-a	3.1.1-30	E, 128
				Cracking due to SCC	Water Chemistry and Reactor Vessel and Internals Structural Integrity	IV.A1.5-a	3.1.1-30	E, 128
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.A1.5-b	3.1.1-01	

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Penetrations (Flux Monitor)	M-1	Stainless Steel	Indoor Air (External)	None	None			G, 101
			Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			H, 103
				Cracking due to Cyclic Loading	Reactor Vessel Internals Structural Integrity	IV.A1.5-a	3.1.1-30	E
				Cracking due to SCC	Water Chemistry and Reactor Vessel and Internals Structural Integrity	IV.A1.5-a	3.1.1-30	E
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.A1.5-b	3.1.1-01	

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Penetrations (Drain Line)	M-1	Low Alloy Steel	Indoor Air (External)	None	None			G, 109
			Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to General Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry	IV.A1.1-a	3.1.1-34	D
			Cracking due to Cyclic Loading	Cracking due to Cyclic Loading	Reactor Vessel Internals Structural Integrity			F
			Cracking due to Thermal Fatigue	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.A1.5-b	3.1.1-01	

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Reactor Vessel (Boiling Water Reactor) (Bottom Head)	M-1	Low Alloy Steel with Stainless Steel cladding	Indoor Air (External)	None	None			G, 109
			Treated Water (Includes Steam) (Internal)	Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			H
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.A1.6-a	3.1.1-01	
	M-4	Low Alloy Steel with Stainless Steel cladding	Indoor Air (External)	None	None			G, 109
			Treated Water (Includes Steam) (Internal)	Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			H
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.A1.6-a	3.1.1-01	

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Reactor Vessel (Boiling Water Reactor) (Support Skirt and Attachment Welds)	M-1	Low Alloy Steel	Indoor Air (External)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.A1.7-a	3.1.1-01	135
	M-4	Low Alloy Steel	Indoor Air (External)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.A1.7-a	3.1.1-01	135
Thermal Sleeves (Feedwater – Unit 1)	M-4	Nickel Based Alloys	Treated Water (Includes Steam) (Internal)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
				Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			J
				Cracking due to SCC	Water Chemistry and BWR Stress Corrosion Cracking	IV.A1.4-a	3.1.1-29	D
Thermal Sleeves (Feedwater – Unit 2)	M-4	Stainless Steel	Treated Water (Includes Steam) (Internal)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
				Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			J
				Cracking due to SCC	Water Chemistry and BWR Stress Corrosion Cracking	IV.A1.4-a	3.1.1-29	D

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Thermal Sleeves (Low Pressure Core Spray (LPCS))	M-4	Stainless Steel	Treated Water (Includes Steam) (Internal)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
				Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			J
				Cracking due to SCC	Water Chemistry and BWR Stress Corrosion Cracking	IV.A1.4-a	3.1.1-29	D
Core Shroud and Core Plate (Core Shroud (Upper, Central, Lower))	M-1	Stainless Steel	Treated Water (Includes Steam) (External)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
				Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			H, 103
				Cracking due to IASCC Cracking due to SCC	Water Chemistry and Reactor Vessel and Internals Structural Integrity	IV.B1.1-a	3.1.1-31	E

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Core Shroud and Core Plate (Core Shroud (Upper, Central, Lower)) (continued)	M-4	Stainless Steel	Treated Water (Includes Steam) (External)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
				Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			H, 103
				Cracking due to IASCC Cracking due to SCC	Water Chemistry and Reactor Vessel and Internals Structural Integrity	IV.B1.1-a	3.1.1-31	E
Core Shroud and Core Plate (Core Plate)	M-4	Stainless Steel	Treated Water (Includes Steam) (External)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			H, 103
				Cracking due to IASCC Cracking due to SCC	Water Chemistry and Reactor Vessel and Internals Structural Integrity	IV.B1.1-b	3.1.1-31	E
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.B1.1-c	3.1.1-01	

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Core Shroud and Core Plate (Core Plate Bolts)	M-4	Stainless Steel	Treated Water (Includes Steam) (External)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
				Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			H, 103
				Cracking due to SCC	Water Chemistry and Reactor Vessel and Internals Structural Integrity	IV.B1.1-b	3.1.1-31	E
Core Shroud and Core Plate (Access Hole Cover)	M-1	Nickel Based Alloys	Treated Water (Includes Steam) (External)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
				Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			H, 122, 103
				Cracking due to SCC	Water Chemistry and Reactor Vessel and Internals Structural Integrity	IV.B1.1-d	3.1.1-32	E, 122

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Core Shroud and Core Plate (Access Hole Cover) (continued)	M-4	Nickel Based Alloys	Treated Water (Includes Steam) (External)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
				Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			H, 122, 103
				Cracking due to SCC	Water Chemistry and Reactor Vessel and Internals Structural Integrity	IV.B1.1-d	3.1.1-32	E, 122
Core Shroud and Core Plate (Shroud Support Structure)	M-4	Nickel Based Alloys	Treated Water (Includes Steam) (External)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
				Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			H, 103
				Cracking due to SCC	Water Chemistry and Reactor Vessel and Internals Structural Integrity	IV.B1.1-f	3.1.1-31	E

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

<b>Component Commodity</b>	<b>Intended Function</b>	<b>Material</b>	<b>Environment</b>	<b>Aging Effect Requiring Management</b>	<b>Aging Management Program</b>	<b>NUREG-1801 Volume 2 Item</b>	<b>Table 1 Item</b>	<b>Notes</b>
Core Shroud and Core Plate (Core Shroud Repair Hardware)	M-4	Stainless Steel	Treated Water (Includes Steam) (External)	Loss of Pre-load due to Stress Relaxation	<a href="#">Reactor Vessel and Internals Structural Integrity</a>			J, 123
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
				Cracking due to IASCC Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	<a href="#">Water Chemistry and Reactor Vessel and Internals Structural Integrity</a>			J, 123

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Core Shroud and Core Plate (Core Plate Plugs)	M-1	Nickel Based Alloys	Treated Water (Includes Steam) (External)	Loss of Pre-load due to Stress Relaxation	<a href="#">Reactor Vessel and Internals Structural Integrity Program</a>			J, 124
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
				Cracking due to IASCC Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	<a href="#">Water Chemistry and Reactor Vessel and Internals Structural Integrity</a>			J, 124
		Stainless Steel	Treated Water (Includes Steam) (External)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
				Cracking due to SCC Cracking due to IASCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	<a href="#">Water Chemistry and Reactor Vessel and Internals Structural Integrity</a>			J, 124

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Core Shroud and Core Plate (Core Plate Plugs) (continued)	M-4	Nickel Based Alloys	Treated Water (Includes Steam) (External)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
				Cracking due to IASCC Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			J, 124
		Stainless Steel	Treated Water (Includes Steam) (External)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
				Cracking due to SCC Cracking due to IASCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			J, 124

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Reactor Vessel Internals (Boiling Water Reactor) (Top Guide)	M-4	Stainless Steel	Treated Water (Includes Steam) (External)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			H, 103
				Cracking due to IASCC Cracking due to SCC	Water Chemistry and Reactor Vessel and Internals Structural Integrity	IV.B1.2-a	3.1.1-31	E
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.B1.2-b	3.1.1-01	
Core Spray Lines and Spargers (Core Spray Lines (Headers))	M-1	Stainless Steel	Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			H, 103
				Cracking due to SCC	Water Chemistry and Reactor Vessel and Internals Structural Integrity	IV.B1.3-a	3.1.1-31	E
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.B1.3-b	3.1.1-01	

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Core Spray Lines and Spargers (Core Spray Lines (Headers)) (continued)	M-4	Stainless Steel	Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			H, 103
				Cracking due to SCC	Water Chemistry and Reactor Vessel and Internals Structural Integrity	IV.B1.3-a	3.1.1-31	E
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.B1.3-b	3.1.1-01	
	M-8	Stainless Steel	Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			H, 103
				Cracking due to SCC	Water Chemistry and Reactor Vessel and Internals Structural Integrity	IV.B1.3-a	3.1.1-31	E
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.B1.3-b	3.1.1-01	

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Core Spray Lines and Spargers (Spray Rings)	M-1	Stainless Steel	Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			H, 103
				Cracking due to SCC	Water Chemistry and Reactor Vessel and Internals Structural Integrity	IV.B1.3-a	3.1.1-31	E
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.B1.3-b	3.1.1-01	
	M-4	Stainless Steel	Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			H, 103
				Cracking due to SCC	Water Chemistry and Reactor Vessel and Internals Structural Integrity	IV.B1.3-a	3.1.1-31	E
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.B1.3-b	3.1.1-01	

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Core Spray Lines and Spargers (Spray Rings) (continued)	M-8	Stainless Steel	Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			H, 103
				Cracking due to SCC	Water Chemistry and Reactor Vessel and Internals Structural Integrity	IV.B1.3-a	3.1.1-31	E
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.B1.3-b	3.1.1-01	
Core Spray Lines and Spargers (Spray Nozzles)	M-8	Stainless Steel	Treated Water (Includes Steam) (Internal)	Flow Blockage due to Fouling Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			H, 103, 114
				Cracking due to SCC	Water Chemistry and Reactor Vessel and Internals Structural Integrity	IV.B1.3-a	3.1.1-31	E
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.B1.3-b	3.1.1-01	

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Core Spray Lines and Spargers (Thermal Sleeves)	M-1	Stainless Steel	Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			H, 103
				Cracking due to SCC	Water Chemistry and Reactor Vessel and Internals Structural Integrity	IV.B1.3-a	3.1.1-31	E
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.B1.3-b	3.1.1-01	
	M-4	Stainless Steel	Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			H, 103
				Cracking due to SCC	Water Chemistry and Reactor Vessel and Internals Structural Integrity	IV.B1.3-a	3.1.1-31	E
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.B1.3-b	3.1.1-01	

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Core Spray Lines and Spargers (Thermal Sleeves) (continued)	M-8	Stainless Steel	Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	<a href="#">Water Chemistry and Reactor Vessel and Internals Structural Integrity</a>			H, 103
				Cracking due to SCC	<a href="#">Water Chemistry and Reactor Vessel and Internals Structural Integrity</a>	IV.B1.3-a	3.1.1-31	E
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.B1.3-b	3.1.1-01	
Jet Pump Assemblies (Thermal Sleeve)	M-4	Nickel Based Alloys	Treated Water (Includes Steam) (External)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	<a href="#">Water Chemistry and Reactor Vessel and Internals Structural Integrity</a>			H, 103
				Cracking due to SCC	<a href="#">Water Chemistry and Reactor Vessel and Internals Structural Integrity</a>	IV.B1.4-a	3.1.1-31	E
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.B1.4-b	3.1.1-01	

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Jet Pump Assemblies (Thermal Sleeve) (continued)	M-4	Stainless Steel	Treated Water (Includes Steam) (External)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			H, 103
				Cracking due to SCC	Water Chemistry and Reactor Vessel and Internals Structural Integrity	IV.B1.4-a	3.1.1-31	E
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.B1.4-b	3.1.1-01	
Jet Pump Assemblies (Inlet Header)	M-4	Stainless Steel	Treated Water (Includes Steam) (External)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			H, 103
				Cracking due to SCC	Water Chemistry and Reactor Vessel and Internals Structural Integrity	IV.B1.4-a	3.1.1-31	E
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.B1.4-b	3.1.1-01	

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Jet Pump Assemblies (Riser Brace Arm)	M-4	Stainless Steel	Treated Water (Includes Steam) (External)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	<a href="#">Water Chemistry and Reactor Vessel and Internals Structural Integrity</a>			H, 103
				Cracking due to SCC	<a href="#">Water Chemistry and Reactor Vessel and Internals Structural Integrity</a>	IV.B1.4-a	3.1.1-31	E
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.B1.4-b	3.1.1-01	
Jet Pump Assemblies (Holddown Beams)	M-4	Nickel Based Alloys	Treated Water (Includes Steam) (External)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	<a href="#">Water Chemistry and Reactor Vessel and Internals Structural Integrity</a>			H, 103
				Cracking due to SCC	<a href="#">Water Chemistry and Reactor Vessel and Internals Structural Integrity</a>	IV.B1.4-a	3.1.1-31	E
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.B1.4-b	3.1.1-01	

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Jet Pump Assemblies (Inlet Elbow)	M-4	Stainless Steel	Treated Water (Includes Steam) (External)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			H, 103
				Cracking due to SCC	Water Chemistry and Reactor Vessel and Internals Structural Integrity	IV.B1.4-a	3.1.1-31	E
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.B1.4-b	3.1.1-01	
Jet Pump Assemblies (Mixing Assembly)	M-4	Stainless Steel	Treated Water (Includes Steam) (External)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			H, 103
				Cracking due to SCC	Water Chemistry and Reactor Vessel and Internals Structural Integrity	IV.B1.4-a	3.1.1-31	E
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.B1.4-b	3.1.1-01	

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Jet Pump Assemblies (Diffuser)	M-4	Nickel Based Alloys	Treated Water (Includes Steam) (External)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	<a href="#">Water Chemistry and Reactor Vessel and Internals Structural Integrity</a>			H, 103
				Cracking due to SCC	<a href="#">Water Chemistry and Reactor Vessel and Internals Structural Integrity</a>	IV.B1.4-a	3.1.1-31	E
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.B1.4-b	3.1.1-01	
		Stainless Steel	Treated Water (Includes Steam) (External)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	<a href="#">Water Chemistry and Reactor Vessel and Internals Structural Integrity</a>			H, 103
				Cracking due to SCC	<a href="#">Water Chemistry and Reactor Vessel and Internals Structural Integrity</a>	IV.B1.4-a	3.1.1-31	E
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.B1.4-b	3.1.1-01	

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Jet Pump Assemblies (Castings)	M-4	Cast Austenitic Stainless Steel	Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			H, 103
				Cracking due to IASCC Cracking due to SCC	Water Chemistry and Reactor Vessel and Internals Structural Integrity	IV.B1.4-a	3.1.1-31	E
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.B1.4-b	3.1.1-01	
				Reduction of Fracture Toughness due to Neutron Irradiation Embrittlement Reduction of Fracture Toughness due to Thermal Embrittlement	Reactor Vessel and Internals Structural Integrity	IV.B1.4-c	3.1.1-33	E

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Jet Pump Assemblies (Jet Pump Sensing Line)	M-4	Stainless Steel	Treated Water (Includes Steam) (Internal)	AERMs in NUREG-1801 were not determined - See Notes & Referenced NUREG-1801, Volume 2 Item	None - NUREG-1801 AERM(s) is N/A	IV.B1.4-d	3.1.1-08	I, 125
			Treated Water (Includes Steam) (External)	Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Not Applicable			125
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
Jet Pump Assemblies (Jet Pump Holddown Beam Keeper, Lock Plate, and Bolt)	M-4	Stainless Steel	Treated Water (Includes Steam) (External)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
				Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			J

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

<b>Component Commodity</b>	<b>Intended Function</b>	<b>Material</b>	<b>Environment</b>	<b>Aging Effect Requiring Management</b>	<b>Aging Management Program</b>	<b>NUREG-1801 Volume 2 Item</b>	<b>Table 1 Item</b>	<b>Notes</b>
Fuel Supports and Control Rod Drive (CRD) Assemblies (Orificed Fuel Support)	M-4	Cast Austenitic Stainless Steel	Treated Water (Includes Steam) (Internal)	Cracking due to IASCC Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			H, 103
				Reduction of Fracture Toughness due to Neutron Irradiation Embrittlement Reduction of Fracture Toughness due to Thermal Embrittlement	Reactor Vessel and Internals Structural Integrity	IV.B1.5-a	3.1.1-33	E
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.B1.5-b	3.1.1-01	

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Fuel Supports and Control Rod Drive (CRD) Assemblies (CRD Housing)	M-1	Stainless Steel	Treated Water (Includes Steam) (External)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
				Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			H, 103
				Cracking due to SCC	Water Chemistry and Reactor Vessel and Internals Structural Integrity	IV.B1.5-c	3.1.1-31	E
	M-4	Stainless Steel	Treated Water (Includes Steam) (External)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
				Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			H, 103
				Cracking due to SCC	Water Chemistry and Reactor Vessel and Internals Structural Integrity	IV.B1.5-c	3.1.1-31	E

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes	
Instrumentation (Intermediate Range Monitor (IRM) Dry Tubes)	M-1	Stainless Steel	Dry Air / Gas (Internal)	None	None			G, 104	
			Indoor Air (Internal)	None	None			G, 101	
			Treated Water (Includes Steam) (External)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity				H, 103
				Cracking due to IASCC Cracking due to SCC	Water Chemistry and Reactor Vessel and Internals Structural Integrity	IV.B1.6-a	3.1.1-31	E	
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.B1.6-b	3.1.1-01		

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes	
Instrumentation (Source Range Monitor (SRM) Dry Tubes)	M-1	Stainless Steel	Dry Air / Gas (Internal)	None	None			G, 104	
			Indoor Air (Internal)	None	None			G, 101	
			Treated Water (Includes Steam) (External)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity				H, 103
				Cracking due to IASCC Cracking due to SCC	Water Chemistry and Reactor Vessel and Internals Structural Integrity	IV.B1.6-a	3.1.1-31	E	
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.B1.6-b	3.1.1-01		
Reactor Vessel Internals (Boiling Water Reactor - Non-safety Related) (Steam Dryer)	M-4	Stainless Steel	Treated Water (Includes Steam) (External)	Cracking due to Cyclic Loading	Reactor Vessel and Internals Structural Integrity Program			J, 117	
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)				
				Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			J	

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Reactor Vessel Internals (Boiling Water Reactor - Non-safety Related) (Shroud Head and Separators)	M-4	Stainless Steel	Treated Water (Includes Steam) (External)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
				Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			J
Reactor Vessel Internals (Boiling Water Reactor - Non-safety Related) (Feedwater Spargers)	M-4	Stainless Steel	Treated Water (Includes Steam) (External)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
				Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			J
Reactor Vessel Internals (Boiling Water Reactor - Non-safety Related) (Surveillance Capsule Holder)	M-4	Stainless Steel	Treated Water (Includes Steam) (External)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
				Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			J

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Piping and Fittings (Main Steam)	M-1	Carbon Steel	Indoor Air (External)	None	None			G, 109
			Treated Water (Includes Steam) (Internal)	AERMs in NUREG-1801 were not determined - See Notes & Referenced NUREG-1801, Volume 2 Item	None - NUREG-1801 AERM(s) is N/A	IV.C1.1-a	3.1.1-25	I, 115
				Loss of Material due to Crevice Corrosion Loss of Material due to General Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			H, 113
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.C1.1-b	3.1.1-01	
	M-3	Cast Austenitic Stainless Steel	Treated Water (Includes Steam) (Internal)	Reduction of Fracture Toughness due to Thermal Embrittlement	One-Time Inspection			J, 116
				Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			J, 116
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Piping and Fittings (Feedwater)	M-1	Carbon Steel	Indoor Air (External)	None	None			G, 109
			Treated Water (Includes Steam) (Internal)	Loss of Material due to FAC	Flow-Accelerated Corrosion	IV.C1.1-c	3.1.1-25	B
				Loss of Material due to Crevice Corrosion Loss of Material due to General Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			H, 113
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.C1.1-d	3.1.1-01	
		Stainless Steel	Indoor Air (External)	None	None			G, 101
			Treated Water (Includes Steam) (Internal)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
				Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			F, 119

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Piping and Fittings (Small Bore Piping Less than NPS 4)	M-1	Stainless Steel	Indoor Air (External)	None	None			G, 101
			Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			H, 103, 118
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.C1.1-h	3.1.1-01	
				Cracking due to SCC	Section XI Inservice Inspection and Water Chemistry	IV.C1.1-i	3.1.1-07	E, 118
				Cracking due to Thermal and Mechanical Loading	Section XI Inservice Inspection and Water Chemistry	IV.C1.1-i	3.1.1-07	I, 118
	M-3	Stainless Steel	Indoor Air (External)	None	None			G, 101
			Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			H, 103, 118
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.C1.1-h	3.1.1-01	
				Cracking due to SCC	Section XI Inservice Inspection and Water Chemistry	IV.C1.1-i	3.1.1-07	E, 118
				Cracking due to	Section XI Inservice	IV.C1.1-i	3.1.1-07	I, 118

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
				Thermal and Mechanical Loading	Inspection and Water Chemistry			

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Piping and Fittings (Reactor Vessel Head Vent Components)	M-1	Carbon Steel	Indoor Air (External)	None	None			J, 109
			Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to General Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			J
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
				Loss of Material due to FAC	Flow-Accelerated Corrosion	IV.C1.1-a	3.1.1-25	D

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes	
Valves (Body)	M-1	Carbon Steel	Indoor Air (External)	None	None			G, 109	
			Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to General Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			H, 113	
				Loss of Material due to FAC	Flow-Accelerated Corrosion	IV.C1.3-a	3.1.1-25	B	
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.C1.3-d	3.1.1-01		
		Stainless Steel	Indoor Air (External)	None	None				G, 101
			Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry				H, 103
				Cracking due to SCC	Water Chemistry and BWR Stress Corrosion Cracking	IV.C1.3-c	3.1.1-29	B	
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.C1.3-d	3.1.1-01		

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Valves (Body) (continued)	M-7	Carbon Steel	Indoor Air (External)	None	None			G, 109
			Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to General Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			H, 113
			Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.C1.3-d	3.1.1-01		
Non-Reactor Coolant Pressure Boundary (Boiling Water Reactor) (Piping and Fittings)	M-1	Carbon Steel	Indoor Air (External)	Loss of Material due to General Corrosion	Systems Monitoring	VII.I.1-b	3.3.1-05	E
			Indoor Air (Internal)	Loss of Material due to General Corrosion	One-Time Inspection			J, 127
			Treated Water (External)	Loss of Material due to Crevice Corrosion Loss of Material due to Galvanic Corrosion Loss of Material due to General Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and One-Time Inspection			J
			Treated Water (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to Galvanic Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and One-Time Inspection			J

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Non-Reactor Coolant Pressure Boundary (Boiling Water Reactor) (Piping and Fittings) (continued)	M-1	Stainless Steel	Indoor Air (External)	None	None			J, 101
			Treated Water (External)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and One-Time Inspection		J	
			Treated Water (Includes Steam) (Internal)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
				Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and One-Time Inspection		J	
	M-7	Stainless Steel	Indoor Air (External)	None	None			J, 101
			Treated Water (Includes Steam) (Internal)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
		Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion		Water Chemistry and One-Time Inspection		J		

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes	
Non-Reactor Coolant Pressure Boundary (Boiling Water Reactor) (Valves)	M-1	Carbon Steel	Indoor Air (Internal)	Loss of Material due to General Corrosion	One-Time Inspection			J, 127	
			Treated Water (Includes Steam) (Internal)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)				
				Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and One-Time Inspection			J	
		Stainless Steel	Indoor Air (External)	None	None				J, 101
			Treated Water (Includes Steam) (Internal)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)				
				Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and One-Time Inspection			J	
	M-7	Stainless Steel	Indoor Air (External)	None	None				J, 101
			Treated Water (Includes Steam) (Internal)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)				
				Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and One-Time Inspection			J	

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Non-Reactor Coolant Pressure Boundary (Boiling Water Reactor) (Piping Specialties)	M-1	Stainless Steel	Indoor Air (External)	None	None			J, 101
			Treated Water (Includes Steam) (Internal)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
				Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and One-Time Inspection			J
	M-3	Stainless Steel	Indoor Air (External)	None	None			J, 101
			Treated Water (Includes Steam) (Internal)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
				Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and One-Time Inspection			J

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Non-Reactor Coolant Pressure Boundary (Boiling Water Reactor) (Piping Specialties) (continued)	M-4	Stainless Steel	Indoor Air (External)	None	None			J, 101
			Treated Water (Includes Steam) (Internal)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
			Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and One-Time Inspection			J	
Piping (Piping and Fittings)	M-1	Stainless Steel	Dry Air / Gas (Internal)	None	None			G, 105
			Indoor Air (External)	None	None			J, 101
Valves (including check valves and containment isolation) (Body and Bonnet)	M-1	Aluminum Alloys	Dry Air / Gas (Internal)	None	None			G, 105
			Indoor Air (External)	None	None			J, 106
		Carbon Steel	Dry Air / Gas (Internal)	None	None			G, 105
		Copper Alloys	Dry Air / Gas (Internal)	None	None			G, 105
			Indoor Air (External)	None	None			J, 106

**TABLE 3.1.2-1 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION - REACTOR VESSEL AND INTERNALS**

<b>Component Commodity</b>	<b>Intended Function</b>	<b>Material</b>	<b>Environment</b>	<b>Aging Effect Requiring Management</b>	<b>Aging Management Program</b>	<b>NUREG-1801 Volume 2 Item</b>	<b>Table 1 Item</b>	<b>Notes</b>
Air Receiver (Shell and Access Cover)	M-1	Stainless Steel	Dry Air / Gas (Internal)	None	None			G, 105
			Indoor Air (External)	None	None			J, 101
Carbon Steel Components (External Surfaces)	M-1	Carbon Steel	Indoor Air (External)	Loss of Material due to General Corrosion	Systems Monitoring	VII.I.1-b	3.3.1-05	E

**TABLE 3.1.2-2 REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION – NEUTRON MONITORING SYSTEM (NMS)**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Instrumentation (Incore Neutron Flux Monitor Guide Tubes)	M-1	Stainless Steel	Dry Air / Gas (Internal)	None	None			J, 104
			Treated Water (Includes Steam) (External)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and Reactor Vessel and Internals Structural Integrity			H, 103
				Cracking due to SCC Cracking due to IASCC	Water Chemistry and Reactor Vessel and Internals Structural Integrity	IV.B1.6-a	3.1.1-31	E, 102
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.B1.6-b	3.1.1-01	
Non-Reactor Coolant Pressure Boundary (Boiling Water Reactor) (Piping and Fittings)	M-1	Stainless Steel	Dry Air / Gas (Internal)	None	None			J, 104
			Indoor Air (External)	None	None			J, 101
			Indoor Air (Internal)	None	None			J, 101
Non-Reactor Coolant Pressure Boundary (Boiling Water Reactor) (Valves)	M-1	Stainless Steel	Dry Air / Gas (Internal)	None	None			J, 104
			Indoor Air (External)	None	None			J, 101

**TABLE 3.1.2-2 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION – NEUTRON MONITORING SYSTEM (NMS)**

<b>Component Commodity</b>	<b>Intended Function</b>	<b>Material</b>	<b>Environment</b>	<b>Aging Effect Requiring Management</b>	<b>Aging Management Program</b>	<b>NUREG-1801 Volume 2 Item</b>	<b>Table 1 Item</b>	<b>Notes</b>
Non-Reactor Coolant Pressure Boundary (Boiling Water Reactor) (Piping Specialties)	M-1	Stainless Steel	Dry Air / Gas (Internal)	None	None			J, 104
			Indoor Air (External)	None	None			J, 101

**TABLE 3.1.2-3 REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION – REACTOR MANUAL CONTROL SYSTEM**

<b>Component Commodity</b>	<b>Intended Function</b>	<b>Material</b>	<b>Environment</b>	<b>Aging Effect Requiring Management</b>	<b>Aging Management Program</b>	<b>NUREG-1801 Volume 2 Item</b>	<b>Table 1 Item</b>	<b>Notes</b>
Non-Reactor Coolant Pressure Boundary (Boiling Water Reactor) (Piping and Fittings)	M-1	Stainless Steel	Indoor Air (External)	None	None			J, 101
			Treated Water (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and One-Time Inspection			J

**TABLE 3.1.2-4 REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION – CONTROL ROD DRIVE (CRD) HYDRAULIC SYSTEM**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Non-Reactor Coolant Pressure Boundary (Boiling Water Reactor) (Piping and Fittings)	M-1	Carbon Steel	Indoor Air (External)	Loss of Material due to General Corrosion	Systems Monitoring	VII.I.1-b	3.3.1-05	E
			Treated Water (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to Galvanic Corrosion Loss of Material due to General Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and One-Time Inspection			J
		Copper Alloys	Dry Air / Gas (Internal)	None	None			J, 105
			Indoor Air (External)	None	None			J, 106
		Stainless Steel	Indoor Air (External)	None	None			J, 101
			Treated Water (Internal)	Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and One-Time Inspection			J

**TABLE 3.1.2-4 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION – CONTROL ROD DRIVE (CRD) HYDRAULIC SYSTEM**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Non-Reactor Coolant Pressure Boundary (Boiling Water Reactor) (Piping and Fittings) (continued)	M-4	Carbon Steel	Indoor Air (External)	Loss of Material due to General Corrosion	Systems Monitoring	VII.I.1-b	3.3.1-05	E
			Treated Water (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to Galvanic Corrosion Loss of Material due to General Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and One-Time Inspection		J	
Non-Reactor Coolant Pressure Boundary (Boiling Water Reactor) (Valves)	M-1	Carbon Steel	Indoor Air (External)	Loss of Material due to General Corrosion	Systems Monitoring	VII.I.1-b	3.3.1-05	E
			Treated Water (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to Galvanic Corrosion Loss of Material due to General Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and One-Time Inspection		J	
		Stainless Steel	Indoor Air (External)	None	None			J, 101
			Treated Water (Internal)	Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and One-Time Inspection		J	

**TABLE 3.1.2-4 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION – CONTROL ROD DRIVE (CRD) HYDRAULIC SYSTEM**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes	
Non-Reactor Coolant Pressure Boundary (Boiling Water Reactor) (Piping Specialties)	M-1	Carbon Steel	Indoor Air (External)	Loss of Material due to General Corrosion	Systems Monitoring	VII.I.1-b	3.3.1-05	E	
			Treated Water (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to Galvanic Corrosion Loss of Material due to General Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and One-Time Inspection			J	
		Stainless Steel	Indoor Air (External)	None	None				J, 101
			Treated Water (Internal)	Loss of Material due to Erosion	One-Time Inspection			J	
				Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and One-Time Inspection			J	

**TABLE 3.1.2-4 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION – CONTROL ROD DRIVE (CRD) HYDRAULIC SYSTEM**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Hydraulic Control Units (Tanks)	M-1	Carbon Steel	Dry Air / Gas (Internal)	None	None			J, 107
			Indoor Air (External)	Loss of Material due to General Corrosion	Systems Monitoring	VII.I.1-b	3.3.1-05	E
			Treated Water (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to General Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and One-Time Inspection			J
		Stainless Steel	Dry Air / Gas (Internal)	None	None			J, 104
			Indoor Air (External)	None	None			J, 101
			Treated Water (Internal)	Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and One-Time Inspection			J
Hydraulic Control Units (Rupture Disks)	M-1	Stainless Steel	Dry Air / Gas (Internal)	None	None			J, 104
			Indoor Air (External)	None	None			J, 101
Hydraulic Control Units (Nitrogen Fittings)	M-1	Stainless Steel	Dry Air / Gas (Internal)	None	None			J, 104
			Indoor Air (External)	None	None			J, 101

**TABLE 3.1.2-4 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION – CONTROL ROD DRIVE (CRD) HYDRAULIC SYSTEM**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Hydraulic Control Units (Filters)	M-1	Stainless Steel	Indoor Air (External)	None	None			J, 101
			Treated Water (Internal)	Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and One-Time Inspection		J	
	M-2	Stainless Steel	Indoor Air (External)	None	None			J, 101
			Treated Water (Internal)	Cracking due to SCC Flow Blockage due to Fouling Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and One-Time Inspection		J, 114	

**TABLE 3.1.2-4 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION – CONTROL ROD DRIVE (CRD) HYDRAULIC SYSTEM**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Hydraulic Control Units (Miscellaneous Piping)	M-1	Stainless Steel	Indoor Air (External)	None	None			J, 101
			Treated Water (Internal)	Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and One-Time Inspection		J	
	M-4	Stainless Steel	Indoor Air (External)	None	None			J, 101
			Treated Water (Internal)	Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and One-Time Inspection		J	
CRD Pumps (CRD Pump Casing)	M-1	Carbon Steel	Indoor Air (External)	Loss of Material due to General Corrosion	Systems Monitoring	VII.I.1-b	3.3.1-05	E
			Treated Water (Internal)	Loss of Material due to Erosion	One-Time Inspection			J, 131
				Loss of Material due to Crevice Corrosion Loss of Material due to General Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and One-Time Inspection			J, 131
		Nickel Based Alloys	Treated Water (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and One-Time Inspection			J, 131

**TABLE 3.1.2-4 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION – CONTROL ROD DRIVE (CRD) HYDRAULIC SYSTEM**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
CRD Pumps (CRD Pump Gearbox Coolers)	M-1	Carbon Steel	Indoor Air (External)	Loss of Material due to General Corrosion	Systems Monitoring	VII.I.1-b	3.3.1-05	E
			Lube Oil (Internal)	None	None			J, 108
			Treated Water (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to General Corrosion Loss of Material due to Pitting Corrosion	Closed-Cycle Cooling Water System			J
CRD Pumps (CRD Pump Skid Piping and Valves)	M-1	Carbon Steel	Indoor Air (External)	Loss of Material due to General Corrosion	Systems Monitoring	VII.I.1-b	3.3.1-05	E
			Treated Water (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to General Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and One-Time Inspection			J
Piping (Piping and Fittings)	M-4	Copper Alloys	Indoor Air (External)	None	None			J, 106

**TABLE 3.1.2-4 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION – CONTROL ROD DRIVE (CRD) HYDRAULIC SYSTEM**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Valves (including check valves and containment isolation) (Body and Bonnet)	M-1	Copper Alloys	Dry Air / Gas (Internal)	None	None			J, 105
			Indoor Air (External)	None	None			J, 106
		Stainless Steel	Dry Air / Gas (Internal)	None	None			J, 105
			Indoor Air (External)	None	None			J, 101
	M-4	Copper Alloys	Dry Air / Gas (Internal)	None	None			J, 105
			Indoor Air (External)	None	None			J, 106
		Stainless Steel	Dry Air / Gas (Internal)	None	None			J, 105
			Indoor Air (External)	None	None			J, 101

**TABLE 3.1.2-5 REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION – REACTOR COOLANT RECIRCULATION SYSTEM**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes	
Piping and Fittings (Recirculation)	M-1	Cast Austenitic Stainless Steel	Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			H, 103, 132	
				Cracking due to SCC	Water Chemistry and BWR Stress Corrosion Cracking	IV.C1.1-f	3.1.1-29	B, 132	
				Reduction of Fracture Toughness due to Thermal Embrittlement	One-Time Inspection	IV.C1.1-g	3.1.1-24	E, 111, 132	
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.C1.1-h	3.1.1-01		
		Stainless Steel	Indoor Air (External)	None	None				G, 101
				Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			H, 103
					Cracking due to SCC	Water Chemistry and BWR Stress Corrosion Cracking	IV.C1.1-f	3.1.1-29	B
					Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.C1.1-h	3.1.1-01	

**TABLE 3.1.2-5 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION – REACTOR COOLANT RECIRCULATION SYSTEM**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Piping and Fittings (Small Bore Piping Less than NPS 4)	M-1	Carbon Steel	Indoor Air (External)	None	None			G, 109, 134
			Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to Galvanic Corrosion Loss of Material due to General Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			H, 113, 134
				Loss of Material due to FAC	Flow-Accelerated Corrosion	IV.C1.1-a	3.1.1-25	D, 134
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.C1.1-h	3.1.1-01	
				Cracking due to Thermal and Mechanical Loading	Section XI Inservice Inspection and Water Chemistry	IV.C1.1-i	3.1.1-07	I, 118, 134

**TABLE 3.1.2-5 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION – REACTOR COOLANT RECIRCULATION SYSTEM**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Piping and Fittings (Small Bore Piping Less than NPS 4) (continued)	M-1	Stainless Steel	Indoor Air (External)	None	None			G, 101
			Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			H, 103
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.C1.1-h	3.1.1-01	
				Cracking due to SCC	Section XI Inservice Inspection and Water Chemistry	IV.C1.1-i	3.1.1-07	E, 118
				Cracking due to Thermal and Mechanical Loading	Section XI Inservice Inspection and Water Chemistry	IV.C1.1-i	3.1.1-07	I, 118

**TABLE 3.1.2-5 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION – REACTOR COOLANT RECIRCULATION SYSTEM**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes	
Recirculation Pump (Casing)	M-1	Cast Austenitic Stainless Steel	Indoor Air (External)	None	None			G, 101	
			Treated Water (Includes Steam) (Internal)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.C1.2-a	3.1.1-01		
				Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry				H, 103
				Cracking due to SCC	Water Chemistry and BWR Stress Corrosion Cracking	IV.C1.2-b	3.1.1-29	B	
				Reduction of Fracture Toughness due to Thermal Embrittlement	ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD	IV.C1.2-c	3.1.1-23	A, 110	
Recirculation Pump (Cover)	M-1	Stainless Steel	Indoor Air (External)	None	None			G, 101	
			Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry				H, 103
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.C1.2-a	3.1.1-01		
				Cracking due to SCC	Water Chemistry and BWR Stress Corrosion Cracking	IV.C1.2-b	3.1.1-29	D	



**TABLE 3.1.2-5 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION – REACTOR COOLANT RECIRCULATION SYSTEM**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Recirculation Pump (Seal Flange)	M-1	Stainless Steel	Indoor Air (External)	None	None			G, 101
			Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			H, 103
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.C1.2-a	3.1.1-01	
				Cracking due to SCC	Water Chemistry and BWR Stress Corrosion Cracking	IV.C1.2-b	3.1.1-29	D
Recirculation Pump (Closure Bolting)	M-1	Low Alloy Steel	Indoor Air (External)	Loss of Material due to Wear	Bolting Integrity	IV.C1.2-d	3.1.1-26	B
				Loss of Pre-load due to Stress Relaxation	Bolting Integrity	IV.C1.2-e	3.1.1-26	B
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.C1.2-f	3.1.1-01	

**TABLE 3.1.2-5 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION – REACTOR COOLANT RECIRCULATION SYSTEM**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Valves (Body)	M-1	Cast Austenitic Stainless Steel	Indoor Air (External)	None	None			G, 101
			Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			H, 103
				Reduction of Fracture Toughness due to Thermal Embrittlement	ASME Section XI Inservice Inspection, Subsections IWB, IWC, and IWD	IV.C1.3-b	3.1.1-23	A, 110
				Cracking due to SCC	Water Chemistry and BWR Stress Corrosion Cracking	IV.C1.3-c	3.1.1-29	B
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.C1.3-d	3.1.1-01	
		Stainless Steel	Indoor Air (External)	None	None			G, 101
			Treated Water (Includes Steam) (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Section XI Inservice Inspection and Water Chemistry			H, 103
				Cracking due to SCC	Water Chemistry and BWR Stress Corrosion Cracking	IV.C1.3-c	3.1.1-29	B
				Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)	IV.C1.3-d	3.1.1-01	



**TABLE 3.1.2-5 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION – REACTOR COOLANT RECIRCULATION SYSTEM**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes	
Non-Reactor Coolant Pressure Boundary (Boiling Water Reactor) (Piping and Fittings)	M-1	Carbon Steel	Indoor Air (External)	None	None	VII.I.1-b	3.3.1-05	I, 109	
			Treated Water (Includes Steam) (Internal)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)				
				Loss of Material due to Crevice Corrosion Loss of Material due to General Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and One-Time Inspection			J	
		Stainless Steel	Indoor Air (External)	None	None				J, 101
			Treated Water (Includes Steam) (Internal)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)				
				Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and One-Time Inspection			J, 103	

**TABLE 3.1.2-5 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION – REACTOR COOLANT RECIRCULATION SYSTEM**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Non-Reactor Coolant Pressure Boundary (Boiling Water Reactor) (Piping and Fittings) (continued)	M-4	Carbon Steel	Indoor Air (External)	None	None	VII.I.1-b	3.3.1-05	I, 109
			Treated Water (Includes Steam) (Internal)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
				Loss of Material due to Crevice Corrosion Loss of Material due to General Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and One-Time Inspection			J
Non-Reactor Coolant Pressure Boundary (Boiling Water Reactor) (Valves)	M-1	Stainless Steel	Indoor Air (External)	None	None			J, 101
			Treated Water (Includes Steam) (Internal)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
				Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and One-Time Inspection			J, 103
	M-4	Copper Alloys	Dry Air / Gas (Internal)	None	None			J, 105
			Indoor Air (External)	None	None			J, 112

**TABLE 3.1.2-5 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION – REACTOR COOLANT RECIRCULATION SYSTEM**

Component Commodity	Intended Function	Material	Environment	Aging Effect Requiring Management	Aging Management Program	NUREG-1801 Volume 2 Item	Table 1 Item	Notes
Non-Reactor Coolant Pressure Boundary (Boiling Water Reactor) (Piping Specialties)	M-1	Stainless Steel	Indoor Air (External)	None	None			J, 101
			Treated Water (Includes Steam) (Internal)	Cracking due to Thermal Fatigue	TLAA, evaluated in accordance with 10 CFR 54.21(c)			
				Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and One-Time Inspection			J, 103
	M-4	Copper Alloys	Dry Air / Gas (Internal)	None	None			J, 105
			Indoor Air (External)	None	None			J, 112
		Stainless Steel	Indoor Air (External)	None	None			J, 101
			Treated Water (Includes Steam) (Internal)	Cracking due to SCC Loss of Material due to Crevice Corrosion Loss of Material due to Pitting Corrosion	Water Chemistry and One-Time Inspection			J, 103

**TABLE 3.1.2-5 (continued) REACTOR VESSEL, INTERNALS, AND REACTOR COOLANT SYSTEM - SUMMARY OF AGING MANAGEMENT EVALUATION – REACTOR COOLANT RECIRCULATION SYSTEM**

<b>Component Commodity</b>	<b>Intended Function</b>	<b>Material</b>	<b>Environment</b>	<b>Aging Effect Requiring Management</b>	<b>Aging Management Program</b>	<b>NUREG-1801 Volume 2 Item</b>	<b>Table 1 Item</b>	<b>Notes</b>
Non-Reactor Coolant Pressure Boundary (Boiling Water Reactor) (Piping and Fittings (Closed Cooling Water))	M-1	Carbon Steel	Indoor Air (External)	Loss of Material due to General Corrosion	Systems Monitoring	VII.I.1-b	3.3.1-05	E, 133
			Treated Water (Internal)	Loss of Material due to Crevice Corrosion Loss of Material due to General Corrosion Loss of Material due to Pitting Corrosion	Closed-Cycle Cooling Water System	VII.C2.1-a	3.3.1-15	C, 113, 133

Notes for Tables 3.1.2-1 through 3.1.2-4:

Generic Notes:

- A. Consistent with NUREG-1801 item for component, material, environment, and aging effect. AMP is consistent with NUREG-1801 AMP.
- B. Consistent with NUREG-1801 item for component, material, environment, and aging effect. AMP takes some exceptions to NUREG-1801 AMP.
- C. Component is different, but consistent with NUREG-1801 item for material, environment, and aging effect. AMP is consistent with NUREG-1801 AMP.
- D. Component is different, but consistent with NUREG-1801 item for material, environment, and aging effect. AMP takes some exceptions to NUREG-1801 AMP.
- E. Consistent with NUREG-1801 for material, environment, and aging effect, but a different AMP is credited.
- F. Material not in NUREG-1801 for this component.
- G. Environment not in NUREG-1801 for this component and material.
- H. Aging effect not in NUREG 1801 for this component, material, and environment combination.
- I. Aging effect in NUREG-1801 for this component, material, and environment combination is not applicable.
- J. Neither the component nor the material and environment combination is evaluated in NUREG-1801.

Plant-specific Notes:

- 101. The BSEP AMR methodology concluded that stainless steel and nickel-based alloy components in Indoor Air and not subject to aggressive chemical species have no aging effects.
- 102. NUREG-1801 recommends a combination of XI.M9, "BWR Vessel Internals" and XI.M2, "Water Chemistry" to manage cracking due to SCC, IGSCC, and IASCC. BSEP will use a different combination of programs than recommended by NUREG-1801: (1) the Reactor Vessel and Internals Structural Integrity Program, which is a plant-specific program, and (2) the Water Chemistry Program, which is consistent with NUREG-1801 with exceptions.
- 103. Loss of material due to crevice and pitting corrosion is predicted by the BSEP AMR methodology but not by NUREG-1801.
- 104. The BSEP AMR methodology concluded that stainless steel in a nitrogen environment has no aging effects.
- 105. This commodity identifies the compressed air/gas portion of compressed air systems used for pneumatic controls. The BSEP design includes air dryers to ensure that moisture does not cause corrosion for the components in this item (Ref. NUREG-1801, Section VII.D). The BSEP AMR methodology predicts no aging effects for the subject material in a dry air/gas environment.
- 106. The BSEP AMR methodology concluded that copper or aluminum alloy components in Indoor Air and not subject to aggressive chemical species have no aging effects.

107. The BSEP AMR methodology concluded that carbon steel in a nitrogen environment has no aging effects.
108. The BSEP AMR methodology concluded that carbon steel in a lube oil environment has no aging effects.
109. The BSEP AMR methodology does not predict loss of material due to general corrosion on the external surfaces of carbon and low-alloy steel structures and components exposed to operating temperatures greater than 212 °F.
110. From the discussion on page XI.M-44 of NUREG-1801:

"For pump casings and valve bodies, based on the assessment documented in the letter dated May 19, 2000, from Christopher Grimes, Nuclear Regulatory Commission (NRC), to Douglas Walters, Nuclear Energy Institute (NEI), screening for susceptibility to thermal aging is not required. The existing ASME Section XI inspection requirements, including the alternative requirements of ASME Code Case N-481 for pump casings, are adequate for all pump casings and valve bodies."

Since this component credits ASME Section XI inspection requirements for loss of material due to crevice and pitting corrosion, screening for susceptibility is not performed.

111. The Reactor Coolant Recirculation Pump Discharge Line Flow Elements have been assumed to be susceptible to thermal embrittlement. However, the specified one-time inspection may be obviated based on a formal screening for susceptibility.
112. The BSEP AMR methodology concluded that copper alloys in an indoor environment have no aging effects in the absence of sustained wetting.
113. Loss of material due to general, crevice, and pitting corrosion is predicted by the BSEP AMR methodology but not by NUREG-1801.
114. Flow blockage due to fouling is predicted by the BSEP AMR methodology but not by NUREG-1801.
115. Components exposed to steam with a quality greater than 99.5% are considered resistant to loss of material due to flow-accelerated corrosion by the BSEP AMR methodology.
116. The cast austenitic stainless steel material is only applicable to the Main Steam Flow Limiters.
117. Based on a review of industry operating experience, steam dryers are deemed susceptible to flow-induced vibration. Therefore, cracking due to cyclic loading is an applicable aging effect.
118. BSEP requested and received approval to implement Risk-Informed ISI. In support of the submittal, evaluations of degradation mechanisms were performed; and cracking due to thermal and mechanical loadings was evaluated and dispositioned as not applicable. The risk associated with cracking due to SCC is bounded by those components selected for inservice inspection as part of the Risk-Informed ISI Program. Therefore, the current inspection methods as detailed in the ASME Section XI Inservice Inspection, Subsections IWB, IWC and IWD Program, supplemented by the Water Chemistry Program, will manage cracking of small bore piping.
119. The stainless steel material is only applicable to thermowells installed in the feedwater piping.
120. This component is partially clad with stainless steel.

121. The feedwater nozzle safe end on Unit 1 was replaced with a new safe end which allowed welding the feedwater sparger to the safe end. Previously there had been a gap between the nozzle and its thermal sleeve that appeared to be related to feedwater sparger cracking.
122. The Access Hole Covers at BSEP are of a welded design.
123. During Invesel Visual Inspections of the Unit 1 and 2 shrouds, cracking was discovered at various shroud locations. The cracking was severe enough in the H2/H3 weld regions to warrant repair. The H2 and H3 welds join the upper cylindrical shroud section to the slightly smaller diameter middle shroud section via attachment to the outside and inside of the top guide support ring respectively. Plant modifications installed mechanical clamps that will ensure structural integrity to the core shroud at the H2 and H3 welds. The clamps are designed to structurally link the upper shroud section, top guide support ring, and middle shroud section interface, and thereby eliminate the reliance on the H2 and H3 welds for structural integrity.
124. The Unit 1 plugs are of a welded design but the Unit 2 plugs are of a mechanical design. The Unit 2 plug is constructed from SA-276 TP304 for the latch, A276 TP304 for the body, shaft, and pin, and Inconel X-750 for the spring.
125. The jet pump sensing lines were evaluated for flow induced vibration as part of the Extended Power Uprate (EPU). This evaluation determined that the sensing line natural frequency of interest is well separated from vane passing frequency of the recirculation pumps at EPU conditions. The failure of a sensing line at any location would be detectable during jet pump surveillance that is done at least daily. Failure of a sensing line does not affect the pressure measurement taken for post-accident water level monitoring. If one or more jet pumps are inoperable, the plant must be brought to Mode 3 within 12 hours. Therefore, no aging management program is required.
126. The Control Rod Drive (CRD) Return Line has been cut and capped and is therefore not susceptible to cracking due to cyclic loading as discussed in NUREG-0619. NRC Information Notice 2004-08, Reactor Coolant Pressure Boundary Leakage Attributable to Propagation of Cracking in Reactor Vessel Nozzle Welds, was reviewed by BSEP for applicability. The design at BSEP differs significantly from that of the Pilgrim Station. However, recent industry events (particularly at PWRs) regarding Inconel weldments indicated that a review of BSEP programs is appropriate to evaluate possible inclusion in an augmented inspection program. An inspection of the Unit 1 nozzle was performed during the B115R1 outage (Spring 2004) with no indications found. An inspection of the Unit 2 nozzle is planned during the next Unit 2 outage.
127. The SRV Discharge Lines and associated vacuum breaker valves will use the One-Time Inspection Program to manage this aging effect. The one-time inspection will be an ultrasonic examination of the discharge piping section around the suppression chamber waterline.
128. This component is fabricated from low-alloy steel clad with stainless steel and buttered with Inconel.
129. The Unit 1 safe end is fabricated from stainless steel, and the Unit 2 safe end is fabricated from nickel-based alloy.
130. The Unit 1 safe end is bi-metallic and is fabricated from carbon steel and nickel-based alloy.
131. The 1A and 2A CRD Pumps have been replaced with rebuilt pumps with Inconel overlays on the casing to mitigate between-stage erosion degradation.
132. The Reactor Coolant Recirculation Pump Discharge Line Flow Elements are fabricated from Cast Austenitic Stainless Steel.
133. This commodity represents the Reactor Coolant Recirculation Pump Coolers and associated piping that are within the scope of License Renewal due to consideration of spatial interactions.

- 134 The carbon steel components in this commodity group are associated with the Reactor Vessel drain line.
- 135 The support skirt is attached to a stainless steel pad on the vessel by stainless steel weld material.
- 136 Standard Note E applies to Cracking due to SCC, and Standard Note I and Plant-specific Note 118 apply to Cracking due to Thermal and Mechanical Loading.